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*IT is our aim, our ambition, our aspiration even, to build our Journal worthily and well, not for the hour only, but for future years; for the few men in the forefront of an enduring and a laborious Art; for the disciplined ranks of a distinguished Profession; for the young men—Architects to be—and for all who love a clustered column or a flying buttress, a traceried window or a Greek frieze, for the man, too, who honestly plumbs a jamb. . . . .*

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# LETTERPRESS.

**ABATTOIRS:** On the Continent, 12; Public, for London, xlii  
Abbey, Malmesbury, 84  
Aberdare Hall, Cardiff, 161  
Aberdeen: Byron Statue at, 27; Greyfriars' Church Dispute, 28; Master Masons' Association, 95; Jerry Building in, 137, 153, 166; Disappearing, 181; Improvements in, 269  
Academy: Election, An, 92; Architecture at the Royal, 187, 209, 215; Reform of the Royal, 299, 304  
Accounts for Architects, 277, 297, 312  
Advertisements: Street, 12; Hideous, 28; in Edinburgh, 186  
Advertising: Abuses of, 18, 107, 192; National Society for Checking the Abuses of Public, 34  
Aldersgate Parish Church, 76, 181, 300, 361  
Alfred the Great Memorial, 93, 153, 239  
American Architecture, 213  
Amiens Cathedral, 181  
Antiquarian Society, Bradford Historical, 183  
Antiquaries: Society of, 228; of Ireland, Royal Society of, 361; Newcastle Society of, 390  
Antwerp Van Dyck Exhibition, 152  
Archaeological: Society, British, 30; Association, British, 95, 195, 253, 300; Society, Glasgow, 195; Society, Middlesex, 241; Association, Exeter Architectural and, Annual Summer Excursion, 377; Institute of Great Britain and Ireland, Royal, Meeting at Ipswich, 384  
Architect: to the London County Council, 12; The London School Board and its, 12; The Complete, 27; and Engineer, 27; A Veteran, 28; What is an? 59; The London County Council and its, 123, 285, 300; and School Board, 320; v. Artist, 371  
Architects: Menu, An, 44; Bristol Society of, 78; Benevolent Society, 83; and Surveyor, 107; Instructions to, 126; and Birmingham School Board, 134; and Surveyors, Sheffield Society of, 139; Registration, 164, 193, 208, 220, 223, 237, 254, 268, 281, 290, 296, 313, 325, 334, 358, 359, 375, 388; and German M.P.'s, 167; Society of, Annual Dinner, 188; Glasgow Institute of, 195; Responsibility, 290; Accounts for, 277, 297, 312; High Calling, 381  
Architects, Royal Institute of British: Meetings, 8, 41, 73, 105, 148, 190, 224, 249, 283, 295; Studentships and Prizes, 18, 122; To the Fore, 158; Royal Gold Medal Presentation, 310; Suggested Housing of the, in Burlington House, 382  
Architectural: Sculptor, An, 2; Society, Edinburgh, 14, 78, 111, 172, 211, 241; Craftsman's Society, Glasgow and West of Scotland, 14, 172; Ornament, 150; Society, People's Palace, 152, 228; Museum, 161; Outing, An, 166; Umbrella, 181; Element in Engineering Work, 244; Exhibition, An, 244; Society, Devon and Exeter, 361; and Archeological Association, Exeter, Annual Summer Excursion, 377  
Architectural Association: Meetings, 5, 78, 100, 162, 191, 221, 265; Spring Visit, 27; Theatricals, 180; Annual Dinner, 265; Visit to Grim's Dyke, 360; Glasgow, 90, 31, 78, 139, 183, 211, 295; of Ireland, 47; Northern, 93; Edinburgh, 112  
Architecture: "The Wayfarer" on the Austere and the Florid in, 18; Notes on Edinburgh, 21; Taste in, 27; Dundee Institute of, 61, 124; English Church, 69, 85; Gothic, 105, 117; at the Royal Academy, 187, 209, 215; Colonial, at Earl's Court, 200; American, 213; Board School, 229; and the Public, 246; in Clay, 299; What is it? 306, 324; Sculpture in Relation to, 367, 387; Commercial, 381; in France, 391  
Architecture in the Novel: "The Girl from the Farm," 257; "The Return of the Native," 303; "Jude the Obscure," 365  
Art: 50; In Praise of British, 12; Home of, 12; Manchester Municipal School of, 48; and the Funeral Cortège, 59; and the London County Council 92; Market, Causes of the Prevailing Depression in the, 113; Students' Exhibition, 123, 152; Novelty in, 128, 145, 159; Exhibitions Abroad, 135; Exhibitions, The Value of, 135; of William Morris, 157; Gallery for the City, 166; Notes on, 264, 275; The Permanent Gallery of Decorative, 275; Birmingham Muni-

cipal School of, 285; School at Westminster, 289; Workers' Masque, 322; The Government and, 352; Gallery for Newcastle, 366; School for Leek, 389; Exhibition at Kendal, 390; Popularising, 391; Mr. Walter Crane on, 391  
Artist: or Craftsman, 28; The Advantages of Being an, 149; v. Architect, 371  
Artisans, The Training of, 142  
Arts: A Plea for the Unity of the, 17; Society of, 15, 47, 139  
Arts and Crafts: Exhibition, 181; Central School of, 331, 356  
Aspect and Soil in Relation to the Dwelling-House, 221, 238  
Asylum, Bexley Heath, 376  
Audley House, Salisbury, 377  
Avenue, A Splendid, 44

**BACTERIAL TREATMENT** of Sewage, cxxvii  
Balusters and Balustrading, The manufacture of Terra-Cotta, lxxiv  
Bank, New Post Office Savings, at Kensington, 314  
Bath Abbey, The West Front of, 311  
Baths: and Wash-houses, Public, 8; Public, 74, 89; and Wash-houses for Shoreditch, 108  
Bates, Harry, 2  
Batley Market Hall, 285  
Beams: Strains in, x; Wooden, lxxv, 178; Cast Iron, cxxv; Wrought Iron, cxxvi, 252  
Beauties, Preserving Natural, 300  
Beautifying London, 126  
Beauty, Aspirations after, 28  
Belfast: New Cathedral for, 27; Mechanical and Engineering Association, 112  
Benevolent Society, The Architects', 83  
Berlin Secessionists' Exhibition, 253  
Beverley Minster, 42  
Bexley Heath Asylum, 376  
Birmingham: Association of Mechanical Engineers, 31; Municipal School of Art, 28, 285; School Board and Architects, 134  
Blackburn, Gladstone Statue at, 152  
Black Pigments, The Manufacture of, 151  
Bogies, Studio, 285  
Bradford: Fire Station Competition, 43, 55, 57, 94, 107, 134, 146; Historical Antiquarian Society, 183; Cartwright Memorial Hall Competition, 209, 216  
Bricks and Mortar, 11, 27, 43, 59, 76, 92, 107, 123, 134, 152, 166, 181, 192, 209, 223, 239, 252, 268, 284, 299, 315, 331, 346, 360, 376, 390  
Bricks as an Investment, 269  
Bridge: Design for Vauxhall, 11, 76, 82, 107, 224; Widening Trinity Road, 44; at Venice, A New, 118; The New Jamaica, Glasgow, 192; Kew, 376  
Bristol: Society of Architects, 78; Vanishing, 162  
Builders: A Judge's Opinion of, 12; and the London Government Bill, 59, 92, 123, 223; Nursery Rhymes for, 263, 275; Master, Association Conference, iv; Notes, iv, xii, xix, xxix, xxxvi, xlv, lii, lx, lxxvii, lxxvi, lxxxiii, 183, cxx, cxxviii, cxxxvi, cxlvii, cli, cxlviii, cxlxxvi, cxlii, cxi, cxxviii  
"BUILDERS' JOURNAL": Competition for Designs for a Country House, 98, 114, 126, 142, 163, 174, 186, 200, 204, 220, 244, 254, 258, 268, 274, 290, 304, 321, 357, 366, 373, 389  
Building: Humours of, A Warm Morning, 36; Trades School, 108; Trades, The London, 142, 152; Trade, The Dispute in the, 194, cxii, cxix, cxxvii, cxxviii, 258, cxliii, cli, 281, cxix, cxlvii, cxlviii, cxlxi, cc, ccviii; Trades Exhibition, 167, xc, xcviii, cxi; Materials, Ancient Egyptian, 269; By-laws, 283, 295; What is a? 366; Practice in Paris, cli; Trades, Mr. John Burns and the, 382  
Burgos, Spain, 353, 370  
Burlington House, Suggested Housing of the Royal Institute of British Architects in, 382  
Burns, Mr. John, and the Building Trades, 382  
By-laws, Build ng, 283, 295  
Byron Statue, Aberdeen's, 27

**CANADIAN NOTES:** I.—The Market for Building Materials, cxxiv; II.—The Portland Cement Industry in America, cxlii  
Canning's Statue, 315  
Camera Club, Devonport, 14

Cape Town, New Town Hall at, 363  
Carbonization of Wood, 172  
Cardiff, The Aberdare Hall, 161  
Carlton Hotel, Pall Mall, 27  
Carpenters': Hall, 48; Companies Examinations, 311  
Carthaginian Antiquities and Discoveries, 285  
Cartwright Memorial Hall Competition, Bradford, 216  
Cast Iron Beams, cxxv  
Castle: Star, Scilly, 192; Sizergh, and Levens Hall, Old English Woodwork at, 250  
Cathedral: Elgin, 3, 19; Monument for St. Albans, 11; Belfast's New, 27; Restoration, More, 28; Restorations at Winchester, 123; Kilkenny, 166; Amiens, 181  
Catacombs at Moorfields, 152  
Cement Famine, x, xxix  
Chairs, Some, and a Moral, 33  
Chapel at Sutton, A Baptist, 134  
Charing Cross Station, 284  
Chelsen Embankment Disfigurement, 209, 224, 269  
Chiswick Mall, Iron Gate in Front of Walpole House, 253  
Church: Dispute, Greyfriars', 28; Architecture, English, 69, 85; Preston, Haddingtonshire, 135; St. Mary's, Moorfields, 134, 152; St. George's, Liverpool, 166; Shakespeare's, 166; St. Michael Bassishaw, 167; St. Dunstan's, Fleet Street, 192, 223, 269, 390; New, at Ealing, 294; Southend Presbyterian, 299; Aldersgate Parish, 76, 181, 300, 361; St. Mary-le-Strand, 315; Station under St. Mary Woolnoth, 332; Discoveries at Longtorgan, 362  
Churches in Palestine, Early Christian, 73; Some Essex, 262; Some, in North-Eastern Lindsey, 327; Some Notes on Suffolk, 383  
Clay, Architecture in, 299  
Clock Tower, Design for a, 299  
Coal-Smoke Abatement Society, 92  
Coffer, An Old Oak, 376  
Colchester's New Town Hall, 316  
Colour: 87; Effects, 24; Decoration, 37, 60; to Interior Ornament in Relief, The Application of, 148  
Commercial Architecture, 381  
Commissions: Secret, 98, 158; Trade, 98, 114  
Commons, London, and their Destiny, 351  
Como International Electrical Exhibition Destroyed by Fire, 360  
Companies, New: Arvon Brick and Tile Company, Limited, 196; Bagworth Brick Company, Limited, 196; Carnells, Limited, 196; Richard Bennett and Company, Limited, 196; Wharfedale (Ilkley) Estate Company, Limited, 196; S/X Brick and Cement Company, Limited, 196; Hurry and Seaman's Patents, Limited, 196; Proprietors of the Central Exchange Buildings, Limited, 211; Measures Brothers and Co., Limited, 211; London and Brighton Brick, Tile and Terra-Cotta Co., Limited, 211; William Moss and Sons, Limited, 211; Carlisle Estate Company, Limited, 211; Argyle Street and Wellington Street Property Co., Limited, 211; Jeasmond Syndicate, Limited, 211; English-Foreign Estates and Property Development Co., Limited, 212; A. H. Laver, 228; Isle of Walney Estates Co., Limited, 228; Clifton Drive (St. Anne's-on-Sea) Land and Building Company, Limited, 241; Measures Brothers (1899), Limited, 241; Horsfall Destructor Company, Limited, 242; South Beckenham Land Company, Limited, 242; South Derbyshire Land and Building Company, Limited, 242; Artillery Mansions, Limited, 271; Carl Hentschel, Limited, 271; George Freeman, Limited, 272; Hedingham Brick Company, Limited, 272; Midland Brick Company (Wellingborough), Limited, 272; Plymouth Wharves, Limited, 363; Jarrah Timber and Wood Paving Corporation, Limited, 395; Weybridge Furnishing Company, Limited, 395; Saxon Portland Cement Company, Limited, 395; Bargoed Artizans' Cottage Company, Limited, 395; Smokeless Chimney Company, Limited, 395; North Riding Assets Company, Limited, 395; Brushes, Limited, 395; Times Nut and Bolt Works, Limited, 396; Robert Stephenson and Company, Limited, 396; Joseph Nathan and Company, Limited, 396

Competition: "BUILDERS' JOURNAL," 98, 114, 126, 142, 163, 174, 186, 200, 204, 220, 230, 244, 254, 258, 268, 274, 290, 304, 321, 357, 366, 373, 389; A School Board, 174; Bradford Cartwright Memorial Hall, 216; An "ARCHITECTURAL REVIEW," 320; A Stockton, 352  
Competitions: Dundee Institute of Architecture, Science and Art, 285; The Conduct of, 319  
Complete Architect, The, 27  
Concert Halls, 43, 72  
Contract and Competition List, v, xiii, xxi, xxix, xxxvii, xlv, lii, lxi, lxix, lxxxvii, lxxxv, 197, cxiii, cxxi, cxxix, cxxvii, cxlv, clii, clxi, clxix, clxxvii, cci  
Contractors: and the London County Council, 230; Dilemma, A, 244  
Correspondence: "The Hull Library Competition," by A. H. Goodall, 11; "London Doorways," by T. Frank Green and Rupert C. Austin, 11; "The Registration of Plumbers," by S. F., 11; "A Proposed Technical Court," by C. McArthur Butler, 26; "Factory Design," by M. Powis Bale, 42; "Foundations for Factories," by "J. D.," and J. H. Pearson, 57, 91, 119; "Bradford Fire Station Competition," by Geo. Hepworth, 57; "Soane Medalion Designs," by W. Stanley Bates, 72; "Strains in Beams," by Albert Grenville and G. A. T. Middleton, 72, 106; "Moisture during Frost," by "Engineer," 92, 106, 133; "National Control of British Land," by James Haysman, 120; "Sanitary Safety," by Charles E. Gritton, 133; "A Plan of London," by E. W. H., 155; "Registration of Architects," by W. M. R., C. McArthur Butler, "Architect," Chas. S. Thomas, "A Potential Architect," A. R. Jemmett, "Transition," Horace T. Bonner, "A Young Architect," "G. M.," G. A. T. Middleton, "Practical," "Builder and Contractor," "Three Pupils," "H. D.," "A Country Practitioner" and Walter Emden, 164, 193, 208, 220, 237, 254, 268, 281, 296, 313, 334, 359, 375, 388; "Making Blue Prints," by Alexander Drew and John Wornell, 164, 178; "Wooden Beams," by D. Forbes Smith, 178; "Books on Brick and Stone Walls," by John Hebb, 193; "Fitting up and Sanitation of Cow Houses," by S. S. Platt and Editors of "SPECIFICATION," 193, 220; "Preservation of Historic Remains," by Hugh Blackiston, 208; "Efflorescence on Tiles," by Harry Hems, 208; "Small Competitions, Are they Desirable?" by "H. W. W.," "Aspirant," and "Devonian," 254, 268, 313; "Our St. Paul's Cathedral Plate," by "F. C.," and George Aitchison, 281, 334; "Gas Stoves for Heating," by Edward A. Harman, 281; "The Dispute in the Building Trade," by Thomas Woods, 281; "Rowland Hill's Chapel at Hammersmith," by William Holditch Stevens, 334; "Rights of Light," by J. D., 359; "Typewriters for Surveyors," by G. F. S., and E. R., 375  
Cottage: Workhouses, 59; Homes at Middlewood, near Rochdale, 86, 103, 120; Homes, 123  
Cotton Town, 81  
Councillor Again, The Irresponsible, 34  
Covent Garden Theatre, 27, 44, 209  
Coverings and Roofs, Cheap, cxc, cxcviii  
Craftsman or Artist, 28  
Craftsman's Society, Glasgow and West of Scotland Technical College Architectural, 14, 172  
Crane, Mr. Walter: Successor to, 376; on Art, 391  
Cretan Exploration Fund, 300  
Cromwell's Statue, 76, 186  
Croydon, Whitgift Hospital at, 300

**DECORATION:** Colour, 37, 60; Marble, 68; Need of an English School of, 243  
Decorations in Relief, 126  
Decorators, Institute of British, 59, 136  
Della Robbia Pottery, 204  
Denmark, Labour Troubles in, 352, cxxxv, cxlv, cli, clx  
Design, The Teaching of, 81  
Detail, the Study of, 357  
Devon and Exeter Architectural Society, 361  
Devonport Camera Club, 14  
Diamond Cut Diamond, 92  
Dinner, Young and Marten's, xxxv



Discoveries : At Pompeii, 43; In the Forum, 44, 107, 181, 223, 316; At the Tower of London, 269; Carthaginian Antiquities, 285; In Mexico, 316; In Palestine, 360; At Longforgan Church, 362.

Dr. Syntax Inn, 239  
Dubois, Paul, 331  
Dundee Institute of Architecture, Science and Art, 61, 124, 285  
Dwelling : House, Soil, and Aspect in Relation to the, 221, 238; Accommodation in Large Cities, 1xvi

**EALING**, New Church at, 294  
Earl's Court, Colonial Architecture at, 200

Earthquake in Italy, 377  
Eastleigh Urban District Council Municipal Offices, 56

Economic Club, Toynbee Hall, 271  
Edict, The Pacca, 130

Edinburgh : Architectural Society, 14, 78, 111, 172, 211, 241; Architecture, Notes on, 21; Firm, An Ancient, 76; Architectural Association, 112; "The Scotsman's" New Buildings in, 170; and Advertisements, 186

Egyptian Building Materials, Ancient, 269

Electric : Locomotives, 43; Lighting, The London County Council and, 44; Tramways in New York, 76

Electricity, Fog and Smoke, 82  
Elgin Cathedral, 3, 19

Embankment Disfigurement, Chelsea, 209, 224

Employers in Parliament, 114  
Engineer and Architect, 27

Engineers : New Building, Institution of Mechanical, 13; Leeds Association of, 14; Society of, 31, 95, 172, 211; Birmingham Association of Mechanical, 31; Institution of Mechanical, 47, 393; Manchester District Institution of Gas, 79; Society, Civil and Mechanical, 124; Incorporated Association of Municipal and County, 241; Municipal Conference, 334; Society of, Visit to Folkestone Pier Works, 374; Institution of Heating and Ventilating, 393

Engineering : Association, East of Scotland, 15; Society, Liverpool, 31; Society, Yorkshire College, 47, 111; Mechanical Association, Belfast, 112; Work, The Architectural Element in, 224; Notes, v, xiii, xv, xxviii, xxxvi, xlv, liii, lxi, lxx, lxxvi, lxxvii, 183, cxii, cxx, cxxvi, cxxvii, cxlvii, cxli, cxlix, clxvii, cxci, cxcix, cxi

Enquiries Answered : Approximate Estimates, 9; Gwilt's Encyclopedia of Architecture, 9; Removing Paint and Whitewash from Brickwork, 9; Books on Architecture and Heraldry, 9; Design for a Dovecote, 9; Bakeries, 26, 42; Books on Surveying and Sewage Treatment, 26; Books on Design and Law, 26; District Surveyors' Examination, 26; Self-Instruction for Sanitary Institute Examination, 26; Rights of Light, 42; Carpentry and Joinery, 42; Batty Langley's "Five Orders of Architecture," 42; Architect and Quantity Surveyor, 42; Lead Burning, 50; Reproducing Drawings, 50; Moisture during Frost, 50, 92, 106, 133; Architectural Exhibits at the Academy, 71; Books on Masonry, 71; Acetylene Gas, 71; Cost of Public Baths, 71; Rain Drift through Solid Granite Walls, 71; Fuming and Polishing Mahogany, 71; Waterproofing Brick Walls, 71; Science and Art Examinations, 91; Books on Steel and Iron Work, 91; Builders' Liability for Stability of Structures, 91; Building Construction Honours Examination, 91; Coke Breeze Flats, 91; Model Answers to Building Construction Questions, 106; Colonial Surveyorships, 106; War Office Surveyorships, 106; Sewage from Infectious Diseases Hospital, 106; Cold Storage, 166; Proposed Building Extension, 119; Defects in Plaster Work, 119; Meaning of "Prime Cost," 119; Surveyorships in the Royal Engineers, 119; Making Blue Prints, 133, 164, 178; Lectures by William Morris, 153; Biting up of Cow Houses, 153, 193, 220; Books on Brick and Stone Walls, 153, 193; Systems of Lettering, 153; Estate Duty, 153; Books on Pumping and on Professional Charges, 154; Joint Drainage, 154; Armorial Bearings, 164; Efflorescence on Tiles, 164, 203; Ornamental Lettering, 164; Colouring Portland Cement, 164; Institute of Sanitary Engineers, 164; Surveyorships and Engineering Institutions, 164; Building Construction Classes, 164; Book on Estimating, 179; Sanitary Institute Exams., 179; Book on Medieval and Renaissance Architecture, 179; Mexican Architecture, 179; Competition for Boys' School, 179; Size of Beams for Concrete Floor, 179; Factor of Safety for Woolen Beams, 179; Drawing in the "BUILDERS' JOURNAL," 193; Building Contract, 193; Rights of Water Companies, 204; Book on

Library Construction, 226; Study of Ornament, 226; Preparation of Wall for Papering, 238; Measuring-up Churches, 238; Architects' Charges, 251; District Surveyorships, 251; Wrought Iron Beams, 251; Swiss Architecture, 251; Architectural Sketching, 251; Joint Drainage, 252; Lias Lime for Plastering, 252; The Practice of Engineering, 268; Concrete Mixing, 268; Half-Timber Work, 286; Cement Covering for Brick Walls, 286; Dissolving White Shellac, 286; Designs for Small Cottages, 297; Constructing Tiled Roof, 297; The Old "Blue-Coat" School at Westminster, 297; Water Supply and Drainage, 297; Sedilia, &c., in Lincolnshire and Yorkshire Churches, 297; Arts and Crafts Exhibition, 311; Building Wall over Shop, 311; Artisans' Dwellings, 326; Rights of Light, &c., 326, 359; Right of Owner in regard to Drainage, 326; Cabmen's Shelters, 345; Typewriters for Surveyors, 345, 375; Books for Building Construction Students, 345; Examinations for Surveyors, 356; Intersection of Roofs, 356; Iron and Glass Roof to Coach-house, 356; Liability for Damage to Neighbouring Premises, 373; Measuring-up Plastering, 373; Construction of Breweries, &c., 373; Taking-off Quantities, 373; Ownership of Working Drawings and Detailed Accounts, 373; Green Stain, 388; Membership of the Society of Architects, 388; R.A. Gold Medal and Norman Shaw's Works, 388

Essex Churches, Some, 262  
Exchange, A General City, 285

Exeter : and Devon Architectural Society, 361; Architectural and Archaeological Society, Annual Summer Excursion, 377

Exhibition : Furnishing Trades', 117; Art Students', 123, 152; The Antwerp Van Dyck, 152; An Architectural, 241; A Portrait, 269; destroyed by Fire, The Como International Electrical, 360; Art, at Kendal, 390

Exhibitions : Abroad, Art, 135; The Value of Art, 135; A Central Shelter for London's, 287  
Exploration Fund, Cretan, 300

**FACTORIES**, Foundations for, 25, 57, 91, 119

Factory Design, 25, 42, 57, 91, 119

Fawcett Fire-Resisting Construction, cxlii

Filter, New Sewage Tank and, cxxvii

Filtration Scheme, A Model, lix

Fire : Prevention, 6, 181, 192; Station Competition, Bradford, 43, 55, 57, 94, 107, 134, 146; Brigades, Rural, 167, 390; Tests, 167, 269, 300, 332, 361, 391; Geography, 214; Protection, Government Control of Local Authorities in regard to, 390

Fireproof Construction, 167

Fire resisting : Materials, Tests with, xix; Construction, Fawcett, cxlii; Material, A New, cxi

Fires in Tall Buildings, 174

Fishmoore Hall, Redecoration of, 21

Florence, "Improvements" in, 12

Fog, Smoke and Electricity, 82

Folkestone Pier, Extension Works, 374

Forum, Finds in the, 44

Foundations for Factories, 25, 57, 91, 119

France, Architecture in, 391

Funerel Cortège and Art, 59

Furnishing Trades Exhibition, 117

Furniture, Well Designed, 363

**GABLE TYMPANUM**, Terra-Cotta, clviii

Gall, The One Drop of, 97

Gas : Engineers, Manchester District Institution of, 79; Water, xxxv

Gate, Iron, in Front of Walpole House, Chiswick Mall, 253

German M.P.'s and Architects, 167

Geographical Society, Royal, 79

George the Fourth's London, 273

"Girl from the Farm, The" : Architecture in the Novel, 257

Gladstone and Millais Memorials, 50, 93, 123, 152, 192

Glass : Stained, 6, 19; Makers and their Work, 300

Glasgow : and West of Scotland Technical College Architectural Craftsman's Society, 14, 172; and Beauty, 28; Architectural Association, 30, 31, 78, 139, 183, 211, 295; Corporation Galleries, 61; Philosophical Society of, 79, 111; The New Jamaica Bridge, 192; Institute of Architects, 195; Archaeological Society, 195

Goetze, Pictures by Mr. Sigismund, 76, 181, 361

Gothic Architecture, 105, 117

Government : Buildings, The New, 59, 127, 146, 239, 332; and Art, 352

Greyfriars' Church, 28

Grim's Dyke. Visit of the Architectural Association to, 360

Guildford, Picturesque, 268

**HADDINGTONSHIRE**, Preston Church, 135

Haddon Hall, 223

Hampton Court, A Find at, 76

Harrogate : and its Pump Room, 98; Kursaal for, 126

Health, Royal Institute of Public, 139

Heating and Ventilating : clxvi, clxxiv; Engineers, Institution of, 393

Heroes, Mr. Watt's Gallery of Humble, 76, 181, 300

Highgate Literary Association, 78

Hine, Death of Mr. Thomas Chambers, 28

Holborn to Strand Improvement Scheme, 12, 76, 207, 301

Holiday Sketching, 351

Holland, Through, 35, 67

Home of Art, 12

Honours, Birthday, 258

Hospital : St. Peter's, 43; Whitgift, at Croydon, 300; Reform, from a Sanitary Point of View, lxxxi

Houses : "BUILDERS' JOURNAL" Competition Designs for a Country, 98, 114, 126, 142, 163, 174, 186, 200, 204, 220, 230, 244, 254, 258, 268, 274, 290, 304, 321, 357, 366, 373, 389; Agency, A Municipal, 152; of Commons, Disinfecting the, 209; An Old Oxford, 315; A Perfect, 382

Houses, Swedish Country, 245, 260

Housing : Problem, 43, 92; of the Labouring Classes, 168, 189, 202; Schemes and Insanitary Areas, xxvii, xxviii

Humours of Building : A Warm Morning, 36

**IMPROVEMENT** to the Thames Embankment, at Westminster, 285

Indicator, An Artistic Street Station, 391

Industrial Peace, 59

Inn, Dr. Syntax, 239

Insanitary : Property in Liverpool, 153; Areas and Housing Schemes, xxvii, xxviii

Inspectors' Sanitary Association, North-Western and Midland, 392

Interior Ornament in Relief, The Application of Colour to, 148

Ireland : Architectural Association of, 47; Round Towers of, 217, 233, 250

Irish : Builder, 316; Antiquities, 361

Iron : and Steel Works Managers, South Staffordshire Institute of, 124; Beams, Cast, cxxxv; Beams, Wrought, cxxvi, 252

Ironwork, A Chat on Ornamental and Decorative, 132

Italy, Earthquake in, 377

**JAMAICA BRIDGE, GLASGOW**, 192

Jerry-Building in Aberdeen, 137, 153, 166

Jones, Inigo, Some Notes on the Works of, 115, 143, 175

**KENDAL**, Art Exhibition at, 390

Kenington : The Old and the New, 151; Town Hall Extension, 222; Palace, 252

Kew Bridge, 376

Keystone, 10, 29, 58, 72, 94, 109, 122, 138, 150, 171, 193, 210, 227, 236, 255, 271, 288, 301, 315, 326, 344, 375, 380, 392

Kilkenny Cathedral, 166

Killarney, To Save, 300, 320

**LABOURING CLASSES**, Housing of the, 168, 189, 202

Labour Troubles in Denmark, 352, cxxxv, cxlv, cli, clx

Landlord, The London County Council as, 158

Leaderettes : The Misuse of Material, 1; A Plea for the Unity of the Arts, 17; "The Wayfarer" on the Austere and the Florid in Architecture, 18; Vistas, 33; Some Chairs and a Moral, 33; On "Going to Nature," 49; Opening of the Great Central Railway, 65; The J. R. Robert's Wing, Purley Schools, 65; A Cotton Town, 81; The Teaching of Design, 81; The Art Teaching of William Morris, 97; The One Drop of Gall, 97; Causes of the Prevailing Depression in the Art Market, 113; The Suburban Thames, 113; The Plaintiff of the Student, 125; The Way About London, 141; The Art of William Morris, 157; Railways and Suburban London, 157; "Why Can't You Let it Alone?" 173; The House of Lords and St. Paul's, 173; Turner at the Guildhall, 185; "Making the Ugly," 199; Colonial Architecture at Earl's Court, 200; A Coming Restoration, 213; American Architecture, 213; Board School Architecture, 229; A Lesson from Sir W. Richmond's Failure, 243; The Ruin of a Picturesque Village, 243; Architecture in the Novel : "The Girl from the Farm," 257; "The Study of Detail, 257; "The Wayfarer" in Paris, 258; George the Fourth's London, 273; The Art School at Westminster, 289; Wanted : A Central Shelter for London's Exhibitions, 289; Architecture in the Novel : "The Return of the Native," 303; The Conduct of Competitions, 319; The Leather Bottle, Merton, 319; An Architectural Plan, 320; London Com-

mons and their Destiny, 351; Holiday Sketching, 351; Architecture in the Novel : "Jude the Obscure," 365; London's Great Railway Stations, 366; An Architect's High Calling, 381; Commercial Architecture, 381

Lectures : "Stained Glass : By Christopher Whall, 5, 19; "Ornament : By Prof. Banister Fletcher, 24; "English Church Architecture : By H. A. Prothero, 69, 85; "Mosaics : By H. J. Powell, 103; "Architectural Ornament : By T. Delgaty Dunn, 150; "Modelling as Applied to Architecture : By F. W. Pomeroy, 162; "Restoration as a Destructive Art," by Sir W. Brompton Gurdon, 384; Public Abattoirs for London, xlii

Leeds Association of Engineers, 14

Leek, Art School for, 389

Legal Cases : Scaffolding, iv; Mortar, xii; Ownership of Subsoil, xiii; London Building Act, xix; Workmen's Compensation, 59, 135, 214, iv, xii, xxviii, xlv, lii, lxviii, lxxxiii, cxxxvi, clx, clxvii, clxxvi, clxxxiii, cxcii, 366, cc, 375, cviii, cxix; Claim for Work Done, 88; Personal Injury, lii; A Carter's Claim, lx; A Claim for Extra Work, lx; Architect and Builder, lxviii; Paving Accounts, lxix; A Drainage Case, lxxvi; Builders and By-laws, lxxxiii; Bankruptcy Law, lxxxiii; Damage Caused by Falling Mortar, lxxxiii; Building Regulations at Felixstowe, lxxxiii; Contract Case, lxxxiv; Building Dispute at Lynn, 182; Delay in Completion of Contract, cxx; Glasgow By-laws, cxx; Aberdeen By-laws, cxx; Prestwich By-laws, cxx; Sewers, cxx; Liabilities of Builders and Contractors, cxxviii; Are Altered Buildings New Buildings? cxxviii; A Road-making Case, cxxviii; Dispute between Architect and Builder, cxxviii; Building Offences at Ossett, cxlv; Disputed Building Line, cli; Risk of Employing a Gouty Man, clx; Railway Contractors sued for Damages, clxi; A Bricklayer's Bill, clxvii; A Point for Road Contractors, 320; Mersea School Board and Architect, 320; Unsafe Scaffolding, cxcii; An Appeal by a Railway Painter, cxcii; A Mason's Labourer Loses a Compensation Case, cxcii; A Penny a Week Damages, cxcii; What is a Building? 366; Accident at Christ Church, Birmingham, cc; A Dependency Case, cc; A Curious Compensation Case, 375; The Loss of an Eye, cviii; Damages for Slander of Property, cviii; Electric Light Advertisements, cviii; Wooden Structures and the London Building Act, cviii; A Brickmaking Case, ccix; A Foreman's Wages Case, cxi

Leicester, New Market Buildings at, 167

Leighton Bequest, The, 34

Levens Hall and Sizergh Castle, Old Libraries, Public, 41

Light, Rights of, 326, 359

Lighting, The London County Council and Electric, 44

Lindsey, Some Churches in North-Eastern, 327

Lisieux, Some Notes from, 279

Literary Association, Highgate, 78

Liverpool : Engineering Society, 31; St. George's Church Spire, 153, 166; Insanitary Property in, 153; School of Architecture and Applied Art, 315; An Artistic Street Station Indicator for, 391

Llanannan, A Memorial at, 76

Locomotives, Electric, 43

London : Nuisances, 2; School Board and its Architect, 12; Government Bill, 59, 92, 123, 223; Disappearing, 76; Beautifying, 126; The Way About, 141; Railways and Suburban, 157; New View in, 186; Improvements, 207, 209; Overcrowded, 230; Discoveries at the Tower of, 269; George the Fourth's, 273; Commons and Their Destiny, 351; Great Railway Stations of, 366; School Board Buildings, 377

London County Council : and Electric Lighting, 44; and Art, 92; and its Architect, 12, 123, 285, 300; as Landlord, 158; and Contractors, 230

Longforgan Church, Discoveries at, 362

**MALDON**, 305

Malmesbury Abbey, 84

Manchester : Municipal School of Art, 48; District Institution of Gas Engineers, 79; Technical School, 378

Marble Decoration, 68

Market Hall, Batley, 285

Mask, The Art Workers', 322

Masons' Association, Aberdeen Master, 95

Masters and Men, iv, xi, xx, xxviii, xxxv, xlv, li, lx, lxviii, lxxv, lxxxiii, 182, 194, cxii, cxix, cxxvi, cxxxv, cxlv, cli, clx, clxvii, clxxvii, cxci, cc, cviii

Material, The Misuse of, 1

Mechanical Engineers : New Building of the Institution of, 13; Birmingham Association of, 31; Institution of, 47, 393



Mechanical and Engineering Association, Belfast, 112  
Medievalism, The Revival of, 274  
Memorial to the Duchess of Teck, 173  
Menu, An Architects', 44  
Men Who Build: No. 56. James A. Morris, 201  
Mercantile League, British, 285  
Merton, "The Leather Bottle," 319  
Mexico, Archaeological Discovery in, 316  
Middlemore, Mr. J. F., 50  
Middlesex Archaeological Society, 211  
Middlewood, near Rochdale, Cottage Homes at, 86, 103, 120  
Midland Institute (Archæological Section), 139  
Millais and Gladstone Memorials, 50, 93, 123, 152, 192  
Milne, James, and Son, Ltd., 76  
Minster, Beverley, 42  
Misuse of Material, 1  
Models, 186  
Monument of Christ for St. Alban's Cathedral, 11  
Morris, William, The Art Teaching of, 97, 157  
Mosaic Panel in the Houses of Parliament, 59  
Mosaics, 103  
Mouldings, Methods Used in Producing Terra-Cotta, I, lviii.  
Municipal: Offices, Eastleigh Urban District Council, 56; Trading, 107; and County Engineers, Incorporated Association of, 241; Enterprise and Its Foes, 304; Engineers' Conference, 334  
Museum: The Architectural, 161; Victoria and Albert, South Kensington, 236, 316

NATURAL HISTORY Society, Torquay, 14  
Nature, "On "Going to, 49  
Newcastle: An Art Gallery for, 366; Society of Antiquaries, 390  
New York, Electric Tramways in, 76  
Northern Architectural Association, 93  
Novel, Architecture in the: "The Girl from the Farm," 257; "The Return of the Native," 303; "Jude the Obscure," 365  
Novelty in Art, 128, 145, 159  
Nuisances, London, 2  
Nursery Rhymes for Builders, 263, 275

OLDHAM CORPORATION, The Jubilee of the, 315  
Olympic Theatre, 44  
Ornament: 24; in Relief, The Application of Colour to Interior, 148; Architectural, 150  
Oxford House, An Old, 315

PACCA EDICT, The, 130  
Palace, Kensington, 252  
Palestine: Early Christian Churches in, 73; Exploration Fund, 390  
Panels, Two Carved Wood, 239  
Papers Read: "Public Baths and Washhouses," by A. Hessel Tiltman, 8; "Notes on Edinburgh Architecture," by Thomas Allan Croal, 21; "Factory Design," by J. H. Pearson, 25, 42, 57, 91, 119; "Colour Decoration," by Cole A. Adams, 37, 60; "Public Libraries," by J. M. Brydon and F. J. Burgoyne, 41; "Marble Decoration," by Arthur Lee, 63; "Early Christian Churches in Palestine," by A. C. Dickie, 73; "Public Baths," by A. Saxon Snell, 74, 89; "Colour," by Hubert C. Corlette, 87; "Certain Reflections on the English Renaissance," by Reginald T. Blomfield, 100, 121; "Gothic Architecture," by John Bilson, 105, 117; "The Application of Colour to Interior Ornament in Relief," by H. V. Lancaster and F. Lynn Jenkins, 148; "The Advantages of being an Artist," by Bulkeley Creswell, 149; "Housing of the Labouring Classes," by P. Fyfe, 168, 189, 202; "Specifications," by F. W. Macey, 191, 205, 224, 225; "Round Towers of Ireland," by Anthony Scott, 217, 233, 250; "Soil and Aspect in Relation to the Dwelling-house," by V. G. Poore, 221, 238; "Architectural Element in Engineering Work," by H. Heathcote Statham, 224; "The Public and Architecture," by C. Ernest Monro, 246; "The Planning and Construction of Board Schools," by T. J. Bailey, 249, 266; "Notes on Art," by William Meek Page, 264, 275; "Round about Ripon and York," by James McKissack, 291; "Architecture: What is it?" by James A. Morris, 306, 324; "Sculpture in Relation to Architecture," by T. Duncan Rhind, 367, 387; "Architecture v. Artist," by J. Jerman, 371; "Heating and Ventilating," by Walter Jones, clxvi, clxvii; "Sewage Disposal," by D. Balfour, cx, cxviii; "Sewer Ventilation," by J. Morgan, ccvi  
Paris: A Forgotten Quarter of, 40; Disappearance of Old, 252; The Wayfarer in, 258; Building Practice in, cl Pavements, Moving, 12  
Peace, Industrial, 59

Pelayo, The Tomb of, 269  
People's Palace Architectural Society, 152, 228  
Petra Fire-Resisting Slabs, ccvi  
Philosophical Society of Glasgow, 79, 111  
Photographic Records, 28  
Pictures: The Hanging of, 299; The Queen's, 315  
Pier Extension Works, Folkestone, 374  
Pigments, The Manufacture of Black, 151  
Pistrucci, Benedetto, 369  
Plan, An Architectural, 320  
Plasterers' Strike, iv, xi, xx, xxviii, xxxvi, 82, xlv, li, lix, lxxviii, lxxvii, lxxxiii, 183, 194, cxii, cxix, cxxvii, cxxviii, 258, cxliii, cli, 281, clx, ccvii  
Plea for the Unity of the Arts, 17  
Plymouth Institution, 47  
Pompeii, Discoveries at, 43  
Poor, Shelters for the, 153  
Portrait Exhibition, A, 269  
Post Office Savings Bank at Kensington, 314  
Potter as Historian, 299  
Pottery, Della Robbia, 204  
Preston Church, Haddingtonshire, 135  
Professional Practice: Aberchirder, 137; Aberdeen, 13, 30, 45, 77, 110, 122, 195; Aberlilly, 316; Airdie, 255; Axminster, 61; Ballincotton, Ireland, 210; Bangor, 362; Beeston, 316; Belfast, 93; Bilston, 394; Birkenhead, 45, 61, 302; Birmingham, 226, 286, 302, 317; Blackhead, 13; Bleanau Festiniog, 61; Bocking, 270; Bootle, 61; Bordesley, 110; Bradford, 110, 169, 255; Breaston, 210; Bridford, 110; Bridlington, 77; Bristol, 13, 61, 110, 137, 169, 286, 362; Buith Wells, 317; Burton-on-Trent, 329; Caerphilly, 93; Cardiff, 154, 169; Chagford, 226; Clacton-on-Sea, 317, 394; Clontarf, Ireland, 110; Cresswell, 255; Croydon, 93; Dagenham, Essex, 122; Doncaster, 137; Douglas, I.M., 45, 111, 182; Dover, 317; Driffield, 394; Dublin, 13, 61; Dudley, 286; Dundee, 30, 77, 93, 110, 122, 240, 255, 329; East Compton, 110; Edinburgh, 93, 110, 169, 362, 378; Exeter, 111, 394; Folkestone, 394; Fraserburgh, 240; Glasgow, 287; Gosport, 154; Halifax, 226; Hanley, 394; Harrogate, 30; Hawarden, 255; Hawkesay, Staffs., 302; Hexham, 182; Hollinwood, 378; Horncastle, 77; Hull, 77, 329; Hyde, 77; Inverness, 137; Ipswich, 240; Keighley, 240; Kilbarhan, 122; Lancaster, 137; Leeds, 46, 169, 317; Leicester, 197, 287; Leith, 362; Levenshulme, 111; Liverpool, 317, 378; Llandaff, 210, 363; Llanelly, 240; London, 13, 111, 122, 137, 210, 240, 255; Loughton, 182; Lowestoft, 30; Lurgan, 61, 111; Malone, 318; Merthyr Tydfil, 46; Middlesbrough, 182; Mistley, 61; Montrose, 154; Mountain Ash, 210, 256; Mountsorrel, 270; Musselburgh, 154; Netherfield, 256; Newcastle, 46, 256; New Milton, Hants, 287; Newport, Fife, 154; Newport, Yorks., 170; Newark, 182, 330; Nottingham, 182, 210, 256, 378; Oldham, 137; Oxford, 210, 330; Perth, 154, 195; Piteochry, 256, 379; Portsmouth, 270; Puteostown, Ireland, 237; Reading, 270; Redditch, 318; Reigate, 330; Rotherham, 170; Romford, 77; Roundthorn, 270; Sedburgh, 154; Selly Oak, 256; Sheffield, 30, 46, 287, 302; Shrewsbury, 394; South Shields, 170; Southampton, 137; Southsea, 77; Southwark, 30; Stanningley, 170; Tomintoul, 379; Tottenham, 30; Wallasey, 318; Wadsworth, 226; Wellington, 46; Wells, Somerset, 363; Westbury, 270; Westminster, 13; Whitwell, 77; Wolverhampton, 13; Woodford, Essex, 195; Yarmouth, 270; Yeovil, 111  
Prudhoe, Dr. Syntax Inn, 239  
Public, The, and Architecture, 246  
Pump Room, Harrogate and its, 98  
Purley Schools, The J. R. Roberts' Wing, 65

#### QUEEN'S PICTURES, The, 315

RAILWAY: Great Central, 40, 65, 99; Stations, London's Great, 366  
Railways and Suburban London, 157  
Reflection, On: Our New Volume, 2; An Architectural Sculptor, 2; London Nuisances, 2; A National Tribute, 18; The R.I.B.A. Prize-Winners, 18; An Architect's Memorial, 18; The Leighton Bequest, 34; The Irresponsible Councillor Again, 34; A Useful Society, 34; School Board Economies, 34; The Popular Error, 50; Coming Memorials, 50; An Acquisition, 50; London Street Traffic, 82; The New Vauxhall Bridge, 82; Fog, Smoke and Electricity, 82; A Senseless Quarrel, 82; The Decoration of St. Paul's, 98; Harrogate and its Pump Room, 98; Secret Commissions, 98; "Trade Commissions," 98, 158; The New A.R.A., 114; Employers in Parliament, 114; The Foes of Peace, 114; Instructions to Architects, 126; A Contrast, 126; The

Beautifying of London, 126; The London Building Trades, 142; The Training of Artizans, 142; The Committee's Proposals, 142; The R.I.B.A. to the Fore, 158; The L.C.C. as Landlord, 158; A Surveyor's Qualifications, 174; Fires in Tall Buildings, 174; The Lane Horse Again, 174; New Views in London, 186; A Vain Appeal, 186; What to do with "Gift Horses," 186; Endowing Scientific Teaching, 214; "Serious and Wilful Misconduct," 214; The Future of Regent Street, 214; Contractors and the L.C.C., 230; Overcrowded London, 230; Another Protest, 230; "For this Relief, much Thanks," 244; An Architectural Exhibition, 244; Fire Geography, 244; A Contractor's Dilemma, 244; Birthday Honours, 258; A Needless Quarrel, 258; The Revival of Medievalism, 274; A Model Village, 274; The Need for Technical Instruction, 274; The Royal Academy Again, 304; Art as a Joke, 304; Municipal Enterprise and Its Foes, 304; The Seine, 304; An "ARCHITECTURAL REVIEW" Competition, 320; To Save Killarney, 320; A Point for Road Contractors, 320; School Board and Architect, 320; Why did They Laugh? 352; The Government and Art, 352; Labour Troubles in Denmark, 352; An Art Gallery for Newcastle, 366; What is a Building? 366; The New War Office Buildings, 382; An Opportunity that will be missed, 382; Latest Intelligence! 382; An Architectural Side Show, 382  
Refuse Destruction, 134  
Regent Street, The Future of, 214  
Registration of Architects, 164, 193, 209, 220, 223, 237, 254, 268, 281, 290, 296, 313, 325, 334, 358, 359, 375, 388  
Relief: Decorations in, 126; The Application of Colour to Interior Ornament in, 148  
Renaissance: Reflections on the English, 100, 121; Decorative, 253  
Responsibility, An Architect's, 290  
Restoration: A Coming, 213; as a Destructive Art, 354  
Restorations at Winchester Cathedral, 123  
"Return of the Native, The": Architecture in the Novel, 303  
Richmond, Sir W. B., on Ruskin, 28  
Richmond, Preservation of the Ha-Ha at, 300  
Riddlesworth Hall, Norfolk, 76  
Ripon and York, Round About, 291  
Riviera, Rock Villages of the, 129  
Road Contractors, A Point for, 320  
Roadway, A Movable, 93  
Rock Villages of the Riviera, 129  
Rodin the Great, 331  
Rome, Excavations at, 107, 181, 223  
Roofs and Coverings, Cheap, cxc, cxviii  
Ruskin, John: Eightieth Birthday of, 18; Sir W. B. Richmond on, 28; Portrait of, 44

SAINT: Alban's Cathedral, Monument for, 11; Peter's Hospital, 43; Paul's, The Decoration of, 98, 134, 152, 166, 173, 192, 209, 223, 230, 243, 244, 252, 331, 332, 376; Mary's, Moorfields, 134, 152; George's Church Spire, Liverpool, 153, 166; Michael Bassishaw Church, 167; Dunstan's Church, Fleet Street, 192, 223, 269, 390; Paul's Churchyard, 239, 252; Saviour's Church, Ealing, 294; Mary-le-Strand Church, 315; Mary Woolnoth Church, 332  
Sanitary: Institute, 78; Inspectors' Association, North-Western and Midland, 392  
School: Board, London, and its Architect, 12; Birmingham Art, 28; Board Economies, 34; A Building Trades', 108; Board of Birmingham and Architects, 134; Architecture, Board, 229; The Art, at Westminster, 289; Board and Architect, 320; of Arts and Crafts, The Central, 331, 356; Board, London, Buildings, 377; Manchester Technical, 378; Art, for Leek, 389  
Schools: Purley, 65; Planning and Construction of Board, 249, 266  
Science, New Royal College of, 146  
Scientific Teaching, Endowing, 214  
Scilly, Star Castle, 192  
Scotland Engineering Association, East of, 15  
"Scotsman's" Buildings in Edinburgh, 170  
Scottish Towers, Some Old, 177  
Sculptor, An Architectural, 2  
Sculpture in Relation to Architecture, 367, 387  
Segovia, 231, 259  
Seine, The, 304  
Sewage: Disposal, cx, cxviii; Tank and Filter, Nrc, cxviii  
Sewers, Ventilation of, clx, ccvi  
Sheepscare's Church, 166  
Sheffield Society of Architects and Surveyors, 139  
Shelter, A Central, for London's Exhibitions, 289  
Shelters for the Poor, 153  
Shoreditch, New Baths and Wash-houses for, 108  
Sieges-Allee, Berlin, 44

Silchester, Antiquities Discovered at, 253  
Sizergh Castle and Levens Hall, Old English Woodwork at, 280  
Sketching, Holiday, 351  
Slaughter-Houses, 12  
Smoke: Black, Nuisances, 2, 361; Fog and Electricity, 82  
Society Meetings: Architectural Association, 5, 78, 100, 162, 191, 221, 265; Royal Institute of British Architects, 8, 41, 73, 105, 148, 190, 224, 249, 283, 295, 310; Edinburgh Architectural Society, 14, 78, 111, 172, 211, 241; Leeds Association of Engineers, 14; Glasgow and West of Scotland Technical College Architectural Craftsman's Society, 14, 172; Torquay Natural History Society, 14; Devonport Camera Club, 14; East of Scotland Engineering Association, 15; Society of Arts, 15, 47, 139; Glasgow Architectural Association, 30, 31, 78, 139, 183, 211, 295; British Archaeological Society, 30; Society of Engineers, 31, 95, 172, 211; Birmingham Association of Mechanical Engineers, 31; Liverpool Engineering Society, 31; Yorkshire College Engineering Society, 47, 111; Plymouth Institution, 47; Architectural Association of Ireland, 47; Institution of Mechanical Engineers, 47, 393; Carpenters' Hall, 48; Manchester Municipal School of Art, 48; Glasgow Corporation Galleries, 61; Dundee Institute of Architecture, 61, 124; Highgate Literary Association, 78; Sanitary Institute, 78; Bristol Society of Architects, 78; Manchester District Institution of Gas Engineers, 79; Philosophical Society of Glasgow, 79, 111; Royal Geographical Society, 79; Architects' Benevolent Society, 83; Northern Architectural Association, 93; British Archaeological Association, 95, 195, 253, 300; Aberdeen Master Masons' Association, 95; Edinburgh Architectural Association, 112; Belfast Mechanical and Engineering Association, 112; South Staffordshire Institution of Iron and Steel Works Managers, 124; Civil and Mechanical Engineers' Society, 124; Institute of British Decorators, 136; Sheffield Society of Architects and Surveyors, 139; Midland Institute (Archæological Section), 139; Royal Institute of Public Health, 139; Bradford Historical Antiquarian Society, 183; Glasgow Institute of Architects, 195; Glasgow Archaeological Society, 195; People's Palace Architectural Society, 228; Society of Antiquaries, 228; Middlesex Archaeological Society, 241; Incorporated Association of Municipal and County Engineers, 241; Toynbee Hall Economic Club, 271; Royal Archaeological Institute of Great Britain and Ireland, 384; Newcastle Society of Antiquaries, 390; North-Western and Midland Sanitary Inspectors' Association, 392; Institution of Heating and Ventilating Engineers, 393  
Soil and Aspect in Relation to the Dwelling-house, 221, 238  
Soils, The Formation of, x, xviii, xxvi  
Somerset House, 44  
Southend Presbyterian Church, 299  
Spain: Its Picturesque Cities and Monasteries: VII.—Toledo, 51, 83; VIII.—Segovia, 231, 259; IX.—Burgos, 353, 370  
SPECIFICATION, 59  
Specifications, 191, 205, 224, 225  
Staffordshire, South, Institute of Iron and Steel Works Managers, 124  
Station, Charing Cross Railway, 234  
Star Castle, Scilly, 192  
Statue: Aberdeen's Byron, 27; of Alfred the Great, 93; The Gladstone, 93; Canning's, 312  
"Stradacona," Stamford Hill, 376  
Strains in Beams, x  
Strand: to Holborn Street, 12; Improvements, 28  
Stratford-on-Avon, Shakespeare's Church at, 166  
Street: Holborn to Strand, 12; Advertisements, 12; Traffic, London, 82; Station Indicator, An Artistic, 391  
Stockton Competition, A, 352  
Stones, Rival Building, 239  
Student, The Plant of the, 125  
Studio Bories, 285  
Suffolk Churches, Some Notes on, 383  
Surveying and Sanitary Notes, v, xiii, xxi, xxix, xxxvii, xlv, li, lix, lxxviii, lxxvii, lxxxv, cxiii, cxvi, cxxviii, cxxvii, cxlv, clii, clx, clxxviii, clxxvi, cxci, cxcix, ccix  
Surveyor: The Nimble, 43; and Architects, 107  
Surveyor's Qualifications, 174  
Swedish Country Houses, 245, 260

#### TALL BUILDINGS, Fires in, 174

Taste in Architecture, 27  
Teaching of Design, 81  
Technical Instruction, The Need for, 274  
Telegraphy, Wireless, 153  
Telephone Exchange, An Automatic, 123



Terra-Cotta: Mouldings, Methods used in Producing, 1, lviii; Balusters and Balustrading, The Manufacture of, lxxiv; Design for Gable Tympanum, clvii  
Thames: Embankment, 28, 285; The Suburban, 113  
Theatre: Covent Garden, 27, 209; The Olympic, 44  
Theatricals, Architectural Association, 180  
Toledo, 51, 83  
Tomb of Pelayo, 269  
Torquay Natural History Society, 14  
Tower: An Old Devonshire, 192; of London, Discoveries at the, 269  
Towers: Some Old Scottish, 177; Round, of Ireland, 217, 233, 250  
Town Hall, New, at Cape Town, 363  
Toynbee Hall Economic Club, 271  
Trade and Craft: Thornton-Pickard Manufacturing Company, xxvii; Blackman Ventilating Company, xxvii; McKenzie and Co., xxvii; Perfecta Seamless Tube Company, xxxvii; C. Wooliscroft and Son, Limited, li; Hendry and Pattison, Limited, li, 395; T. J. Gawthorp, lviii; James and Son, lviii; William Cassels, lviii; John Mathews and Co., 138; Holden and Brooke, 138; British Non-Flammable Wood Co., Limited, 138; Cousland and Mackay, cxxi; J. G. Faulds and Company, cxxi; Nicholls and Clarke, cxxi; B. Ward and Co., cxxxvii; Hollis Bros., and Co., cxxxvii; Frederick Walton and Co., Limited, cxxxvii; United Asbestos Co., Ltd., cxxxvii; P. E. Chappuis and Co., cxxxvii; F. W. Reynolds and Co., cxiv; E. Parker Milne, cliii; National Boiler and General Insurance Company, Limited, cliii; Robert Boyle, cliii; Anderson Patent Pipe Coupling Syndicate, clxi; H. Paul and Co.,

clxviii; Adams and Co., clxviii; Charteris and Longley, clxxvii; G. B. Kent and Sons, cxxi; George Couzens and Co., cxxi; Ewart and Son, cxxi; Oates and Green, Limited, 380; Key and Tindall, 380; Adams' Patent Sewage Lift Co., 380; Monorail Portable Railway Co., Limited, 395  
Trading, Municipal, 107  
Tramways: Electric, in New York, 76; Bills, cxii  
Tudor House, Bromley, 223, 239, 269  
Turner at the Guildhall, 166, 185

"UGLY, MAKING THE," 199  
Umbrella, An Architectural, 181

VAN DYCK Exhibition Antwerp, 152  
Vauxhall Bridge, 11, 76, 82, 107, 224  
Venice, A New Bridge at, 118  
Ventilating and Heating: clxvi, clxxiv; Engineers, Institution of, 393  
Ventilation of Sewers, clx, ccvi  
Victoria: and Albert Museum, South Kensington, 236; Station Improvements, cxiii  
Views and Reviews: The Architectural Review, 13, 268; What is Art? By Leo Tolstoy, 14; With a Palette in Eastern Palaces, 46; Timber, 58; The Dutch Gallery, 58; Why Chimneys Smoke, 93; The Goupil Gallery, 93, 165; The Dowdeswells' Gallery, 94, 180; The Motor Car Journal, 109; Messrs. Carfax's Galleries, 109; Rock Villages of the Riviera, 129; The Cathedral Church of Gloucester, 136; Dilapidations, 136; Exhibition of Some of Henry Holiday's Works, 136; Map of Metropolitan Railways, Tramways and Miscellaneous Improvements, 155; Lockwood's Builders' and Con-

tractors' Price Book, 155; Chemistry for Photographers, 155; The Practical Electrician's Pocket Book for 1899, 155; Renaissance Masters, The Art of Raphael, Michelangelo, Leonardo da Vinci, Titian, Correggio, and Botticelli, 155; Matriculation Directory, 165, 374; New English Art Club, 165; English Country Cottages, 165; Practical Dictionary of Electrical Engineering and Chemistry in German, English and Spanish, 165; The Universal Electrical Directory, 180; International Society of Sculptors, Painters and Gravers Exhibition, 227; The Nature of Gothic, 228; French Art and Architecture, 240; Decorative Designs of all Ages for all Purposes, 241; A Course of Instruction in Wood-Carving according to the Japanese Method, 241; The Cornish See and Cathedral, Historical and Architectural Notes, 255; A Handbook of Saw Mill and Wood-Convert-ing Machinery, 255; Durham Cathedral, 267; Haddon Hall, 267; Fine Art Society's Galleries, 267, 282; Royal Academy Pictures, 282; Selected Examples of Decorative Art from South Kensington Museum, 282; Water Supply and Sewage Disposal in Rural Districts, and Plumbers' Work in its Relation to Town and Country Houses, 282; The Water-Colour Indicator, 282; The London Water Supply, 296; The Growth of Great Cities in Area and Population, A Study in Municipal Statistics, 313; Alphabets Old and New, 313; The Renaissance in Italian Art, 313; Notes on Carpentry and Joinery, 374; Revue de l'Art Ancien et Moderne, 391  
Village: Ruin of a Picturesque, 243; A Model, 274  
Vistas, 33  
Volume, Our New, 2, 382

WALPOLE HOUSE, Chiswick Mall, Iron Gate in Front of, 253  
Waring and Gillow's New Premises in Paris, 253  
War Office, The New Buildings for the, 59, 127, 146, 239, 382  
Washhouses, Public Baths and, 8  
Water Gas, xxxv  
Watts's Gallery of Humble Heroes, 76, 181, 300  
Way about London, 141  
"Wayfarer, The": On the Austere and the Florid in Architecture, 18; in Paris, 258  
Webb, Mr. Aston, 114  
Weetwood Croft, near Leeds, 299  
Westminster: Improvements to the Thames Embankment at, 285; Art School at, 289  
Whitgift Hospital at Croydon, 300  
Wickham, The Village of, 243  
Winchester Cathedral, Restorations at, 123  
Windows: Stained Glass, 19; Designing, ii  
Wind Pressure, xviii  
Wingfield Manor Bay Window, 331  
"Wireless" Telegraphy, 153  
Wooden Beams, lxxv, 178  
Wood, The Carbonisation of, 172  
Woodwork, Old English, at Sizeworth Castle and Levens Hall, 280  
Workhouses, Cottage, 59  
Workmen's: Compensation Act, 59, 135, 214, 366, iv, xii, xxviii, xlv, lii, lxxviii, lxxxiii, cxxxvi, clx, clxxvii, clxxxvi, clxxxiii, cxiii, cc; Dwellings Bill, 108  
Wrought Iron Beams, cxxvi, 252

YORK: Minster, 28; and Ripon, Round About, 291  
Yorkshire: College Engineering Society, 47, 111; Rambling Sketches in, 219  
Young and Marten's Dinner, xxxv

## ILLUSTRATIONS.

ABBEY: St. Alban's, Model of Torso for High Altar Screen, 11; Melrose, Centre Plate, No. cxx; West Front of Bath, Centre Plate, No. cxxxix  
Aberdare Hall, Cardiff, 159, 160, 161, Centre Plate, No. cxxix  
Academy, Architecture at the Royal, 185, 187, 188, 213, 215, 216, Centre Plates, Nos. cxxxi, cxxxi  
Alcantara, Puente de, Toledo, 49  
Alcazar, Segovia, 257  
Amber, Louis, Centre Plate, No. cxxxiii  
Amiens Cathedral, Centre Plate, No. cxxx  
Apricale, A Street in, 130  
Architects, Royal Institute of British. Prize Competition Awards: St. Paul's Cathedral, North Porch (measured and drawn by Henry Ernest Kirby), 6, 7, Centre Plates, No. cxx; Melrose Abbey (drawn by J. Hervey Rutherford), Centre Plate, No. cxx; Gate-way of St. John's College, Cambridge (J. Hervey Rutherford), Centre Plate, No. cxx; Design for a Royal Mausoleum (by Alex. McInnes Gardner), 23, Centre Plates, No. cxx; Beverley Minster (drawn by J. Hervey Rutherford), Centre Plates, No. cxx  
Architecture, Sculpture in Relation to, 365, 367, 369, 387  
Arco: de S. Esteban, Burgos, 351; de Santa Maria, Burgos, 370  
Ardmore, Round Tower at, 234  
Art, Permanent Gallery of Decorative, 273, 275, 276, 277  
Ashbee, C. B., 324  
Audley House, Salisbury, 377  
Aydon, T. W., 347  
Aylsham Parish Church, South Porch, 33  
Ayr: St. Andrew's Church, 199; Working Men's Unionist Club, 201; Pergola in Carrick House Gardens, 203, Centre Plate, No. cxxii; Red House, 203, Centre Plate, No. cxxii

BACHMANN, G. A., 327, 328, Centre Plates, No. cxxx  
Balusters, Terra-Cotta, lxxiv  
Baker, T. H., 394  
Bank, New Savings, at West Kensington, 314

Banqueting House, Whitehall, 141  
Barton Court Hotel, New Milton, Herts, 287  
Bath Abbey, West Front of, Centre Plate, No. cxxxix  
Baths and Wash-houses, Shoreditch Public, Centre Plate, No. cxxv  
Bay: Window at Wingfield Manor, 331; of Cleristery, Woolpit Church, Suffolk, 386  
Beams: Strains in, x; Wrought Iron, cxxvi; Cast Iron, cxxxv  
Bedford, Francis W., Centre Plate, No. cxxxvii  
Bedford, F. W., and J. D. Kitson, 187, Centre Plates, No. cxxxi  
Belcher, John, Centre Plate, No. cxxxi  
Bell, Charles, 317  
Bell-Pushes, Electric, 275, 277  
Bell, E. Anning, 322  
Bench Ends: at Woolpit Church, 383, 385; at Elmswell Church, 384, 385  
Bevan, W., Centre Plates, No. cxxx  
Biddenham, Entrance to "King's Corner" at, 188  
Birstall Church, 219  
Bordighera, Views in, 131  
Bracket, Italian Marble, Centre Plate, No. cxxxvii  
Bradford: Central Fire Brigade Station, 55; Cartwright Memorial Hall, Centre Plates, Nos. cxxiii, cxxiv  
Braham, near Perth, 187, Centre Plates, No. cxxxi  
Brewill and Bailly, Centre Plate, No. cxxv  
Bridge: Design, by Ernest George, 187, 215; Kew, Centre Plate, No. cxxxiii  
Bristol: The Crown Inn, Staple Hill, near, 13; Vanishing, Centre Plates, No. cxxix  
Brown, James, 293, 295  
Brydon, J. M., 128, Centre Plate, No. cxxxvii  
Brympton House, Somersetshire, 177  
"BUILDERS' JOURNAL" Competition Designs for a Country House: First Premiated Design (by Herbert L. North), 321, Centre Plates, No. cxxx; Second Premiated Design (by Harry Percy Sharpe), 337, 338, Centre Plates, No. cxxxii; Third Premiated Design (by William Mitchell), Centre Plates, No. cxxx; Highly Commended Designs (by J. W. Rhodes, W. L. Dowton and Alick Horsnell, H. T. Rees

and H. M. Macpherson, and Charles M. Childs, 357, 389, Centre Plates, Nos. cxxxii, cxxxiii, cxxxiv  
Builth Wells, Wales, Baptist Church at, 316  
Burke Memorial, Glasnevin Cemetery, Dublin, 347  
Burgos: Ornament from the Tomb of Pelayo in Cathedral, 269; Arco de S. Esteban, 351; Puerta de S. Francisco, 353; S. Nicholas and Plaza in Front of the Cathedral, 354; Cloisters in Cathedral, 354; Fountain, 355; Casa Miranda, Centre Plate, No. cxxxii; Puerta de la Pelligeria, Centre Plate, No. cxxxii; Reredos in the Church of S. Nicholas, Centre Plate, No. cxxxii; Arco de Santa Maria, 370; Monument to Don Juan and Isabella of Portugal, La Cartuja, 371; Archway, 372  
Burnt Island, An Old Scottish Tower at, Centre Plate, No. cxxx  
Butterworth and Duncan, 86, 87, 102, 103, 104, 120

CAEN, Le Vieux St. Etienne, 117  
Calle de la Plata, Toledo, 83  
Calveley: Village, Wrought Iron Sign in, 218; Church, 218  
Cambridge: Main Staircase to Guildhall, Centre Plate, No. cxxxi; St. John's College, Centre Plate, No. cxxix  
Carrick House Gardens, Ayr, Pergola in, 203, Centre Plate, No. cxxii  
Capitals, Designs by Inigo Jones for, Centre Plates, No. cxxvi  
Cardiff: Aberdare Hall, 159, 160, 161, Centre Plate, No. cxxix; New Law Courts, A Design for, Centre Plate, No. cxxix  
Cartwright Memorial Hall, Bradford, Centre Plates, Nos. cxxiii, cxxiv  
Casa Miranda, Burgos, Centre Plate, No. cxxxii  
Castle: Star, St. Mary's Island, Scilly, 192; Sizeworth: Panelling in Inlaid Room, Centre Plate, No. cxxxvii  
Cathedral: Elgin, 1, 2, 3, 4, 5, 17, 19, 21, Centre Plate, No. cxx; St. Paul's, North Porch, 6, 7, Centre Plates, No. cxx; Segovia, 231, Centre Plate, No. cxxxvi; Lisieux, 278, 280; Burgos, 269, 354, Centre Plate, No. cxxx; Amiens,

Centre Plate, No. cxxx; St. Paul's, Sir Christopher Wren's Scheme of Decoration, Centre Plate, No. cxxxv  
Cavenham Hall, Essex, 185  
Cawston Church, Norfolk, 335  
Chapel, Baptist, Sutton, Surrey, 134  
Charwelton, 99  
Chatterton, Frederick, 117, 377  
Chelsea, Scheme of Decoration for Lady Chapel, Holy Trinity Church, Centre Plate, No. cxxii  
Chest, Old Oak, in South Kensington Museum, 376  
Childs, Charles M., 389, Centre Plate, No. cxxxiv  
Chimney-piece in "Pietra Serena," Carved Frieze of a, Centre Plate, No. cxxxvii  
Church: Aylsham Parish, South Porch, 33; St. Peter's, Leiden, 35; of Santiago, Toledo, 53; Preston, Haddingtonshire, 135; St. Andrew's, Ayr, 199; Calveley, 218; Twelfth Century, Segovia, 232; Skelton, 292; Thirsk, 294; Baptist, at Builth Wells, Wales, 316; St. James's, Grimsby, 327; Scartho, 328; Cawston, Norfolk, 335; The, Schönfelds, 341; Lavenham, Suffolk, 381, 383, Centre Plate, No. cxxxiv; Woolpit, Suffolk, 383, 385, 386; Elmswell, Suffolk, 384, 385; Cockfield, Suffolk, 334, 386, Centre Plate, No. cxxxiv; Christ, Clacton-on-Sea, Proposed Extension to, 394; The Avenue Congregational, Southampton, Centre Plate, No. cxxvii; Holy Trinity, Chelsea, Scheme of Decoration for Lady Chapel, Centre Plate, No. cxxii; St. Martin, Segovia, Centre Plate, No. cxxxvi; Design for Southend Presbyterian, Centre Plate, No. cxxxviii; of St. Mary-le-Strand, London, Centre Plate, No. cxxxix  
Clacton-on-Sea: Holiday Home for Children, 317; Proposed Extension to Christ Church, 394  
Clarke, W. Lee, Centre Plate, No. cxxix  
Clepe Parish Church, 323, Centre Plates, No. cxxx  
Clock Tower at Lewisham, Design for a Jubilee, Centre Plate, No. cxxxviii  
Club, Ayr Working Men's Unionist, 201  
Cockfield Church, Suffolk, 384, 386, Centre Plate, No. cxxxiv  
Cole, J. Kingwell, and Kenneth Wood, 65



Coleshill House, Berkahire, 115  
College, St. John's, Cambridge, Centre Plate, No. ccix  
Corbel from Choir, York Minster, 295  
Corpus Christi, Segovia, West End of, Centre Plate, No. ccxxvi  
Competition Design: R.I.B.A. Prize Awards, 6, 7, 23, Centre Plates, Nos. ccix, ccx, ccxi; Eastleigh Municipal Offices, Centre Plates, No. ccxii; Cardiff New Law Courts, Centre Plate, No. ccxiv; House in a Hilly District, Centre Plate, No. ccxvi; "BUILDERS' JOURNAL": First Premiated Design, 321, Centre Plates, No. ccxxx; Second Premiated Design, 337, 338, Centre Plates, No. ccxxxi; Third Premiated Design, Centre Plates, No. ccxxxi; Highly Commended Designs, 357, 359, Centre Plates, Nos. ccxxxi, ccxxxi, ccxxxi  
Cottage Homes at Middlewood, near Rochdale, 86, 87, 102, 103, 104, 120  
Coverings, Cheap Roofs and, ccx, ccxviii  
Croisy, 387  
Cropper, Edward, and Frederick Taylor, Centre Plate, No. ccxvii  
Crouch and Butler, 216

**DADO PATTERN, 276**  
Dancaster and Company, 287  
Delft: A Corner in, Centre Plate, No. ccxxiii; Gables, Centre Plate, No. ccxxiii; The Nieuwe Kerke, Centre Plate, No. ccxxii; A Corner in, Centre Plate, No. ccxxii  
Della Robbia, Luca, 369  
Devenish, Round Tower at, 235  
Dolby, Edwin, Centre Plate, No. ccxx  
Door-Plate, Copper, 277  
Door-Plates and Handles, Metal, for a Yacht, 273  
Doorway: Renaissance, Segovia, 232; to School for the Blind, York, 295; at Lavenham Church, Suffolk, 381, Centre Plate, No. ccxxv  
Dordrecht: The Groote Kerke, 37; A Street in, 39; The Porte, 67; A Wharf, 67; On the Canal, Centre Plates, Nos. ccxi, ccxii; A Street in, Centre Plate, No. ccxiii  
Dossor, John M., 329  
Dovecot, 9  
Downton, W. L., and Alick Horsnell, Centre Plate, No. ccxxxi  
Drains and Fittings, Testing, clxxxii  
Dublin, The Burke Memorial, Glasnevin Cemetery, 347  
Dunchurch, 99

**EASTLEIGH MUNICIPAL OFFICES, Centre Plates, No. ccxii**  
Eel Pie Island, The Island Hotel, 113  
Electric: Light Reflectors, 275; Bell-pushes, 275, 277  
Elgin Cathedral, 1, 2, 3, 4, 5, 17, 19, 21, Centre Plate, No. ccx  
Ellis, George, 9  
Elmswell Church, Suffolk, 384, 385  
El Parral, Segovia, 259, Centre Plate, No. ccxxvi  
Everard and Pick, Centre Plate, No. ccxvii

**FACTORIES, Foundations for, 57, 92, 119**  
Fawcett Fireproof Construction, cxliii  
Fildore, Sydney, 376  
Fire Brigade Station, Bradford Central, 55  
Fireproof Construction, Fawcett, cxliii  
Fire-resisting Slabs, Petrucci, cxi  
Fletcher, Banister, and Banister F. Fletcher, 343  
Fletcher, the late Professor Banister, 344  
Fontaine Saint Michael at Paris, 365  
Foundations for Factories, 57, 92, 119  
Fountain at Burgos, 355  
Fountain's Abbey, Tower at, 294  
Freeman, Albert C., cxviii  
French, G. Scaife, 349  
Frieze, Carved, of a Chimney-piece in "Pietra Serena," Centre Plate, No. ccxxvii

**GABLE: In Leiden, 38; Hoorn, 68; by C. F. A. Voysey, 216; Tympanum, A Terra Cotta, clviii**  
Gables, Delft, Centre Plate, No. ccxiii  
Gardner, Alex. McInnes, 23, Centre Plates, No. ccx  
Garth, Segovia, Entrance to Cloister, Centre Plate, No. ccxxvi  
Gate, Iron, in Front of Walpole House, Chiswick Mall, 253  
George, Ernest, 187, 215  
Glass Bricks, A House Built with "Falconier," clxviii  
Goodramgate, York, 291  
Goosey, G. T., 315  
Government Offices, The New, Westminster, 127, 128, Centre Plate, No. ccxvii  
Granite Walls, Rain Drift Through Solid, 71  
Griggs, F. L., 291  
Grimsby, St. James' Church, 327  
Guildhall, 323

**HAARLEM, Centre Plate, No. ccxi**  
Half-timber House in Course of Construction, 286  
Hall at Pitlochry, Design for Public, 379  
Handles and Door-Plates, Metal, for a Yacht, 273  
Hanover Street School, Islington, 229  
Harper, C. G., 97, 99, 113, 151, 157, 192, 243, 319  
Henderson, Harold E., 219  
Hick, E. M., Centre Plate, No. ccxxix  
Hinton House, Northamptonshire, 202  
Holland, Sketches through, 35-39, 67-69, Centre Plates, Nos. ccxi, ccxii  
Holy Trinity Church, Chelsea, Scheme of Decoration for Lady Chapel, Centre Plate, No. ccxxii  
Home, Holiday, for Children, Clacton-on-Sea, 317  
Hoorn, A Gable, 68  
Hospital: London, Extension of Nurses' Home, 256; Cottage, at Wells, Somerset, 362  
Hotel: The Island, Eel Pie Island, 113; Barton Court, New Milton, Herts., 287  
House: Design for a Country, by C. F. A. Voysey, 213; Half-Timber, in course of Construction, 286; Old, in the High Street, Oxford, 315; "BUILDERS' JOURNAL" Competition Designs for a Country, 321, 337, 338, 389, Centre Plates, Nos. ccxxx, ccxxxi, ccxxii, ccxxiii, ccxxiv; in a Hilly District, Design for a, Centre Plate, No. ccxvi; A Country, Centre Plate, No. ccxii  
Houses, Swedish Country, 245-248, 261-263  
Hull, Prospect Inn, Prospect Street, 329

**INN: The Crown, Staple Hill, near Bristol, 13; Prospect Street, Hull, 329**  
Iron, Wrought, in York Minster, 296  
Islington, Hanover Street Schools, 229

**JACKSON, F. HAMILTON, 49, 51, 53, 81, 83, 84, 231, 233, 351, 353, 355, 372, Centre Plates, No. ccxvi**  
Jackson, T. G., Centre Plate, No. ccxiv  
Jennett, A. R., Centre Plates, No. ccxxiii  
Jones, Inigo, 115, 141, 143, 144, 145, 173, 175, 176, 177, Centre Plates, No. ccxvi  
**KENSINGTON: Palace, 151; New Savings Bank at West, 314**  
Kerke: The Groote, Dordrecht, 37; The Groote, Haarlem, Centre Plate, No. ccxi; The Nieuwe, Delft, Centre Plate, No. ccxiii  
Kew Bridge, Centre Plate, No. ccxxiii  
Kiddall Hall, Yorkshire, 219  
King's College School, Wimbledon, Additions to, 348  
Kirby, Henry Ernest, 6, 7, Centre Plates, No. ccix

**LA CARTUJA, Burgos, Monument at, 371**  
Lake House, Repaired Bay Window, Centre Plate, No. ccxv  
Lamb, E. Beckitt, 289, 331  
Lavenham Church, Suffolk, 381, 383, Centre Plate, No. ccxxiv  
Law Courts, Cardiff, Centre Plate, No. ccxiv  
Leamington Free Library and Technical School, 343  
Leather Bottle, The Old, Merton, 319  
Leicester Corporation Waterworks, Centre Plate, No. ccxvii  
Leiden: St. Peter's Church, 35; Gable in, 38; a Corner in, Centre Plate, No. ccxi  
Le Mans, From the base of a statue erected in memory of General Chanzy, 387  
Levens Hall, Panelling in Entrance Hall, Centre Plate, No. ccxxvii  
Lewisham, Design for a Jubilee Clock Tower at, Centre Plate, No. ccxxviii  
Library: A Design by F. Selby, 187; Free, and Technical School, Leamington, 343  
Lindsey, Some Churches in North-Eastern, 327, 328, Centre Plates, No. ccxxx  
Lisieux: Old House at, 279; House, Rue Cordorset, 279; Cathedral, 279, 280  
Llandoger Tavern, Old King Street, Bristol, Centre Plate, No. ccxix  
London Hospital, Extension of Nurses' Home, 256

**MACQUOID, THOMAS R., 269**  
Madonna and Child, by Luca della Robbia, 369  
Maidman, Edward C. H., 379  
Maldon, Sketches in and around, 303, 305, 306, 307, 308  
Mallows, C. E., 185, 187, 188, 213, 215, 216, Centre Plate, No. ccxii  
Mallows, C. E., and Grocock, 188  
Mansford, F. H., 167  
Masque, The Art Workers', 322, 323, 324  
Mason, William H., 135  
Mausoleum, Design for a Royal, 23, Centre Plates, No. ccx  
Mawson and Hudson, 55

Melrose Abbey, Centre Plate, No. ccix  
Memorial, The Burke, Dublin, 347  
Merton, The Old Leather Bottle, 319  
Middleton, G. A. T., 278, 279, 280  
Middlewood, near Rochdale, Cottage Homes at, 86, 87, 102, 103, 104, 120  
Milne, E. P., Centre Plates, No. ccxxvii  
Minster, Ripon, 292, 293  
Mitchell, G. S., ccx, ccxxiii  
Mitchell, John G., Centre Plates, No. ccxii  
Mitchell, William, Centre Plates, No. ccxxxi  
Monument: to Don Juan and Isabella of Portugal, La Cartuja, Burgos, 371; in Chancel, Cockfield Church, Suffolk, 386, Centre Plate, No. ccxxiv  
Morgan, George, and Son, 316  
Morris, James A., 199, 201, 202, 203, Centre Plates, No. ccxii  
Morton, J. H., 170  
Motte, A Clarendon, 239  
Mouldings, Terra-Cotta, l, lviii  
Murray, J. C. T., Centre Plate, No. ccxxviii  
Museum, Victoria and Albert, 236, Centre Plate, No. ccxxiv  
Musselburgh, An Old Scottish Tower at, Centre Plate, No. ccxx

**NEW MILTON, Herts, Additions to Barton Court Hotel, 287**  
North, Herbert L., 321, Centre Plates, No. ccxxx

**OAKWELL HALL, YORKSHIRE, 218**  
Offices, Eastleigh Municipal, Centre Plates, No. ccxii  
Oxford: Old House in the High Street, 315; The Master of Balliol's House, Centre Plate, No. cciv

**PANELLING at Levens Hall and Sizergh Castle, Centre Plates, No. ccxxvii**  
Panels, Carved Oak, 239, 277  
Parish, James, 218  
Paris, La Fontaine Saint Michael, 365  
Parliament Street, Westminster, The Old End, 127  
Patio, Segovia, Centre Plate, No. ccxxvi  
Paul, Walter S., and James, 13  
Pelayo, Ornament from the Tomb of, at Burgos Cathedral, 269  
Pemberton, Hilda M., 275, 276  
Pennell, J., 323  
Pergola in Carrick House Gardens, Ayr, 203, Centre Plate, No. ccxii  
Perinaldo, A Street in, 129  
Petrucci Fire-resisting Slabs, cxi  
Phillips, Joseph, 277  
Picture Gallery, Whitechapel, Centre Plate, No. ccxxii  
Pithay, Bristol, Centre Plates, No. ccxix  
Pitlochry, N.B., Design for Public Hall, 379  
Plans: Elgin Cathedral, 3; St. Paul's Cathedral, North Porch, 6; The Crown Inn, Staple Hill, near Bristol, 13; Design for a Royal Mausoleum, Centre Plates, No. ccx; Bradford Central Fire Brigade Station, 55; Eastleigh Municipal Offices, Centre Plate, No. ccxii; Cottage Homes at Middlewood, near Rochdale, 86, 87, 102, 103, 104; New Government Offices, Westminster, 128; Hinton House, Northamptonshire, 202; Pergola, Carrick House Gardens, Ayr, Centre Plate, No. ccxxii; Bradford Cartwright Memorial Hall, Centre Plates, Nos. ccxxiii, ccxxiv; London Hospital, Extension of Nurses' Home, 256; Swedish Country Houses, 262; Westwood Croft, near Leeds, Centre Plate, No. ccxxviii; The Church of St. Mary-le-Strand, London, Centre Plate, No. ccxxix; Sidlow Bridge Schools, near Reigate, 330; "BUILDERS' JOURNAL" Competition Designs for a Country House, Centre Plates, Nos. ccxxx, ccxxxi, ccxxii, ccxxiii, ccxxiv; Leamington Free Library and Technical School, 343; Design for Public Hall, Pitlochry, N.B., 379; Woolpit Church, Suffolk, 383; Lavenham Church, Suffolk, 383; Cockfield Church, Suffolk, 384  
Plant Study, Centre Plate, No. ccxv  
Plates, Centre: R.I.B.A. Silver Medal for Measured Drawings of the North Porch of St. Paul's Cathedral by Henry Ernest Kirby, No. ccix; R.I.B.A. Pugin Studentship Drawings of Melrose Abbey South Transept, Gateway of St. John's College (by J. Hervey Rutherford), No. ccix; Elgin Cathedral, No. ccx; R.I.B.A. Tite Medal Design for a Royal Mausoleum (by Alex. McInnes Gardner), No. ccx; A.A. Travelling Studentship Sketches in Holland (by H. F. Waring), Nos. ccxi, ccxii; R.I.B.A. Pugin Studentship Drawings of Beverley Minster (by J. Hervey Rutherford), No. ccxi; Eastleigh Municipal Offices (Design by John G. Mitchell), No. ccxi; The Tomb of Cardinal Mendoza, the Gate of Lions, and the Puerta de S. Caterina in Cloister, in the Cathedral, Toledo, No. ccxi; The Master of Balliol's

House, Oxford (T. G. Jackson, architect), No. ccxiv; A Design for the New Law Courts, Cardiff (Brewell and Baily, architects), No. ccxiv; Patio, Hospital of Santa Cruz, Toledo, No. ccxiv; Door of the Palace of Pedro the Cruel, Toledo, No. ccxiv; Tower of S. Torro, Toledo, No. ccxiv; Hospital of Santa Cruz, Toledo, No. ccxiv; Plant Study (drawn by John Sedding), No. ccxiv; Lake House, Bay Window, No. ccxiv; Shoreditch Public Baths and Washhouses (Spalding and Cross, and Henry T. Hare, joint architects), No. ccxiv; Design for Capitals (by Inigo Jones), No. ccxiv; Design for a House in a Hilly District (George Witteft, architect), No. ccxiv; The Avenue Congregational Church, Southampton (Edward Cropper and Frederick Taylor, architects), No. ccxiv; Leicester Corporation Waterworks (Everard and Pick, architects), No. ccxiv; The New Government Offices, Westminster (J. M. Brydon, architect), No. ccxiv; The New War Office (William Young, architect), No. ccxiv; The Royal College of Science, South Kensington (Aston Webb, architect), No. ccxiv; Aberdare Hall, Cardiff (Herbert W. Wills, architect), No. ccxiv; Vanishing Bristol (drawn by W. Lee Clarke), No. ccxiv; Old Scottish Towers at Musselburgh, Queensferry and Burnt Island (drawn by W. Bevan), No. ccxiv; Amiens Cathedral (drawn by Edwin Dolby), No. ccxiv; Brahan, near Perth (Francis W. Bedford, architect), No. ccxiv; A Country House (E. F. Reynolds, architect), No. ccxiv; View of Main Staircase, The Guildhall, Cambridge (John Belcher, architect), No. ccxiv; Whitechapel Picture Gallery (C. Harrison Townsend, architect), No. ccxiv; The Lady Chapel, Holy Trinity Church, Chelsea, Scheme of Decoration (by H. Wilson, C. Whall and Louis Davis), No. ccxiv; Pergola in Carrick House Gardens, Ayr (James A. Morris, architect), ccxiv; Red House, Ayr (James A. Morris, architect), No. ccxiv; Bradford Cartwright Memorial Hall (designs by John W. Simpson and J. Milner Allen, A. E. Jennett, and W. A. Pite and R. S. Balfour), Nos. ccxiv, ccxiv; The Victoria and Albert Museum (Aston Webb, architect), No. ccxiv; Sir Christopher Wren's Scheme of Decoration for St. Paul's Cathedral, No. ccxiv; Entrance to Cloister, Garth, Segovia, No. ccxiv; S. Martin, Segovia, No. ccxiv; West End of Corpus Christi, Segovia, No. ccxiv; Cathedral, Cloister Walk, Segovia, No. ccxiv; Cloister, El Parral, Segovia (drawn by F. Hamilton Jackson), No. ccxiv; Sizergh Castle, Panelling in Inlaid Room (drawn by E. P. Milne), No. ccxiv; Levens Hall, Panelling in Entrance Hall (drawn by E. P. Milne), No. ccxiv; Italian Marble Bracket, No. ccxiv; Carved Frieze of a Chimney-piece in "Pietra Serena" (attributed to Antonio Rossellino), No. ccxiv; Design for a Jubilee Clock Tower at Lewisham (Henry Rose, architect), No. ccxiv; Design for Southend Presbyterian Church (J. C. T. Murray, architect), No. ccxiv; Westwood Croft, near Leeds (Francis W. Bedford, architect), No. ccxiv; The Church of St. Mary-le-Strand, London (measured and drawn by J. G. Wiles), No. ccxiv; West Front, Bath Abbey (drawn by E. M. Hick), No. ccxiv; Clee Parish Church, Lincolnshire (drawn by G. A. Bachmann), No. ccxiv; "BUILDERS' JOURNAL" Competition, First Premiated Design (by Herbert L. North), No. ccxiv; Second Premiated Design (by Harry Percy Sharpe), No. ccxiv; Third Premiated Design (by William Mitchell), No. ccxiv; Highly Commended Designs (by J. W. Rhodes, W. L. Downton and Alick Horsnell, H. T. Rees and H. M. Macpherson, and Charles M. Childs), Nos. ccxiv, ccxiv, ccxiv; Additions to "Stradacona," Stamford Hill (Lewis Ambler, architect), No. ccxiv; Kew Bridge (drawn by H. F. Waring), No. ccxiv; West Doorway, Lavenham Church, Suffolk (drawn by Philip J. Turner), No. ccxiv; Monument in Chancel, Cockfield Church, Suffolk (drawn by Philip J. Turner), No. ccxiv  
Plumbe, Rowland, 256  
Poppyheads at Elmswell and Woolpit Churches, Suffolk, 384, 385  
Prentice, A. N., 185  
Preston Church, Haddingtonshire, 135  
Pulpit, Ripon Minster, 293  
Purley Schools, The J. E. Robert's Wing, 65

**QUANTON, 97**  
Queensferry, An Old Scottish Tower at, Centre Plate, No. ccxx  
Quennell, C. B., Centre Plate, No. ccxiv



**RALSTON, JOHN**, 292, 293, 294, 295, 296  
Red House, Ayr, 203, Centre Plate, No. ccxxii  
**Rees, H. T., and H. M. Macpherson**, Centre Plate, No. ccxxxiv  
Reflectors, Electric Light, 275  
**Reid, William**, 1, lviii, lxxiv, clviii  
**Reynolds, E. F.**, Centre Plate, No. ccxxi  
**Rhodes, H. Sidney**, 219  
**Rhodes, John W.**, 357, Centre Plates, No. ccxxxii  
**Ripon and York**, Round about, 289, 291, 292, 293, 294, 295, 296  
**Riviera, Rock Villages of the**, 129  
**Robson, E. R.**, 229  
Roof to Nave, Cawston Church, Norfolk, 335  
Roofs and Coverings, Cheap, cxc, ccviii  
**Rose, Henry**, Centre Plate, No. ccxxxviii  
**Rossellino, Antonio**, Centre Plate, No. ccxxxvii  
**Royal United Service Institution in Parliament Street, Westminster**, 125  
**Rutherford, J. Hervey**, 335, Centre Plates, Nos. ccix, ccxi  
**Ryan-Tenison, Arthur H., and Edward Thornton**, 330

**SAINT**: Alban's Abbey, Model of Torso for High Altar Screen, 11; Paul's Cathedral, North Porch, 6, 7, Centre Plates, No. ccix, Inigo Jones's Design for the West Front of Old, 176, Sir Christopher Wren's Scheme of Decoration for, Centre Plate, No. ccxxv; John's College, Cambridge, Gateway of, Centre Plate, No. ccix; Peter's Church, Leiden, 35; Etienne, Le Vieux, Caen, 117; Michael, Bassishaw, 167; Andrew's Church, Ayr, 199; Mary Magdalen's Chapel, Ripon, 289; James' Church, Grimsby, 327; Mary-le-Strand Church, London, Centre Plates, No. ccxxxix  
**Salisbury, Audley House**, 377  
**Sant Andres, Puerta de, Segovia**, 233  
**S. : Martin, Segovia**, Centre Plate, No. ccxxvi; **Esteban, Segovia**, 200; **Nicholas, Burgos**, 354, Centre Plate, No. ccxxxii; **Esteban, Arco de, Burgos**, 351  
**Santiago, Church of, Toledo**, 53  
**Savings Bank, New, at West Kensington**, 314

**Saxon Village, In a**, 340, 341  
**Scartho Church, Lincs.**, 328  
**Schoenfeld, Saxony, The Church**, 341  
**School: A Design by Crouch and Butler**, 216; for the Blind, York, Entrance Doorway, 295; Technical, and Free Library, Leamington, 343; Additions to King's College, Wimbledon, 348  
**Schools: Purley, The J. R. Robert's Wing**, 65; **Hanover Street, Islington**, 229; **Sidlow Bridge, near Reigate**, 330  
**Science, The Royal College of, South Kensington**, 147, Centre Plate, No. ccviii  
**Scilly, Star Castle, St. Mary's Island**, 192  
**Scott, Anthony**, 234, 235  
**Scott, William**, 129, 130, 131  
**Screen, High Altar, St. Alban's Abbey, Model of Torso for**, 11  
**Sculpture in Relation to Architecture**, 365, 367, 369, 387  
**Seborga**, 129  
**Sedding, John**, ccxv  
**Sedilia, Ripon Minster**, 293  
**Segovia: Cathedral from Alcázar**, 231; **City Boundary**, 232; **Twelfth Century Church**, 232; **Renaissance Doorway**, 232; **Puerta de Sant Andres**, 233; **Ancient Church and Alcázar from the Eresma**, 257; **Facade of El Parral**, 259; **S. Esteban**, 260; **Entrance to Cloister, Garth, Centre Plate**, No. ccxxvi; **S. Martin, from N.-W., Centre Plate**, No. ccxxvi; **West End of Corpus Christi, Centre Plate**, No. ccxxvi; **Cathedral, Cloister Walk, Centre Plate**, No. ccxxvi; **Cloister, El Parral, Centre Plate**, No. ccxxvi; **Patio, Centre Plate**, No. ccxxvi  
**Selby, F.**, 187  
**Sewage Tank and Filter**, ccxvii  
**Sharpe, Harry Percy**, 337, 338, Centre Plates, No. ccxxxi  
**Shelter, Cabmen's, in Northumberland Avenue, S.W.**, 345  
**Shoreditch Public Baths and Wash-houses, Centre Plates**, No. ccxv  
**Sidlow Bridge Schools, near Reigate**, 330  
**Simpson, Edgar**, 273, 275, 277  
**Simpson, John W., and J. Milner Allen**, Centre Plates, No. ccxxxiii  
**Sizergh Castle, Panelling in Inlaid Room, Centre Plate**, No. ccxxxvii  
**Skelton Church**, 292  
**Slabs, Petrura Fire-Resisting**, ccvi  
**Soldano, A Street in**, 131  
**Sol, Puerto del, Toledo**, 52

**Southampton, The Avenue Congregational Church, Centre Plate**, No. ccxvii  
**Southend Presbyterian Church, Design for, Centre Plate**, No. ccxxxviii  
**South Shields, Union Offices**, 170  
**Spain, Picturesque Cities and Monasteries of: VII.—Toledo**, 49, 51, 52, 53, 81, 83, 84, Centre Plates, Nos. ccxii, ccxiv; **VIII.—Segovia**, 231, 232, 233, 257, 259, 260; **IX.—Burgos**, 351, 353-355, 370-372, Centre Plates, No. ccxxxii  
**Spalding and Cross, and Henry T. Hare, Centre Plates**, No. ccxv  
**Stamford Hill, Additions to "Stradacona," Centre Plate**, No. ccxxxiii  
**Staple Hill, near Bristol, The Crown Inn at**, 13  
**Star Castle, St. Mary's Island, Scilly**, 192  
**Station, Worcester Park Railway**, 157  
**Statue erected in Memory of General Chanzy at Le Mans**, 387  
**"Stradacona," Stamford Hill, Additions to, Centre Plate**, No. ccxxxiii  
**Suffolk Churches, Notes on Some: Woolpit, Elmswell, Lavenham, and Cockfield**, 381, 383-386, Centre Plates, No. ccxxxiv  
**Sulgrave**, 99  
**Sutton, Surrey, Baptist Chapel**, 134  
**Swedish Country Houses**, 245-248, 261-263

**TANNER, Henry**, 314  
**Terra-Cotta: Mouldings**, 1, lviii; **Balusters**, lxxiv; **Gable Tympanum**, clviii  
**Thackeray's House, Young Street, Kensington**, 151  
**Thirsk Church**, 294  
**Tiles, Designs for**, 275, 276  
**Toledo: Puente de Alcántara**, 49; **Patio of House**, 51; **Puerto del Sol**, 52; **Church of Santiago**, 53; **The Cathedral, Centre Plates**, No. ccxii; **Near the Station**, 81; **Calle de la Plata**, 83; **Tower of S. Torré, Centre Plate**, No. ccxiv; **Hospital of Santa Cruz, Centre Plate**, No. ccxiv; **Door of the Palace of Pedro the Cruel, Centre Plate**, No. ccxiv  
**Tomb: of Pelayo at Burgos Cathedral, Ornament from the**, 269; **of Walter de Gray in York Cathedral**, 295  
**Tomlinson, Charles W., x, xviii**  
**Towers, Irish Round**, 234, 235, 250  
**Towers, Old Scottish, at Musselburgh, Queensferry and Burnt Island, Centre Plates**, No. ccxx

**Townsend, C. Harrison, Centre Plate**, No. ccxxii  
**Turner, J. P.**, 381, 383-386, Centre Plates, No. ccxxxiv

**UNION OFFICES, South Shields**, 170

**VALLEBONA, A Street in**, 130  
**Victoria and Albert Museum**, 236, Centre Plate, No. ccxxxiv  
**Villas, Semi-detached, at Whitby**, 349  
**Voysey, C. F. A.**, 213, 216

**WALPOLE HOUSE, Chiswick Mall, W., Iron Gate in Front of**, 253  
**Waring, H. F.**, 35, 37-39, 67-69, 303, 305-308, Centre Plates, Nos. ccxi, ccxii, ccxxxiii  
**War Office, The New**, 146, Centre Plate, No. ccxviii  
**Waterworks, Leicester Corporation, Centre Plate**, No. ccxvii  
**Webb, Aston**, 147, Centre Plate, No. ccxviii  
**Weetwood Croft, near Leeds, Centre Plate**, No. ccxxviii  
**Wells, Somerset, Cottage Hospital at**, 362  
**Whitby, Semi-Detached Villas at**, 349  
**Whitechapel Picture Gallery, Centre Plate**, No. ccxxii  
**Whitehall Palace, Inigo Jones's Design for**, 143, 144, 145  
**Wickham, The Village of**, 243  
**Wiles, J. G., Centre Plates**, No. ccxxxix  
**Willcox, W. J.**, 362  
**Wills, Herbert W.**, 159, 160, 161, Centre Plate, No. ccxix  
**Wilson, H., C. Whall, and Louis Dav is, Centre Plate**, No. ccxxii  
**Wilton House, Wiltshire**, 175  
**Wimbledon, Additions to King's College School**, 348  
**Wind Pressures**, xviii  
**Wingfield Manor, Bay Window at**, 331  
**Wittet, George, Centre Plate**, No. ccxvi  
**Wood, H. D. Searles**, 134  
**Woolpit Church, Suffolk**, 383, 385, 386  
**Worcester Park Railway Station**, 157  
**Wren, Sir Christopher, Scheme of Decoration for St. Paul's, Centre Plate**, No. ccxxv

**YORK: and Ripon, Round About**, 289-296; **Minster**, 295, 296  
**York Stairs, Thames Embankment**, 173  
**Young, William**, 146, Centre Plate, No. ccxviii



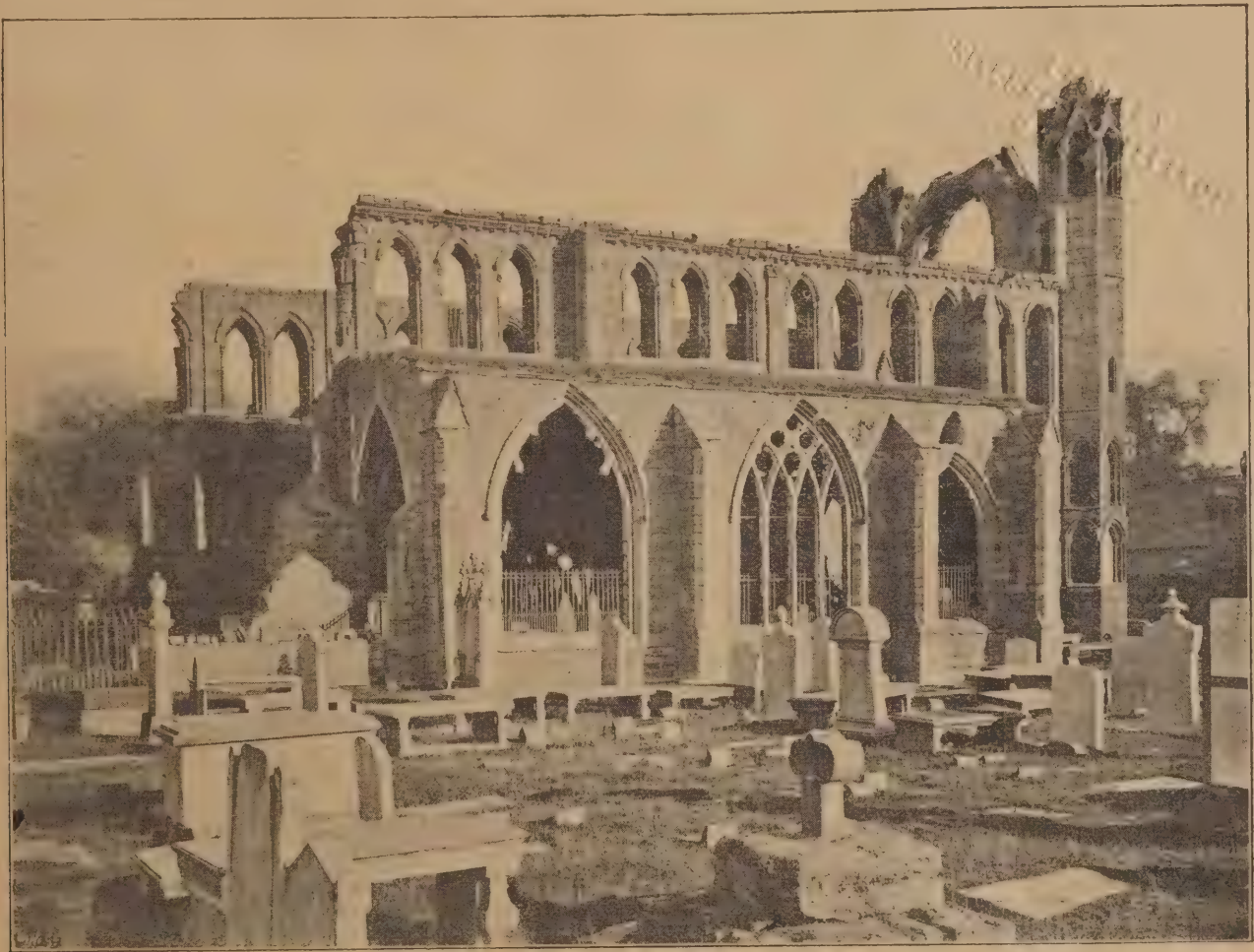


## An Architectural Causerie.

**The Misuse of Material.** THIS nineteenth century has been called by many names, and many qualities have been declared to be so characteristic of it, that it might be labelled and described by

century in a high degree, and that is the habit of misusing material. A large part of the production of the day is based upon this misuse, and the defect runs through manufactures of utility, those supposed to be things of beauty, those made by hand, and even in many cases through those productions of the cultivated brain and hand, known under the names of Art and Literature. If we walk the streets we see cement aping stone, cast-iron imitating qualities proper to wrought iron, or perhaps pretending that it is not iron at all, but something quite different; the walls above shop fronts apparently supported upon the edges of sheets of plate-glass, paint disguising the poverty of the woodwork of houses with the assistance of quantities of putty, or

ladies' dress is not free from the general defect—but here the pen must stop, nor dare to criticise, for, indeed, almost anything may be considered legitimate which increases the beauty of the fair sex. The reasons which prompt this misuse of material are two; the endeavour to produce a richer and more imposing effect than is warranted by the means at our disposal, and the determination to have novelty at any cost, congruity and seemliness being sacrificed without a pang. To point out an evil is easy, especially when it is so glaring as that under consideration; to discover the remedy is more difficult; yet a general return to greater simplicity of life would do much to set us in the right way. There are nations in which the sentiment for



ELGIN CATHEDRAL: SOUTH CHOIR AISLE, SHOWING CLERESTORY OF CHOIR.

them. For instance, it has been called a mechanical age, an age of invention; the liberation of men's minds and condition from every sort of trammels has been thought to have been accomplished, and has at least been attempted; though in the last few years the uneasy suspicion has arisen that after all the struggle it is but the form of tyranny that has changed. It is also the age of swift inter-communication, and of such publicity through the enterprise of journalism that the dislike which a few of us still have to our private affairs being made common property, and our little scandals served up as appetisers at every breakfast table, is almost resented by the mass of the public as being too "exclusive." But there is yet another quality which may be cited as characterising the

confounding brick, stone, or compo in one sticky mess. If one enters a house it is no better; the same confusion of qualities which should distinguish one class of manufactured articles from another strikes the eye, with the addition of strange forms of design in furniture, importing qualities quite unsuited to woodwork, and textiles in which the manufacturer has demanded from the designer something which it is impossible for the material to give satisfactorily. One goes aboard an Atlantic liner and is surrounded by a magnificence which suggests (no doubt, intentionally) absolute stability—marble walls—architectural forms such as would be in place in a palace, and decoration so conceived and executed that it is evident that any of the mishaps to which ships are subject must entirely ruin it. Even

Art rises to a passion, in which men will stint themselves of necessities that with the fruits of their privation they may become the happy possessors of something of beauty wherewith to glorify the bareness of their dwellings; the genius of the English nation is quite other, yet there was a time when English work was always solid and good, though it might lack the extreme grace and refinement which characterised the productions of more gifted nationalities. A considerable improvement has been effected in the last few years; is it past hoping for that the sterling English qualities may again become evident in English work, banishing the pretentiousness and imposture which so much surround us and make us to "walk in a vain show, heaping up riches?" S. S. G.



## On Reflection.

### Our New Volume.

WITH the present number, THE BUILDERS' JOURNAL AND ARCHITECTURAL RECORD enters on its ninth volume, and, in accordance with our announcements, it appears this week with certain fresh features which we hope our readers will regard as improvements. In the first place it will be noticed that a second double-page inset plate is given as a supplement; this, it is intended to make a regular feature of the journal. Then the "constant reader" will hardly fail to notice certain typographical changes which we think will be appreciated, not only as improving the appearance of the printed page, but as enabling the reader to see at a glance the subject matter of each paragraph. We have thought it advisable to extend somewhat the scope of our news columns. The building and engineering trades are so closely allied, and overlap at so many points, that a weekly column of "Engineering Notes" may form an acceptable feature in a journal devoted to the interests of architects and builders. The relations between employers and employed are matters in which all classes of our readers are more or less concerned. These matters we shall in future deal with under the heading "Masters and Men." As the questions which come under this category are often matters of keen controversy, a word as to our general attitude may be advisable. We hold no brief for employers or for employed; our business will be chiefly to chronicle events as

fairly and accurately as possible. We are in favour of all movements that make for industrial peace, and while we dissent from some recent developments of trade unionism, we are equally strongly opposed to a policy of "union smashing," whether avowed or concealed. Two other new features, which we think will be found of practical service to many, are the list of "Current Prices," which special pains will be taken to render reliable and up-to-date, and the diary of "Coming Events," in which will be found announcements of forthcoming meetings and other occurrences of interest to the architectural and building world. If our readers have anything to say with regard to these or any other features of the BUILDERS' JOURNAL AND ARCHITECTURAL RECORD, we shall be at all times glad to hear from them. Our wish is to meet the needs, as far as possible, of all classes of our readers, and though it may not be possible to adopt every suggestion made, the courtesy of a communication will be appreciated—none the less if it should chance to be in any degree critical.

### An Architectural Sculptor.

THE morning paper which gave us the names of the three new associates of the Royal Academy, told us also the sad news of the death of Mr. Harry Bates, at the comparatively early age of forty-nine. Although Mr. Bates had lately suffered a severe illness, he was thought to be in a fair way to complete recovery, and his death was sudden and unexpected. Mr. Bates, unlike the majority of the younger generation of sculptors, served a

long apprenticeship as an Architectural sculptor and decorator. He came to London in 1872, and, after studying at the Lambeth School of Art, became a student at the Royal Academy Schools, where, in 1883, he obtained the gold medal and £200 prize for sculpture. Subsequently, he pursued his studies in Paris. He, in common with such men as Gilbert and Onslow Ford, was an artist first and everything else afterwards; he was faithful to his ideals and fought bravely against the terrible difficulties which beset the career of a sculptor in this country. It is, therefore, sad to think that his life has been cut short before those hard struggles were ended, and at a time when brightened prospects promised in the near future. The Academy was always a good friend to the sculptor, and by allowing the erection of his statue of Lord Roberts in the courtyard in front of Burlington House conceded a privilege which we believe is almost without precedent. This noble statue, with its finely-designed pedestal, which will rank, perhaps, as Mr. Bates' greatest work, would otherwise have been overlooked, had not this opportunity for exhibition been allowed before it was transported to the site in Calcutta for which it was designed. Of his other works, his "Pandora" at the Tate Gallery is well-known; and the frieze at the Institute of Chartered Accountants will be remembered by architects, involving as it does principles in decorative sculpture which have been widely commended by theorists, although we do not find that the ideal has recommended itself at all widely to architects and sculptors. The large bronze bas-reliefs which many must have noticed in the doorway of a baker's shop in Kensington High Street, are early examples of the sculptor's art.

### London Nuisances.

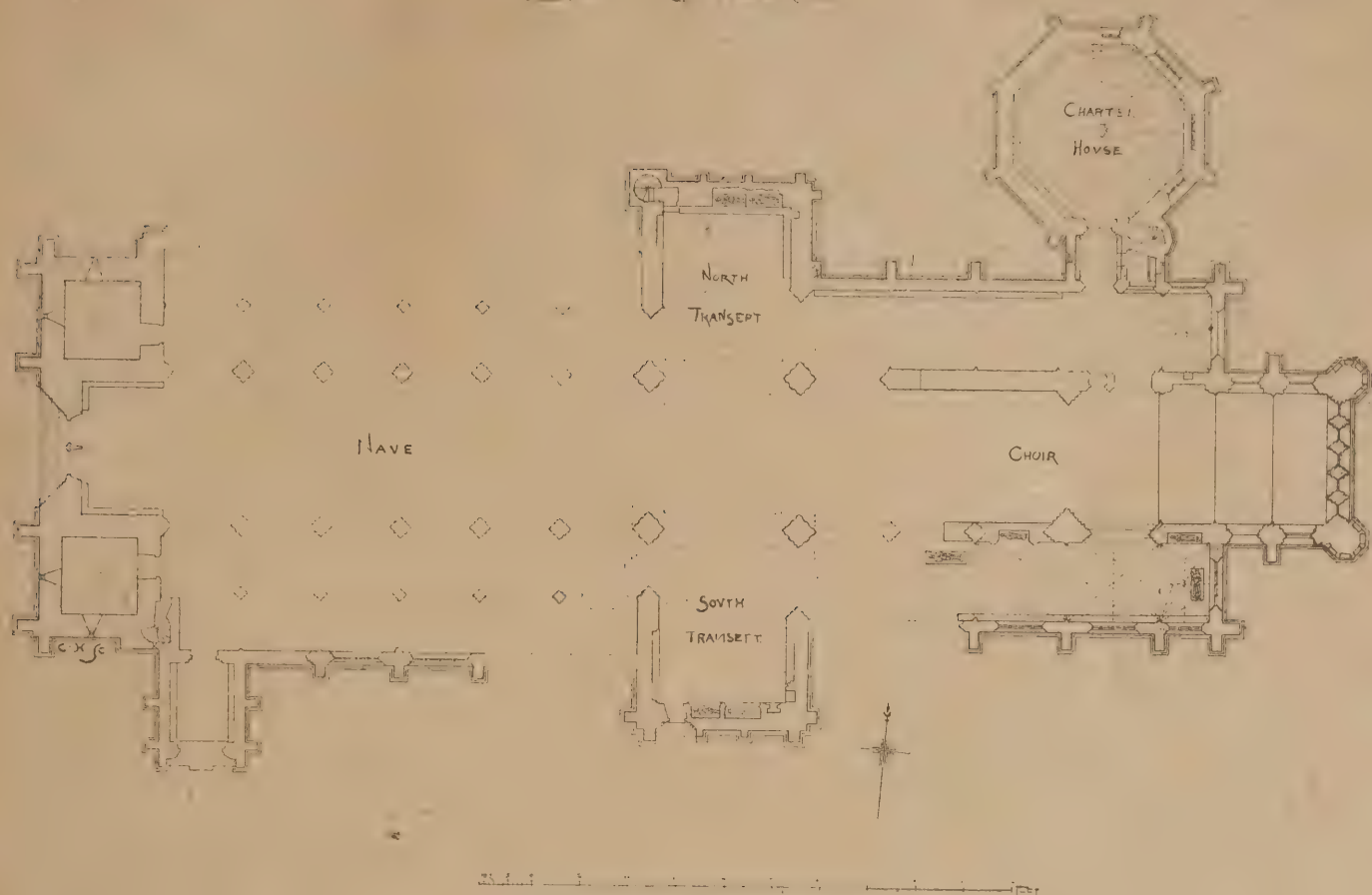
WE are glad to see that the protests which have recently been reverberating through the correspondence columns of the daily press seems to have stimulated the vestry authorities to avail themselves of the powers which they hold to enforce an abatement of smoke in those cases where it constitutes a positive nuisance. The proprietors of the Criterion and Trocadero Restaurants and the Spaten Beer Buffet were each lately fined £10 apiece, at the instance of the Vestry of St. James, Westminster, for failing to comply with the notice of the Vestry ordering an abatement of the smoke belched forth by their several chimneys. It is hoped that the fines will stimulate the defendants in these cases in those efforts to consume their own smoke which they professed to be making; but such actions as these, directed against those who emit more smoke than their neighbours, will not contribute towards any substantial improvement of London's atmosphere. This can only be effected by some radical change in the heat-producing appliances throughout the metropolis. It has been computed that from November to March an average of 50,000 tons of coal is burned daily in London; this ejects into the air, under the usual conditions of combustion, 2500 tons of unburned coal or carbon in the form of smoke, with 1250 tons of sulphurous compounds. An ordinary fire-grate has an efficacy of from 5 to 10 per cent. only, and a range about 20 per cent. of the full capacity of the coal consumed. Coal gas, however, the use of which is gradually growing in popularity, yields some 90 or 95 per cent. of heat, and it is only its high price which prevents it from being a practical remedy for the "smoke nuisance." A writer in the "Morning Post" has however called attention to a recent German invention, the Dellwike gas. This gas, it appears, is easy to produce in large quantities at the price of about 3d. per 1000 cubic ft. It is nearly free from sulphur, and in combustion leaves only carbonic acid and water.



ELGIN CATHEDRAL: TURRETS OF EAST GABLE.



## ELGIN CATHEDRAL.



ELGIN CATHEDRAL: PLAN.

## ELGIN CATHEDRAL.

BY HENRY F. KERR, A.R.I.B.A.

THERE is nothing in the general appearance of the Vale of Moray to recall to the imagination the rough times of the Middle Ages. It is true that there are the remains of certain mediæval buildings; but these remains are few, and have to be sought for among their vastly outnumbering modern surroundings.

Strip of their ancient memories for many generations, they have had rather a hard time of it to survive, even in a ruinous condition, to our day. They are lonely remnants of the wild days when a man carried his life at the point of his sword. By-and-bye there arose such foundations as that of Elgin Cathedral, a casket of glorious fragments of Scottish Art from the twelfth to the fifteenth century.

Alas! it has suffered from the usage of the centuries that conceived it; but even if their hard buffetings often laid a grievous blow upon its walls, they also lay upon us a debt of gratitude, for something even finer often took the place of the earlier work that was destroyed.

What do we find as the record of its life? There was a fire, probably accidental, in 1270; and there is a tale of barbarity almost unparalleled in history—in 1390, when the fierce Wolf of Badenoch deliberately marched with his followers and set on fire one half of the town of Elgin. This was a case of unbridled revenge, and as it was executed in retaliation for the rebuke of the Bishop of Elgin—the Cathedral was specially marked out to be a victim for this nobleman's ignoble wrath.

The central tower, probably owing to bad building, collapsed in 1506, carrying to destruction with it probably a portion of the nave. Immediately, however, Bishop Forman commenced to rebuild the tower, which did not attain its full height (198ft.) until 1538.

Thirty years of comparative peace ensued, until the infamous order of the Regent Moray was given to strip the roofs of their leaden coverings in order to pay his soldiery; and it

is little to be wondered at that in 1637—nearly seventy years afterwards—during a gale the rafters of the choir were blown down.

All its life more or less beset with difficulties—now pecuniary, now depredatory—even in its ruined condition, fate still dealt unkindly with it. On Easter morning, 1710, the great central spire fell, burying with it in ruin the north transept and the nave. And what shall we say of later years? We are ever ready to make a catspaw of the reformers, but ruined as the noble building was on that Easter morning, yet much havoc has since been perpetrated by the cupidity of man, and his preference for a ready-made quarry when he can get it—cheap. Roughness did not stop at the middle ages. Indeed, it was more excusable then, and even although we bitterly mourn the careless, thoughtless, greedy actions of these miserable quarriers, we must be thankful that later better times have come. And doubtless, if we had lived in these times we might (had accident allowed it) been as eager quarriers as they.

The present remains consist of the ruins of a church which once could boast of a nave of five aisles and two western towers, north and south transepts, choir with side aisles, and an octagonal chapter house.

Although the Cathedral at Elgin was established in 1224, the See of Moray is much older. It certainly comes either second or third in point of foundation—i.e., either after St. Andrew's or Aberdeen. But there was no settled cathedral church of the diocese for a long while; the old Norman Church of Birnie (still existing), the Church of Kinnebar, and of Spynie—now entirely demolished—seemed alternately to serve the purpose.

The Church at Spynie was eventually, by the Pope's appointment, honoured as the Cathedral Church of the diocese. But in a few years it was represented that Spynie was a most inconvenient position, and in 1224 the Church of the Holy Trinity at Elgin was selected for this distinction.

If, as seems most likely, the south transept is a part of this early church, it must have been one of considerable importance and

dimensions. Although it may be difficult to imagine why there should be so large a church at Elgin, as these transepts would suggest, it is, I think, more difficult to imagine that this work is not earlier than 1224. It is true that the doorway abacus is circular, but that of the upper windows is square. The shafts are in all cases detached. It is probable, from the mere fact, perhaps, of the circular headed windows being over the pointed ones, that the lower ones more truly indicate the real date, and the upper ones were a mere hark back to an earlier phase; yet looking at the details, and more particularly looking at the masonry—which is entirely different from that of any other part of the building—it is borne in on the reluctant mind that notwithstanding the apparent improbability of this being the transept of a church at Elgin before it received the onerous burden of cathedral honours, it seems impossible that it owes its origin to a date subsequent to the foundation of the see there in 1224.

The north transept, of which the walls exist at a height of about 4ft., was evidently of similar design, and, judging by the masonry, was also of similar date.

The peculiar rubble masonry is observable both inside and outside of the transepts, and it is worthy of note, it is also found in the lower portion of the north wall of the choir—a most interesting portion of the ruins, of which more anon.

Andrew, the first bishop after 1224, was a man of influential family, and under his active rule not only was the ecclesiastical foundation considerably enlarged, but the church itself seems also to have been greatly extended. The nave may have been lengthened, but, at any rate, the west towers were added. They are 24ft. square and 84ft. high, as they stand.

By the existing weather moulds for the aisle roofs it is plain that the church was originally of three aisles, not five, as at present. Built-up windows in the west walls of the transepts also tell the same tale of the early church.

The arcade over the west door in the interior of the church is, I take it, of 1224 date, and it is of the same design as the clerestory





ELGIN CATHEDRAL: WEST FRONT.  
1224 TOWERS, 1270 DOORWAY, 15TH CENTURY WINDOW.

arcade in the interior of the south transept, except that the larger arches are pointed in place of being round.

Now turn to what is left of the north wall of the choir. In the clerestory we perceive that the lights are not all of the same design. Two perfect ones and the joint of a third are shorter than the others to the east. These short lights are, I believe, a fragment of the clerestory of Bishop Andrew's church erected immediately after 1224. The details are similar to the later lights, but not identical.

The second point is this, that the bays of the clerestory lights are not centred with the vaulting bays of the aisle. This might suggest that the aisle was of later date, but if we examine more closely we shall observe that, while this is partially true, it is not the whole truth.

If we closely inspect the masonry in the second bay, underneath the second pair of clerestory lights, we observe indications of some alteration, and if these are traced out, we discover something highly suggestive of a pointed window having been obliterated by later masonry. The head of the pointed arch will be noticed just breaking through at the apex of the wall rib in the vaulting, and indications of the building up of a high window are visible under this. Further observe that immediately east of this a heavy buttress is abruptly broken off above the vaulting, clearly showing some alteration; and there is thus clear evidence that (1) the aisle is later than the choir wall, and (2) that this wall was originally an outside wall and pierced by a window in the eastmost bay.

But this does not exhaust the indications of change. It cannot fail to be noticed that the wall of the choir above the vaulting is rough, and consequently has never been an outside surface, and the portion of the aisle here was doubtless vaulted. This may have formed the Sacristy of the 1224 church. How far east the 1224 church extended, we have no means of guessing, only unearthing the foundations could reveal it.

Subsequent to the accidental fire of 1270, the eastern portion of the choir and clerestory was built, and evidence is obtained from the broken buttress already alluded to and the small strip buttress one bay further east, that no aisle was then intended. The strip buttress goes down the wall face, and when the aisle was added a portion of it was covered up by the vaulting.

As we shall presently see, the choir did not long remain aisleless.

Let us for a moment return to the 1224 clerestory and the built-up window. Here we have the interior wall of the clerestory, where we can see the variation in the design already alluded to. But look below the clerestory, and faint indications will be observed of a built-up arcade, similar in general scheme to that over the west doorway and in the south transept.

Now, a most important point in this connection is that the centre of the window just discernible as built-up on the outside coincides with the most easterly large opening of this arcade, thus uniting the two obliterated early features—the one inside and the other outside.

Before passing from this portion of the building let us note the sudden drop of the level of the clerestory passage. The old level is 18in. above the later one. The later level is continuous round the east end, and the south wall of the choir.

I do not take it as a mere coincidence that the clerestory level as shown on the east side of the west towers is exactly 18in. above the choir clerestory, or exactly the same as the fragment of the 1224 clerestory we have just been describing. I deduce from that fact that the nave at the west towers was of 1224 date, and indeed the general evidence which we have already been considering, and an examination of the details will fully bear this out.

On the interior face of the north wall of the choir, and at its base, are evidences in the masonry of this being a wall of similar date (as similar masonry) to the transepts, i.e., of the church existing before 1224.

The two great responds, one on either side of the choir, were most probably united by an arch. But when the outer aisles were added, and the buttresses were cut off in their lower parts, and the necessary abutment thereby removed, this arch would be taken down. And at a later date the elaborate finials were erected as a unique crowning feature above the caps.

The north wall of the choir was solid, but the south wall was open to the south aisle.

Probably it was while the new choir was being erected in such magnificent fashion that it was decided to erect a separate chapter house, and consequently a north aisle to the choir with access across it. The chapter house, as we shall see, is of two dates, one subsequent to 1270, and one fifteenth century.

A near view at the clerestory level of the choir shows the very beautiful detail of this portion of the old cathedral. Observe the care with which even the loftiest portions of the turrets are treated, and even on the side which would be quite hidden if the roof were on the building. As a matter of design and detail it would be hard to instance any building that equalled this; none could excel it. There is grace of design, superb proportion, the utmost delicacy of detail, and, although there is ample ornament, there is, withal, a repose and restraint which makes the work most fascinating.

The general design of the choir clerestory can be made out from this view, and also that of the south choir aisle.

This aisle and the corresponding north aisle of the choir are of the same date, judging by the design and details, which are practically identical; but they must either have been rebuilt, or at least have had new windows inserted subsequent to the barbarous incendiarism of that royal marauder, the Wolf of Badenoch. The buttresses and the walls under the sill level are probably original.

The only fragments of the nave remaining are two windows, the jambs of a third one, and the inner doorway and wall of the south porch. The two windows appear, on a superficial view, to be the same. In dimensions they vary slightly. The general design is similar, except the circle in the window head, which in the eastern one is filled with four pear-shaped apertures, and in the western one with three only. But the detail of the tracery is very different; that one which now is almost denuded of its filling is of much more beautiful design, and is probably the older, the other being an inferior copy of much later days.

I am very sceptical about the skew which is built up above one of the windows:—

1. It is extremely steep in pitch—far steeper than even the main roof for example, and if continued up to the centre of the bay, would finish well above the level of the sills of the nave clerestory lights.

2. It certainly did not start where it is shown, for the wall head must have been (as clearly indicated by the weathering on the west tower) about 2ft. higher.

There is no doubt that the two windows partly entire had gables over them, but, judging by the weathering for aisle roof on the tower, and on the transept walls, gables did not probably surmount any other window.

By far the most interesting part of this fragment—and one of the most interesting in the whole building—is the jamb of the window



adjacent to these, and nearer the south porch. It is rather surprising to find work of such an early character on the outer aisle wall.

There is no doubt that the original church existing in 1224 had only three aisles to the nave. There can be little doubt that the nave and choir were either rebuilt, or extended after the transference of the See to Elgin, and from remains of weather moulds on the north tower, it is plain that then the church had only three aisles. But here we meet on the outside wall of a five-aisled church early detail. The most probable solution of the problem is that either owing to the destruction of part of the nave in 1270, or owing to abundance of funds—or both—it was resolved to extend the already famous building by greatly increasing its width, from three to five aisles, so that it must, when completed, have presented a magnificent appearance within and without.

The facts that the south porch is similar, and that both exhibit similar decoration to that of the eastern portion of the choir, lead us to conclude that these works were carried out at some time shortly subsequent to 1270. If our conjecture is true, the building must have been almost transformed from a beautiful but modest cathedral church to one of very exceptional effectiveness: for not only was the choir greatly extended with its aisles, but a chapter-house was built adjoining, and the nave increased to one of five aisles.

The western portal, we may truly say, is the finest in the land. One never tires of studying it. If you gaze at it with half-closed eyes you get the true feeling of its power and grandeur, while examining it more closely you are charmed with the richness and variety of its design. Although the west towers were added after 1224, and doubtless a new west doorway was then constructed, this one is clearly an incision in earlier work, and of 1270 date, another proof of the rich inpouring of funds at that period, which enabled the bishop to so glorify his church.

(To be continued.)

## THE ARCHITECTURAL ASSOCIATION.

### HOW STAINED-GLASS WINDOWS ARE MADE.

BY CHRISTOPHER WHALL.

AT the meeting of the Architectural Association, held last Friday, Mr. J. Fellowes Prynne presided. The following new members were elected: Mr. F. J. Palmer, Mr. J. H. Taylor and Mr. A. S. Vernon. A lecture and demonstration on "Stained Glass" was given by Mr. Christopher Whall. The lecture was illustrated by a number of specimens of work done by Mr. Whall's pupils at the Central School of Arts and Crafts in Regent Street, and by some of Mr. Whall's own cartoons. After asking permission to break through some of the traditions which ordinarily guide the debates of the Association, and give instead of a formal paper what he called a regular work-bench talk, Mr. Whall proceeded:—

I would like in the first place to ask two questions: What do you want to know about stained glass? And, why do you want to know? These are curious questions to ask perhaps, but I ask them because on the last occasion of my visit here, when Mr. Wilson gave his admirable paper on "Glass" generally, one who spoke with great weight and authority took exception to the line taken by the lecturer, and to the general drift and conclusion of his remarks. He said "he should not like to suggest that the roads they were pursuing under the sanction of almost everyone who had written on the subject were wrong. What they had heard was the view of a pessimist. He failed to see any evidence to justify this view. Surely sooner or later they would evolve something in the shape of invention, and themselves influence opinion. There was no need for discouragement." That was a

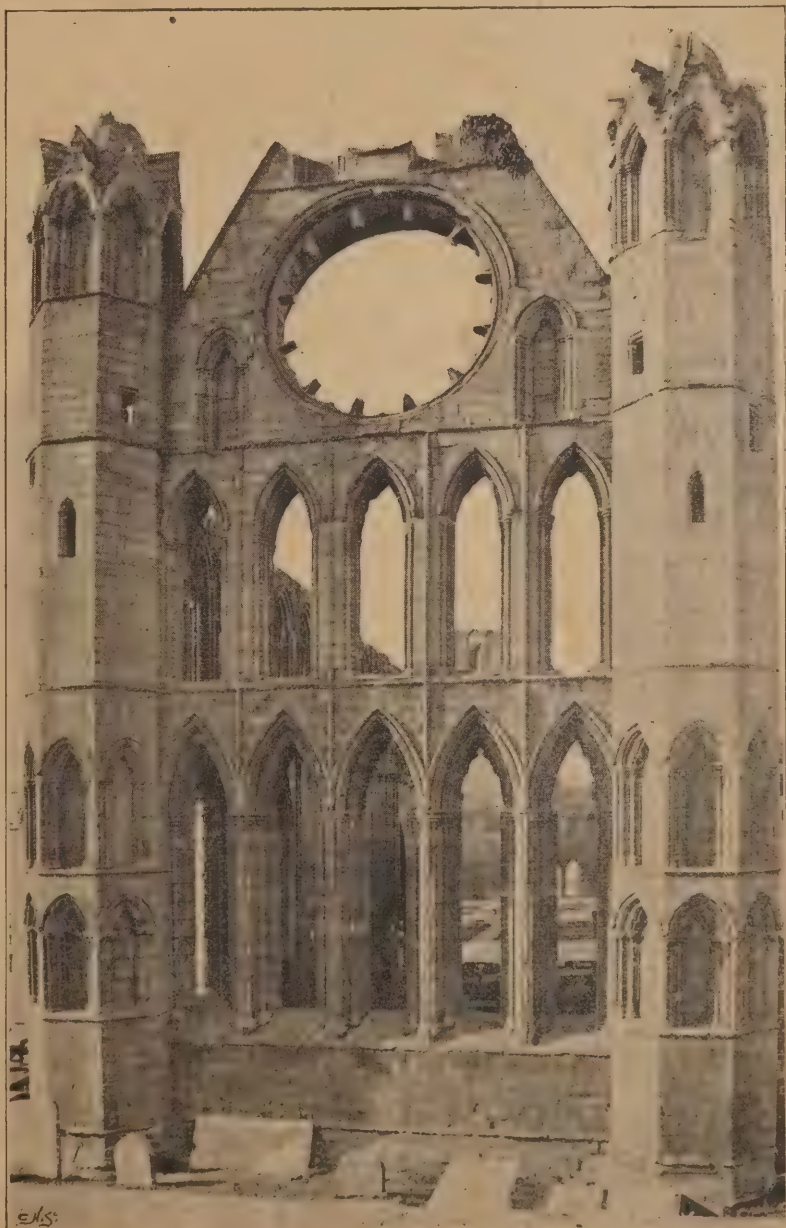
rather exaggerated criticism of what was itself rather exaggerated. I did not gather that there was anything in Mr. Wilson's attitude as a craftsman antagonistic to the ordinary curriculum which you go through in your offices under your architectural masters, or practice for yourself if you have started on your own account.

I think we may do something to-night to bring the two points of view somewhat closer together. But it does become a serious question to ask at the outset the reason why and the degree in which you should interest yourselves in the crafts. I am here to interest you, if I can, in one of them. So I will first show you briefly how it is practised, then how far it lies in your power to gain practical knowledge of it without sacrificing your career. By that time I hope we shall have got sufficiently in touch with one another for the rest of the meeting to take the form of question and answer and explanation.

Let me describe the actual production of a stained glass window. First of all the client wishes for a sketch. He wishes to see what you have in your mind appropriate to the situation of the window. The next step after making the small sketch is to reproduce it in the form of a full-sized cartoon. The cartoon should always be made by a craftsman—by a man who is intimately acquainted with all the processes of stained glass work—that is essential. The reason for this is that when these little sketches come to be translated, the whole finished work must be seen in

the mind's eye of the draughtsman, so that he may make the best use of his material. A mere draughtsman is not in a position to take up work of that kind. He may make a beautiful drawing, but if he has never touched the glass he does not know what its limitations are. He has never considered that to make a beautiful drawing for a canvas is altogether different from making a drawing to be cut up into small pieces with black lead between them. Therefore the drawing should be made by a practical man. The rule I adopt is to make as beautiful a drawing as I can, putting in as few working lines as possible—only those which indicate great masses of colour. After making the cartoon I set it with spray, so that it is indelible, and then draw over it with charcoal the remainder of the working lines. But I have conceived the whole in my own mind, so that I know at starting what I have to do.

The next thing is to make a tracing showing the leading lines only. The whole of the work is carried out by that tracing. First of all, the glass is laid upon it and cut to the pattern required, leaving it one-sixteenth inch short of the actual size, so as to allow for the core of the lead. The next step—a very important one—is the painting of the glass. The pieces of most importance—the head, hands, and anything that is elaborate in form—are laid down on the cartoon horizontally and traced with the pigment, which consists of oxide of iron with some flux which will melt it when put into the fire. After the pieces are



ELGIN CATHEDRAL: EAST END.





R.I.B.A. PRIZE AWARDS: SILVER MEDAL FOR MEASURED DRAWINGS. MOULDINGS ON NORTH PORCH, ST. PAUL'S CATHEDRAL. DRAWN BY HENRY ERNEST KIRBY.

all traced, they are waxed up and placed on a glass plate which has light behind it. For the waxing process you need a saucepan of wax; a slip of glass is dipped into it, so that the spots of wax are conveyed to every corner of the glass. There is one practice, almost exclusively my own, which I think very useful; that is the making of a sketch to scale in the material itself. This is to guide the craftsman by giving an indication of the appearance of the finished work. Of course that is a great deal of trouble to take; for years I did make a small sketch of that sort, though I do not do so now in one case out of ten.

Now we are ready for the actual painting. An opaque pigment is laid on in "mat" as it is called, that is with an even surface, answering much the same purpose as a ground in mezzotint, a ground brought to a perfectly even and smooth consistency, and then lightened with various tools, chiefly hog's-hair brushes worn down to the stump. One way in which this shading is done is by stippling, in which the glass is worked in a succession of spots; by this means you can lay a very perfect ground, supposing it is your object to get a very delicate tint. One can take just as much shade off as one wishes, in fact, in this way, a perfectly finished shaded drawing might be worked up, supposing it could be kept wet long enough.

The next process is the firing. The pieces are taken off the plate, the wax is chipped away from the edges, the work is laid on trays which go into the kiln; there it is subjected to intense heat, which softens the glass sufficiently to allow the pigment to penetrate into it. Here, of course, crops up an immensely important question with regard to stained glass—the question of permanency. On this I would only say that as a general rule I believe all the controversy about the use of this or that pigment is a mistake, and that the whole question depends upon whether the work is sufficiently fired or not. Those who fire high make sure that their work is to be permanent at the expense of losing a great deal of the painting by the way. Work that is fired in this way must be painted twice as dark as it is to be when finished. It is necessary to allow a very wide margin for what the kiln will do in the way of undoing the work, and perhaps a second painting may be needed, so that you may add what has been lost in the

fire. If you are fortunate enough to secure that without losing it again, your window is finished, with the exception of what is called the "yellow stain." The virtue of stained glass does not consist in anything put on the surface, except the shading; the virtue consists in the colour of the glass itself, which is coloured throughout its whole bulk. There is this one exception of yellow. In the fifteenth century it was discovered that there was a perfect pigment by means of which stained glass of any light colour could be brought to any depth. You can paint on the glass what will become any colour from primrose up to ruby by the action of the fire. This pigment takes a very low degree of heat, and yet the stain is perfectly permanent. The danger is that one is tempted to overdo it; it is wise to be reticent in its use, so as to avoid making the window look bilious.

That brings to my mind the use of white glass. The pigment in which we shade is rather warm in colour. The most satisfactory of all pigments as a working material is that which approaches most nearly to the colour of red lead; the purer you get it the redder it is. It is so unsatisfactory as a colour upon glass to paint your window in a hot red-brown that you may get out of the difficulty by using the greyer pigments which fire away much more; or you may use a greyish glass as your highest white. That seems to me a disastrous thing; we have lately had a run of windows painted in this way, with their highest white a greenish grey. If this is done you lose the pearly white which is the glory of the old stained glass. White glass is essential for the obtaining of good effect; to use anything else as your highest light is giving up the game to a great extent.

After the window has been painted and fired, it has to be leaded out. The whole thing is laid down upon the bench and put together like a child's puzzle; the lead is put round it, the pieces are kept together by horse-shoe nails, then the joints are fixed together by solder. Finally the whole is cemented; this makes the window hard and stiff, and also waterproof.

Such is the process of making a window, as far as I have been able to describe it. Now there are several practical questions which appeal to you as architects. How much do you require to know about this sort of thing in order to be able to direct it? I do not think you want to know anything about it which would take a very enormous slice out of your career in order to learn it. In order to show you that such is the case I have brought here some specimens of work done by my pupils in the School of Arts and Crafts in Regent Street. That is a craft school, not a school for theoretical design. Therefore everything here, except the designing, has been done by the pupil himself. Those who previously

have been merely educated to paint the thing from the cartoon are here required to learn, or, at any rate, to fumble through, the processes of cutting and leading and painting the work. The pupil is required to know enough of his material to be able to deal with it in a practical sense. It cannot but have a good influence upon a man when he is painting on a material to know, at any rate in an amateur sense, what the material will do and how it is to be dealt with.

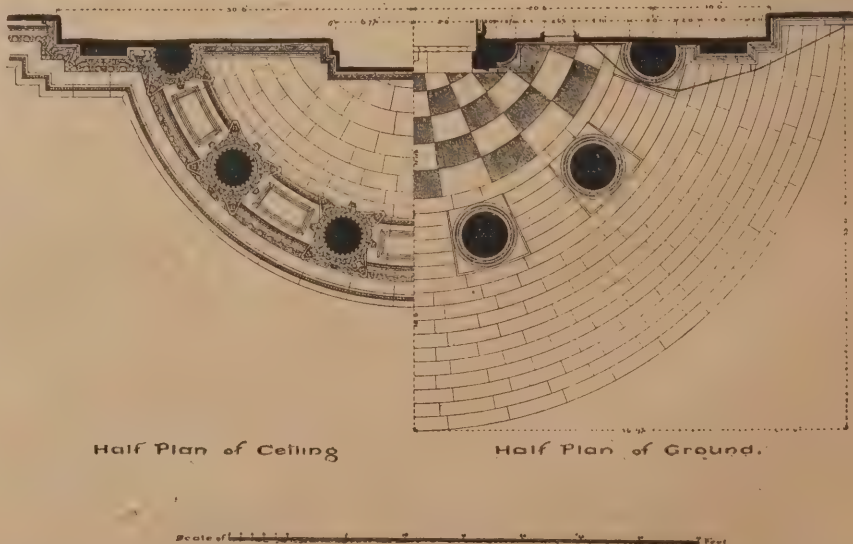
I think that is very much an answer to the question often raised, how far it is possible for an architect, with all the demands upon his time and the exigencies of his training, to take up any of the crafts to a useful end. If it was demanded that an architect should take up a craft so as to be master of it, it seems to me that in these days that would probably be impracticable. But there is a great deal to be learnt in a short time; the mere touch of the stuff gives you a fresh view of it; you do not then feel the same in regard to it as when it was to you merely a book illustration. I am sure this familiarity has a vital influence upon the design of those who practice the craft, because it is not architects alone who direct these things with less knowledge than one could wish; it is also those who carry out the work. Stained glass windows are almost universally produced with labour so divided that not one of those engaged on a portion of the work could have done the whole work himself. It must be a good move that those who produce the thing should be able, on occasion, to produce the whole of it. At the Arts and Crafts School we endeavour to make the pupils masters of their craft, so that they can, if necessary, lead the piece of work up as well as paint it.

An interesting discussion followed, and Mr. Whall replied at length to the questions asked. Our report of these subsequent proceedings is held over till next week.

## FIRE PREVENTION.

### A NEW SYSTEM OF FIRE TESTS.

THE British Fire Prevention Committee, which was founded by Mr. Edwin O. Sachs, the well-known architect, shortly after the Cripplegate Fire of November, 1897, has just taken a new and important step towards the realisation of its objects. This is the opening of a testing station, where materials and systems of construction may be submitted to independent and scientific tests with a view to ascertaining the exact measure of their fire-resisting capacity. Nothing of this kind on so large a scale has hitherto been attempted; a few independent tests have been



R.I.B.A. PRIZE AWARDS: SILVER MEDAL FOR MEASURED DRAWINGS. PLAN OF NORTH PORCH, ST. PAUL'S CATHEDRAL. DRAWN BY HENRY ERNEST KIRBY.

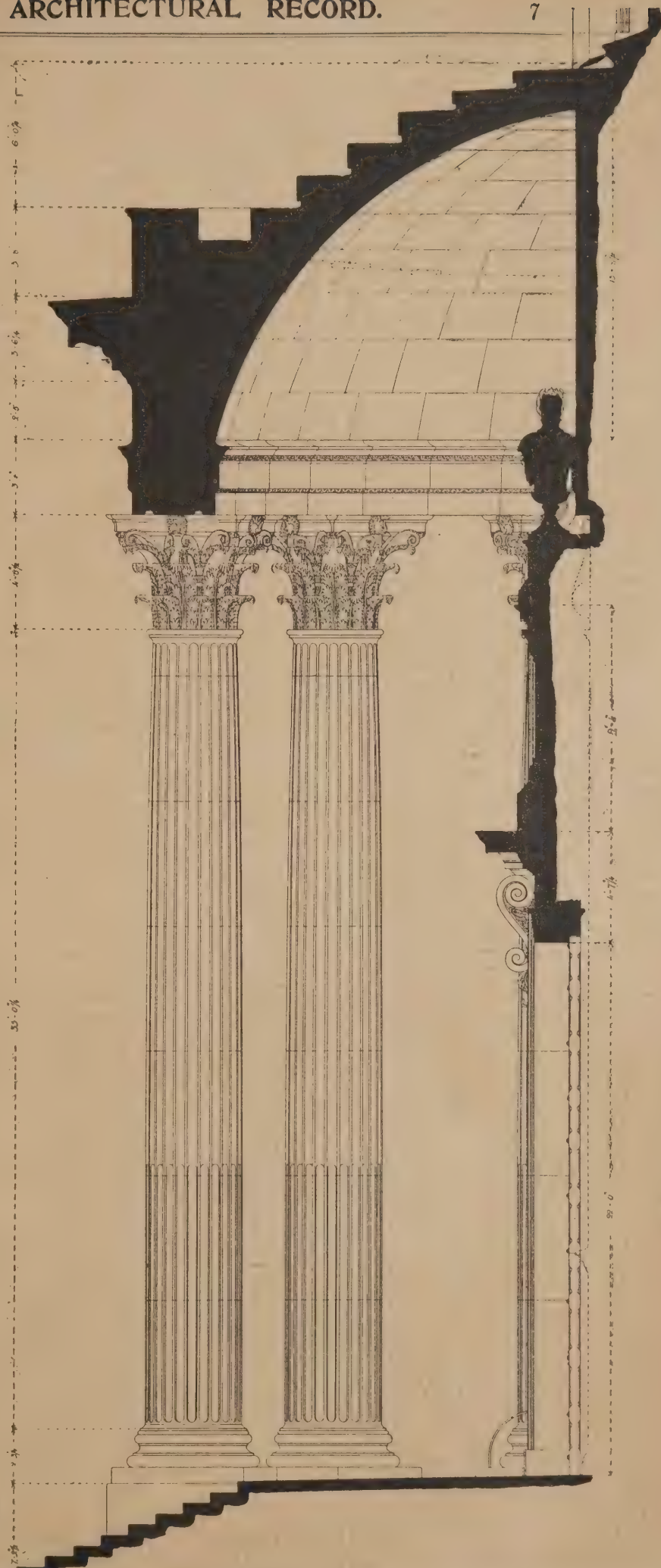


made in America, and a number of individual makers of fire-resisting specialties in this country and elsewhere have carried out tests on their own account. But this is the first testing station that has been established where the procedure is absolutely unbiassed and scientific. The arrangements of the testing station are in the hands of an executive committee, which includes a number of eminent architects, surveyors, and engineers. The tests are to include investigations into the fire-resisting qualities of ordinary methods of construction as well as of special systems. The maker of a fire-resisting system of construction who wishes to have it tested and hall-marked, so to speak, by the Committee, can do so by paying the exact cost of the test. The Committee will record with tables and diagrams the bare facts of the test, without any comparisons or expressions of opinion; the Committee's object being not to propound theories, but to ascertain facts.

The methods by which this object is sought to be accomplished were demonstrated to a number of press representatives at an experimental test, conducted at the testing station, on Jan. 31st. The station comprises two houses, standing in their own grounds, near Regent's Park, and backing on to Regent's Canal. The principal building is used for committee rooms and laboratory purposes, and in the gardens at the back have been erected three brick huts, each 10ft. square. Here the larger tests are conducted. The fuel used is gas, which is made on the spot. The gas producer is worked by a steam boiler, and the gas passes through a main gas pipe of 18in. diameter into smaller pipes, which convey it to the brick huts. By this means the temperature can be regulated as desired. The temperatures are recorded by two of Professor Roberts-Austen's pyrometers, placed in the house and electrically connected with the testing chambers. On the occasion of this experimental test an ordinary solid joist floor, protected with iron below, had been built over one of the testing chambers, and was subjected to a heat of 1300 deg. Fahr. The arrangements were in the hands of Mr. Sachs, the chairman, and a sub-committee of the executive, comprising Mr. Frederick R. Farrow, F.R.I.B.A., Mr. Max Clarke, A.R.I.B.A., and Mr. Robert Mond, M.A., F.R.S.E. The experiment on this occasion was, of course, of no particular scientific importance, being merely designed to show the kind of work it is intended to carry out at the station. It may be interesting, therefore, to give a few notes of another experimental test that had been carried out a few days previously:—

The object under investigation was an ordinary pugged floor which would meet with the requirements of the Building Act, the specification being drafted by Mr. Woodthorpe, M.A., F.R.I.B.A., District Surveyor to the City of London (Northern Division). Three variations of pugging were used with wood joists. The floor was built in the ordinary way over the testing chamber, and had been given six weeks to dry. The test applied was a fire test of an hour's duration, at temperatures varying from 1800 to 2300 degrees Fahrenheit, followed by the application of water under 40lb. pressure from a manual engine for 1min. 30sec. No load was put on the floor nor had it to withstand the shocks of falling weights. The temperatures in the chamber were in this case solely recorded by Professor Roberts-Austen's pyrometers (No. 47 and No. 48), each working from two thermo-junctions and registering automatically.

An effort is made in these tests to reproduce, as far as possible, the actual conditions of a real conflagration. To this end the floors are sometimes loaded, or weights are dropped upon them, and water is applied under varying pressures. It will thus be seen that every effort is made to render the tests not only independent and scientific, but of real practical value to all who are concerned in the construction of buildings.





## R.I.B.A.

### PUBLIC BATHS AND WASH- HOUSES.

By A. HESSELL TILTMAN, F.R.I.B.A.

AT the meeting of the Royal Institute of British Architects on Monday evening, the President, Professor Aitchison, R.A., presided. It was announced that the Council had decided to submit to the Queen the name of Mr. G. F. Bodley as a fit recipient of the Royal Gold Medal, 1899.—A paper by Mr. A. Hessel Tiltman, on "Public Baths and Washhouses," was read by the secretary, Mr. W. J. Locke. Mr. Tiltman opened his paper by an expression of his personal views upon the ordinances which should govern the arrangement of baths and washhouses in the future, and their influence upon the arrangement and details of their various departments. The Baths and Washhouses Act, 1846, was passed "to encourage the establishment of public baths and washhouses. The municipal duty, however, of providing facilities for the cleansing of the bodies and linen of the poor had not been adequately performed. Statistics showed that only a small proportion of the class for which these establishments were chiefly intended availed themselves of the opportunities offered. The reasons for this partial failure, the author considered were—First, that the initial distribution and classification of the establishments were frequently at fault; secondly, sufficient effort was not made to educate the masses as to the necessity and benefits of the bathing habit. The bathing community to be catered for consisted of the middle class, the working class, and the very poor. A great initial blunder was committed in associating these in large proportions for all purposes of swimming, bathing, and washing, in almost every establishment. The remedy lay in the practical adoption of some system of

**Central and Branch Establishments,** classified and distributed to suit the special needs of each district. Ablutionary baths and public wash-houses should be decentralised and located at much more frequent intervals throughout those districts requiring them, forming a series of branch establishments; whilst swimming baths should constitute centralised establishments at one or more points, equally dividing up the whole district. The author then enumerated the requirements of the suggested establishments. The central establishment should be the chief and most attractive. The branch establishments should consist of two types:—(1) Baths and wash-houses; (2) People's baths. Either type could be put upon the site of from two to four small houses in a by street, which would be neither costly nor difficult to acquire. In extending the provision of baths and wash-houses, the authorities should consider the advisability of doing so in the direction of branch rather than central establishments. The author had visited and inspected a very large number of baths and washhouses throughout the United Kingdom, and on the Continent. A committee of medical and other experts in New York, after careful investigation, had reported their preference for the arrangement and administration of the new form of German and Austrian "People's Baths." The distinguishing features and hygienic advantages having been fully explained, the author went on to describe the plan and arrangement of each of the three classes of typical establishments advocated by him.

#### General Arrangements.

The central establishment site should have a superficial area of from 30,000 to 40,000 square feet, be in a prominent position, and easily accessible from all parts of the town or parish. It should admit of the perfect drainage of all portions of the establishment without necessitating an expensive treatment of levels of the building generally. Much saving may be effected by having only a small frontage towards the main thoroughfare.

A good site may often thus be secured, carrying with it sometimes sufficient frontages to back streets, where minor entrances may be provided. In baths carried out for the Islington Vestry, the author had adopted the quadrangular system to such a site as that described with excellent results. The water supply must be abundant, pure, and soft. There should be storage for some 15,000 to 20,000 gallons; ponds of very large size are not advisable. It is better to increase their number rather than their dimensions when the latter exceed 90ft. by 30ft. Five is a useful number for central establishments; two for each of the sexes, and a fifth or small pond to be used alternately for both sexes, principally as a teaching pond. In England swimming baths were usually closed during six months of the year; but, with adequate warming and other arrangements, as in Germany, where, though much colder, swimming baths were open all the year round, swimming clubs would gladly use them throughout the winter months. The arrangement of one of the swimming baths during the winter months for public entertainment purposes was next considered, and the best means of meeting the County Council requirements in the matter of exits, &c. The location of hot-air baths, laundry, boiler-house and engine rooms, apartments for superintendent and engineer, &c., having been indicated, the author went on to deal with the details affecting the various departments, viz., swimming baths for both sexes, douche or cleansing rooms, slipper and rain-douche baths, hot-air baths, the establishment working department, boiler-house, engine room, accumulator room, receiving room, washhouse, drying room, folding and distributing store rooms, mess room, engineer's workshop, and the administrative department.

#### Swimming Baths.

A defect requiring correction in English swimming baths was the insufficiency of dressing-box accommodation in proportion to the superficial area of pond surface. The almost universal arrangement of placing the dressing-boxes down two sides, and possibly one end of the hall, must be improved upon. This might be done by adopting the Continental method of placing an equal proportion of the dressing-boxes upon the gallery floor, or by arranging them in a series of transeptal bays upon one or both sides of the bath. The pond should be rectangular in shape, and in the proportion generally of length to width as 3 to 1. Steps to the water should be of wood, and made removable. An open self-draining channel, close to the top of the pond and running continuously round it, serves as a scum overflow and spitting trough, and a suitable height above the water-line an iron or copper safety rail should run all round the pond for the use of tired swimmers. At the shallow end a portion of this rail is usually converted into a spray pipe, extending the whole width of the pond. By raising or depressing the direction of the perforations in this, a useful and pleasant means of freshening and clearing the top surface of the water is obtained. Further points considered in this connection were the depth and temperature of the water gangways round the ponds, flooring materials, dressing-boxes and their fittings. An important feature of the swimming bath should be the douche or cleansing room. This is almost unknown in this country in connection with swimming baths; but it is a universal provision of the German baths, and used by every bather as a matter of necessary routine, it being understood that before entering the swimming pond he should, out of consideration for his fellow bathers, undergo a thorough cleansing process.

#### Hot-Air Baths.

These should be upon the lines of the improved form of the Anglicised Turkish Bath, consisting of three rooms, viz., the tepidarium, 140deg. Fahr.; the calidarium, 180deg.; and the laconicum, 250deg.; together with a combined cooling and dressing room, and a shampooing and douche room. For the second-class hot-air baths the author recommended the

system suggested in Metcalfe's "Sanitus Sanitatum et Omnia Sanitas," which consists of a combination of hot-air rooms of the Turkish bath with a system of warmed lavatories, in lieu of the shampooing process and plunge bath. This modification of the Turkish bath, for ordinary purposes of ablution, would be perfectly effective, less provocative of colds, and more economical than the ordinary warm slipper bath.

#### Public Washhouses.

In considering the second part of his subject, "Public Washhouses," the author said that their present arrangement required complete overhauling. Full details of a small installation were given as an indication of the line modification should take. The following rooms were described and illustrated: Public wash-houses, mangling room, waiting hall, cloak and bonnet room, crèche, ticket office. Reverting to bathing establishments, the author explained that the smaller type of his branch establishments, viz., people's baths, was intended to meet, in the cheapest and simplest manner, the needs of the very poor for cleansing facilities. It consisted of very small establishments of rain-douche baths, built at very frequent intervals, in the poor and populous districts, after the manner of the Germans and Austrians. These establishments could be made so small and compact as to permit of their erection under our streets, in a manner similar to our underground lavatories.

#### Architectural Treatment.

Finally, the author touched upon construction and architectural treatment. Construction should be of such a character as to resist the action of water in every form, whether from carelessness or from the necessities of frequent cleansing. It should be easily kept clean, free from vermin, and especially so with respect to the transfer of contagious matter. As to external Architecture, the design of the building should clearly express its purpose, quite apart from all questions of style. It should appear exactly what it is, and not ape the dignity and expression of the modern town hall. In the treatment of the natural outcome of the plans, there are infinite opportunities for original and distinctive work. The paper was illustrated by a large collection of plans of baths in England and on the Continent, including the Kennington Road Baths, Hornsey Road Baths, Tibberton Square Baths, River and Public Baths at Hamburg, and "People's Baths" at Hamburg and Vienna.

#### The Discussion.

Mr. W. Emerson, in a few sentences, proposed a vote of thanks to Mr. Tiltman for his able and interesting paper.—This was seconded by Mr. H. L. Florence, who remarked that he had no doubt the system of the douche would be much to the advantage of the populace generally, if they could be induced to take kindly to the novelty. He did not quite agree with the suggestion that York stone should be used for the landings round the baths, being of opinion that slate was both pleasanter and more easily cleaned.—Mr. A. T. Bolton referred to the difficulty of minimising the noise that came from a swimming bath. He thought the noise arose largely from the excessive amount of glass in the roof. Every splash was echoed from the glass roof. He suggested that if the amount of glass could be restricted, the inconvenience arising from this cause would be greatly diminished.—Mr. Saxon Snell said that anyone who had had the privilege of going over the new swimming bath at Shoreditch would feel that a very great stride had been made towards the ideal. With regard to small bath establishments, he thought great economy might be effected by using them alternately for men and women; this would be quite practicable, because women generally bathed in the morning and men in the evening. He quite agreed that many small establishments were to be preferred to a few large ones.

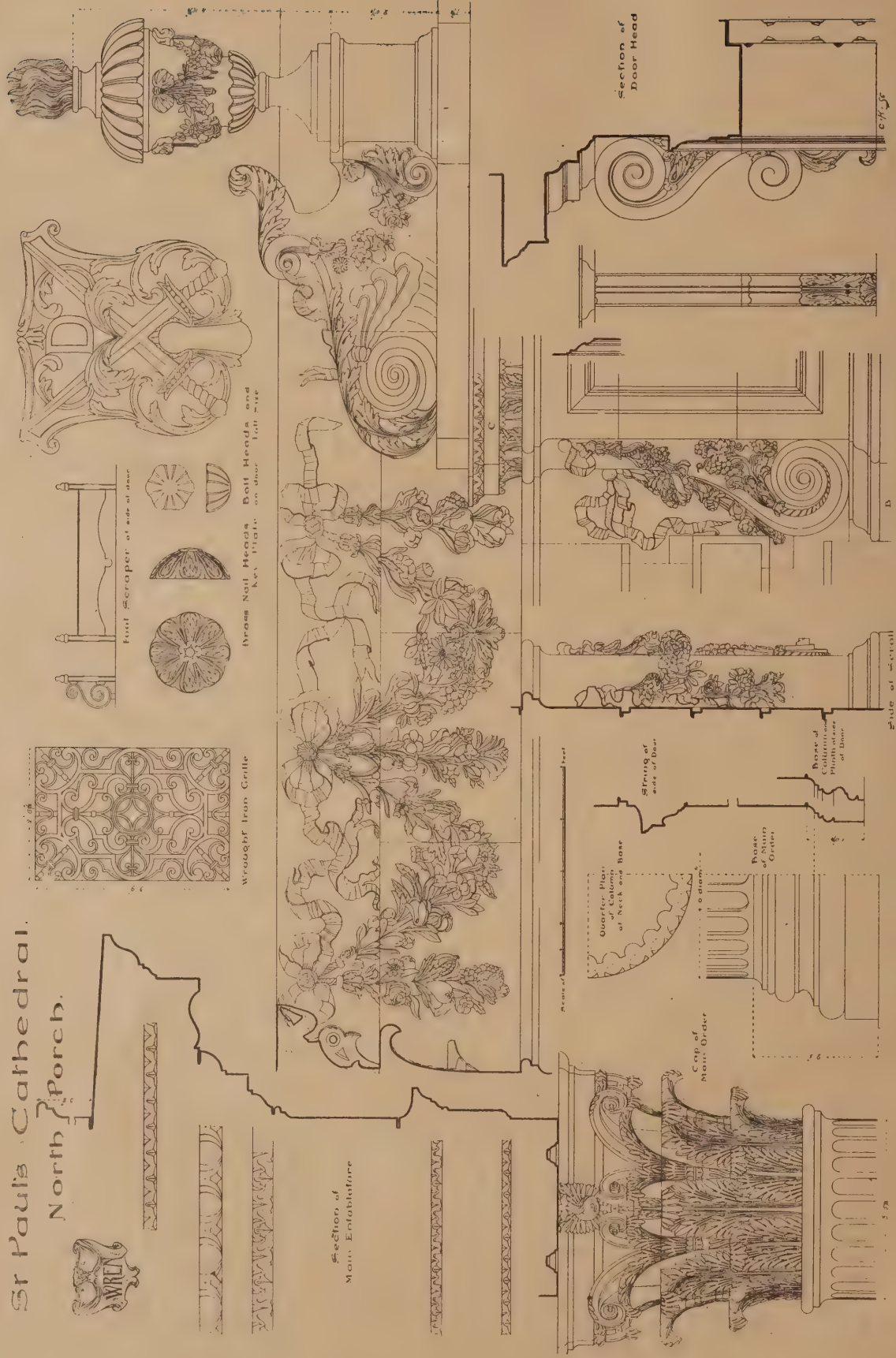
Professor Aitchison, in putting the vote of thanks to the meeting, expressed the hope that slipper baths "and other abominations" would be done away with as soon as possible.



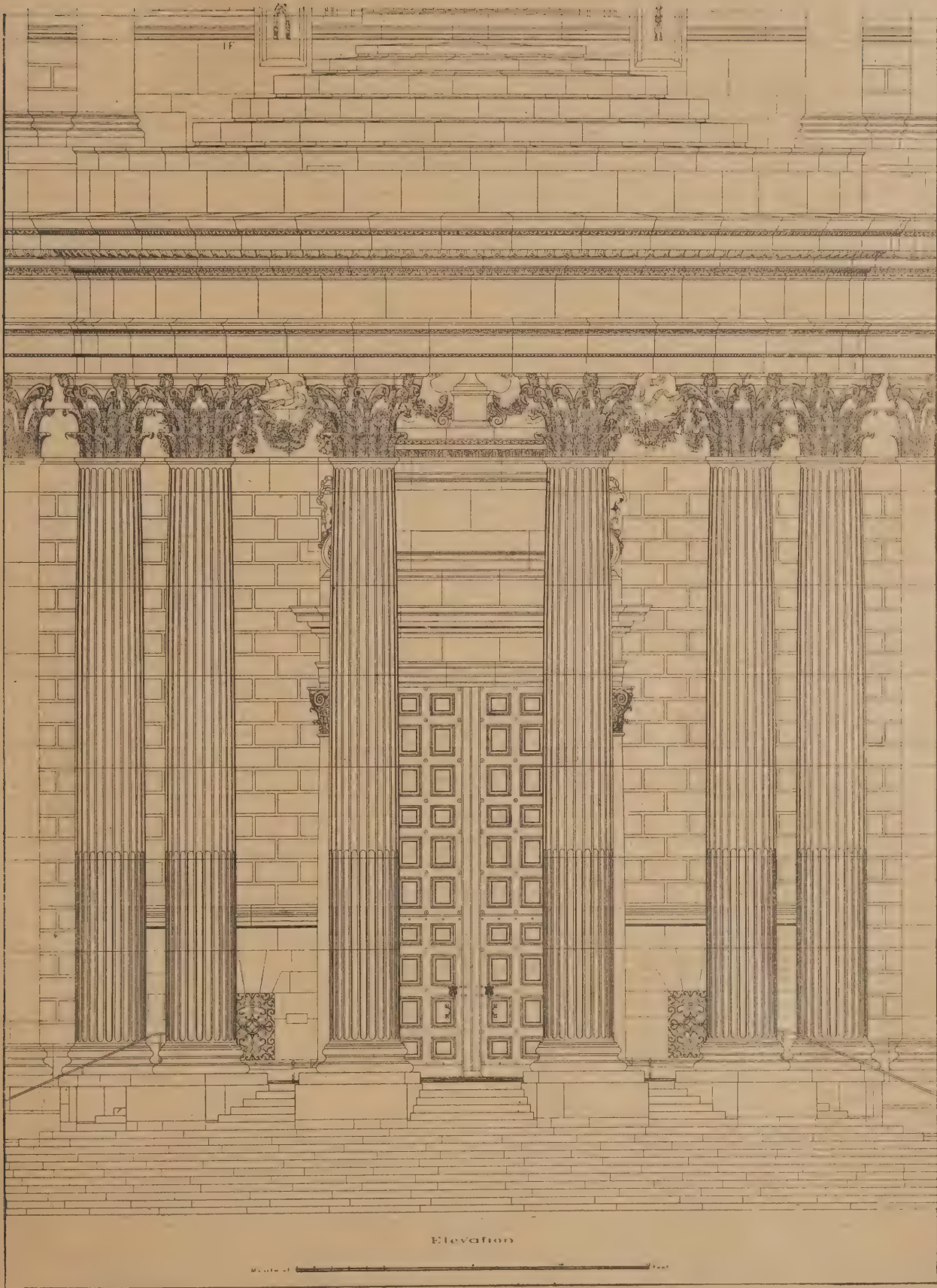




St Paul's Cathedral.  
North } Porch.







R.I.B.A. PRIZE AWARDS: SILVER MEDAL FOR MEASURED DRAWINGS. THE NORTH PORCH OF ST. PAUL'S CATHEDRAL. DRAWN BY HENRY ERNEST KIRBY.

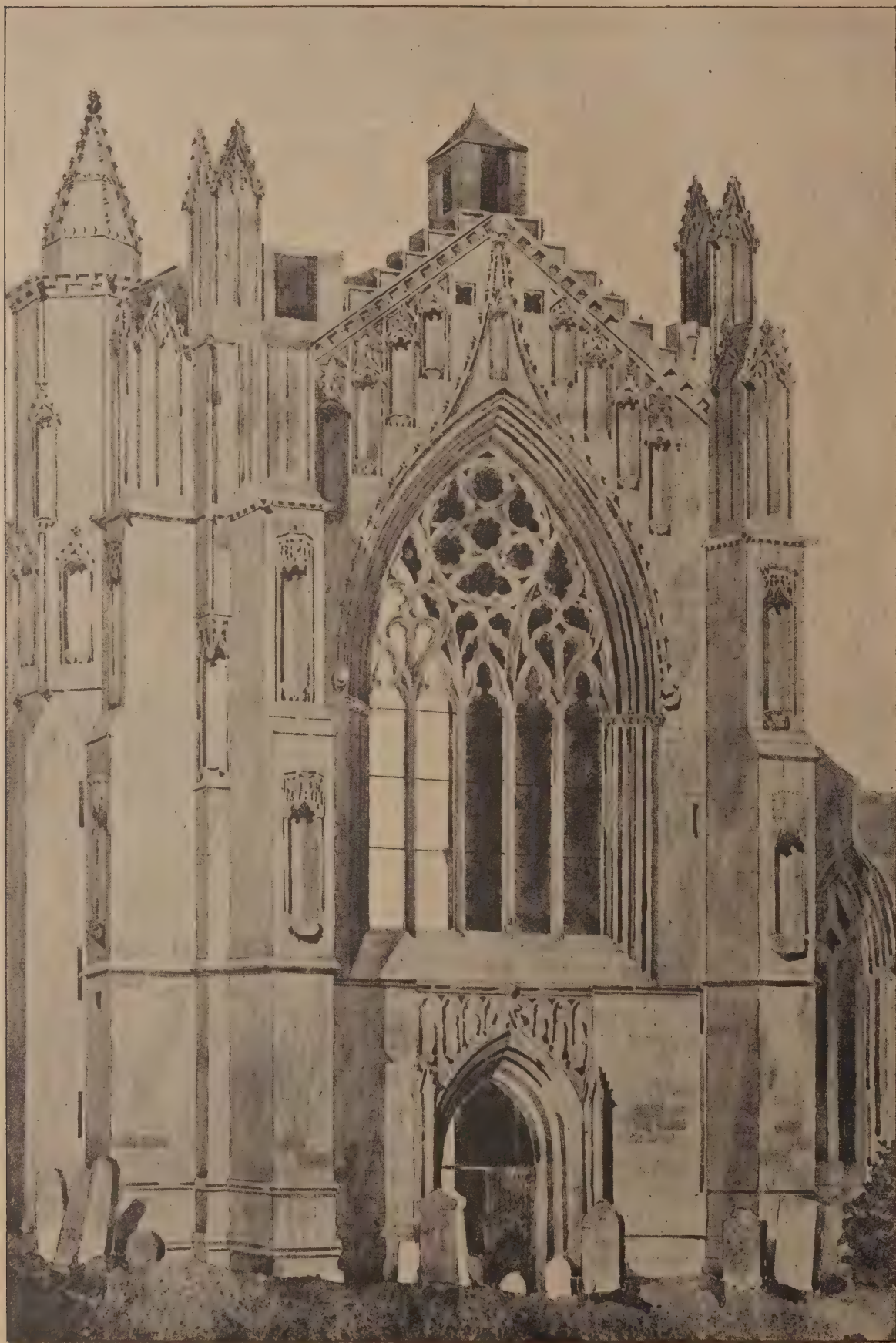


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R.I.B.A. PRIZE AWARDS: THE PUGIN STUDENTSHIP. MELROSE ABBEY: SOUTH TRANSEPT.

DRAWN BY J. HERVEY RUTHERFORD.





R.I.B.A. PRIZE AWARDS: THE PUGIN STUDENTSHIP. GATEWAY OF ST. JOHN'S COLLEGE, CAMBRIDGE.  
DRAWN BY J. HERVEY RUTHERFORD.







## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### APPROXIMATE ESTIMATES.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Will you kindly give me some information with regard to the customary prices per cubic foot for (1) middle class dwelling houses, (2) hotels, (3) churches, (4) schools, (5) warehouses, (6) hospitals. Should dimensions be taken from bottom of concrete, or from ground line?—Faithfully yours, Cardiff. "CUBE."

The cost of building is rising rapidly just now at the rate of about 5 per cent. every three months. At present the prices are approximately, per cubic foot: (1) middle class dwellings 8½d., (2) hotels 10d., (3) churches 1s. to 2s., according to elaboration, (4) schools 7d., (5) warehouses 6d. to 8d., (6) hospitals 9d. to 1s. Dimensions should be taken from bottom of concrete to half way of roof.

### GWILT'S ENCYCLOPÆDIA OF ARCHITECTURE.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Would you kindly favour me with the date, price, and publisher's name of Gwilt's "Encyclopædia of Architecture"? Also please say if it is a book of instruction or for reference.—Yours truly, A. B. Clifton.

Gwilt's "Encyclopædia of Architecture" is published by Messrs. Longmans, Green, and Co., and costs 52s. 6d. A discount bookseller will supply you with it for less. There was an edition issued in 1891, and we believe this was the last. The 1888 edition is, however, recommended to students by the R.I.B.A., and you might obtain a secondhand copy from Messrs. Batsford, High Holborn, London. The book, which runs to nearly 1500 pages, constitutes a concise but comprehensive survey of all subjects pertaining to Architecture, both theory and practice. It is much more than a book of reference, and should be possessed by every architectural student.

### REMOVING PAINT AND WHITE-WASH FROM BRICKWORK.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Will you kindly elicit from your correspondents the best mode of removing paint and whitewash from red brick exterior, to restore to original colour? T. T. High Wycombe.

To restore to its original colour a red brick exterior which has been coated with paint or whitewash is, to all intents and purposes, an impossibility. But possibly something less than complete restoration will suffice. "Whitewash" is a vague term, and may mean anything from limewash—bound with tallow or oil—to distemper. If limewash, the brickwork is well nigh past hope, as nothing less than scraping every inch of the surface will remove it; a stiff wire scratch-brush would be useful. If distemper, wash off the coating as far as possible in the ordinary manner, then go over the work carefully and thoroughly with stiff bass dandies, using plenty of clean water. To remove paint, make up a "pickle" of freshly-burned unslaked lime and ordinary washing soda, in the proportion of 3 to 1, with sufficient water to make a creamy liquid. Apply this—whilst still hot, and using worthless brushes for the purpose—to the surface of the paint, and continue the application until the paint is dissolved. Follow on with plenty of clean water, applied with dandies, and when the brickwork is as clean as it can be got, go over

it again with a solution of weak acid—sulphuric or acetic (ordinary vinegar will do) in sufficient quantity to give the liquid a slight acid taste—in order to neutralise any alkali still left in the pores of the bricks. Then give another wash with clean water, and the work is ready for any further treatment. It would probably be found desirable to rake the joints, colour the brickwork, and then to repoint the whole exterior. The colouring is done with Venetian red, toned to colour required with Spanish brown, 2lb. of dry colour being stirred into from 1 to 1½ gallons of water, and ½lb. of white copperas being added to this quantity in order to "set" it.

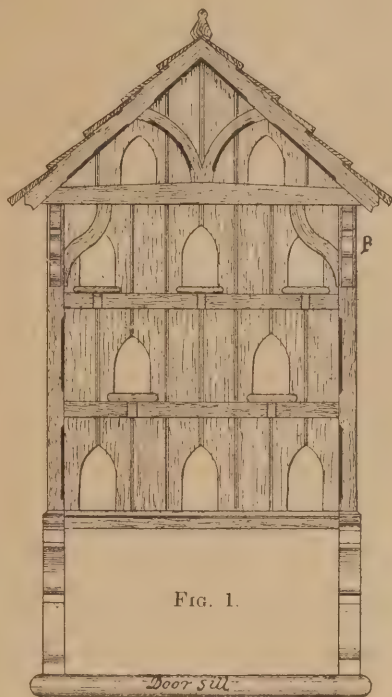


FIG. 1.

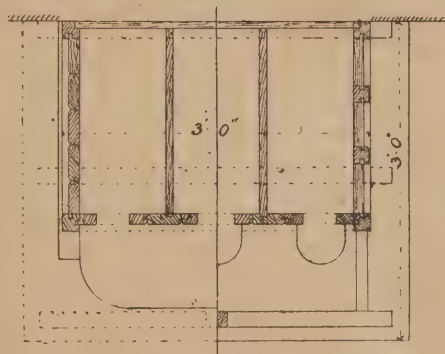


FIG. 3.

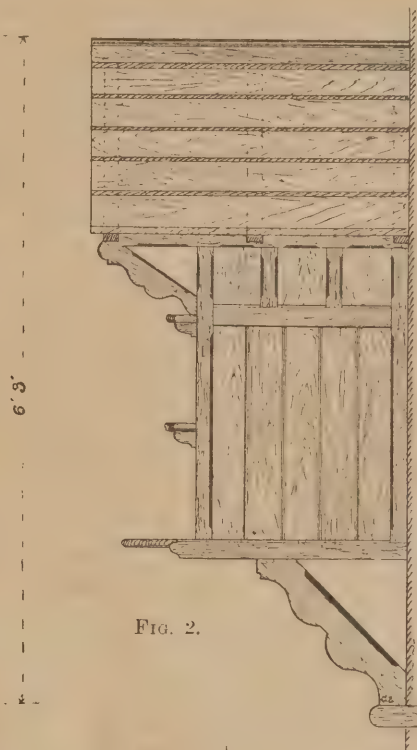


FIG. 2.

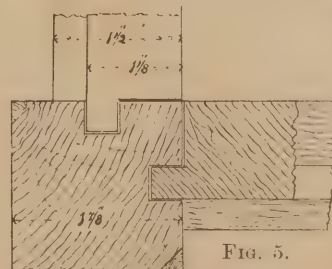


FIG. 5.

DESIGN FOR DOVECOTE. BY GEORGE ELLIS.

- Fig. 1. Front Elevation.  
Fig. 2. End Elevation.  
Fig. 3. Plan at A, Fig. 1.  
Fig. 4. Plan at B, Fig. 1.  
Fig. 5. Detail of Corner Post.

### BOOKS ON ARCHITECTURE AND HERALDRY.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—Would you please to be good enough to tell me through the Enquiries column which you consider the very best book to get, at a moderate price, in order to acquire a general knowledge of Architecture, also for Heraldry. I have seen Statham's "Architecture" and Cusson's "Heraldry" often mentioned. What do you think of them? Thanking you in anticipation,—Yours truly, Glasgow. W. REID.

Both the books you mention can be recommended. For further books that would serve as introductions to the study of Architecture see an answer to a correspondent on p. 319 in the BUILDERS' JOURNAL for December 21st, 1898. Another good book on Heraldry is Bentell and Aveling's "Heraldry: Ancient and Modern." Some articles on the subject are in hand for publication in our columns.

on the two brackets springing from the sill. It is intended to be framed out of 2in. stuff, with 1½in. cross rails and 1½in. panelling; the roof of ½in. oak shingles. The back should be hinged to give access for cleaning. Either teak or pitch-pine would look well, to be finished by oiling and varnishing.

**A Road-Makers' Exhibition.**—At the Building Trades Exhibition, to be held at the Agricultural Hall from April 26th to May 6th, a section of special interest to surveyors and sanitary engineers will be that organised by The Surveyor. The exhibits will relate to road-making methods and appliances, and, judging from the programme we have seen, these subjects will be illustrated in a very comprehensive manner. In connection with the Exhibition arrangements are to be made for meetings at which papers of interest to municipal engineers, members of local bodies, and others, will be read and discussed.



## Keystones.

**Mr. Ruskin** is eighty years old to-day.

**Plaistow's new Mission Church** of St. Thomas has been opened.

**The Local Government Board** hold more than 1000 public inquiries every year, and sanction loans for about £9,000,000.

**St. Luke's, Dublin**, is about to be closed for repairs and improvements. The roof is found to be in a very bad condition.

**Stafford Workhouse** is to be enlarged at a cost of about £2000. At the last meeting of the Board of Guardians it was decided to have plans prepared.

**A monument** erected in the Cathedral of Carthage to the memory of Cardinal Lavigerie, a former Archbishop of Carthage, was unveiled last Sunday week.

**Mr. Fred. Mitchell**, architect and surveyor, has removed to more commodious offices on the ground floor at 9, Upper Fountaine Street, Albion Street, Leeds.

**Perth and District Tramway Company, Limited**, have obtained permission from the Perth Police Commission to use the electric traction on their lines.

**A monument** in memory of Mr. Edward Stanhope, M.P., was unveiled last Thursday at Horncastle. The memorial is 32ft. high, and was erected by public subscription.

**Battersea Polytechnic** was opened in 1894, but the great hall, which formed part of the original scheme, has only just been erected. This was opened by Mr. Arthur Balfour last Friday.

**The Parish Church at Great Hampden**, Bucks, wherein John Hampden is buried, is to undergo a much-needed restoration. Of the £2000 required to preserve the ancient building considerably over half has been raised.

**A handsome pedestal**, provided by Mr. Charles Wertheimer for Bernini's bust of Cromwell, has been erected in the House of Commons; the memorial stands at the foot of the stairs leading to the Committee Room passage.

**Munificent Gift to Liverpool.**—It is announced that a Liverpool gentleman, whose name has not transpired, has bought a plot of land near the Custom House with the intention of erecting buildings to cost £20,000, chiefly for the use of sea-going people.

**New Market at Aberavon.**—In the recent competition for a new market at Aberavon, South Wales, twenty-two sets of designs were sent in, the ones selected being those of Mr. Frank S. Biram, of St. Helens, who has been appointed to carry out the work.

**A New Mission Church**, to accommodate 300 worshippers, has been erected at Graiseley, Wolverhampton. It has cost about £1000, including furniture and fittings. The builder is Mr. F. Skett, of Wolverhampton, and the architect, Mr. F. T. Beck, also of Wolverhampton.

**A light railway scheme**, promoted by the Penzance, Newlyn, and West Cornwall Light Railway Company, has received the approval of the Light Railway Commissioners. The object is to construct a line, to cost £150,000, to connect Penzance with the Land's End district.

**The Boadicea Statue.**—At the meeting of the London County Council on January 31st it was agreed to expend £1500 in the provision of a granite pedestal on the wall of the Victoria Embankment on which to erect the Boadicea statue group presented by Mr. J. I. Thorneycroft to the Council.

**A new pulpit** has been erected in St. Andrew's Church, Avonmouth, as a memorial to the Rev. David Wright, the first vicar of Stoke Bishop. It is substantially built of Bath stone with an elaborately carved border, and has sculptured figures in three of the panels, and an inscription in the fourth. The pulpit is from the design of Mr. Wood Bethell, of London, and it has been executed by Messrs. Hems, of Exeter.

**A municipal lodging-house** has just been opened in East North Street, Aberdeen. The building has cost £16,500. Accommodation is provided for men only, and the bedrooms, or cubicles, altogether number 252. The premises are well equipped, and fitted throughout with electric light.

**Three New A.R.A.'s.**—At a general assembly of Academicians and Associates, held on January 31st at the Royal Academy of Arts, Messrs. Arthur S. Cope, Alfred East (painters), and W. Goscombe John (sculptor) were elected Associates. Mons. Jules Breton was elected an honorary foreign Academician.

**A New Street for Cambridge** is proposed from the Great Bridge to Northampton Street. An excellent scheme has been prepared by Mr. Edwin Bays, architect, of London and Cambridge, by which persons in the neighbourhood of Bridge Street can obtain ready means of access to the Backs or Madingley Road. We hope the Corporation will adopt this scheme.

**Dangerous Structures.**—The following buildings or parts thereof have been reported to the Public Health Department as dangerous: 52, Fenchurch Street (stonework on third floor windows); 49, King William Street (studio on the top of the building); 30, Farringdon Street, and 16, Bear Alley, Farringdon Street (telephone pole on the roof); and 26, New Bridge Street (chimney-pot).

**The Improved Electric Glow Lamp Company Limited** were awarded a silver medal at the late Turin Exhibition for the excellence and efficiency of their lamps. The jury, in their report, stated that the gold medal would have been awarded to the Company if they had not been of the opinion that the price of the lamp, owing to the heavy duty, was too high for the Italian market.

**A new lighthouse** is to be erected at Barn Ness, on the Haddingtonshire coast, near Innerwick. The lighthouse is to stand 100ft. high, the district being a very low-lying one, and accommodation is also to be provided for lighthouse-keepers' houses and stores. The light will be a group, flashing three flashes in quick succession every half-minute. The beam of light of each of the flashes will be 78,000 candle-power.

**Water as a Motive Power.**—The Highland Water Power Company is applying to Parliament in the coming session for a Bill which has for its object the development of industries in the North of Scotland by means of water power. Another new enterprise in which water power is to be employed is the establishment of factories at Geneva for the production of carbide of calcium by utilising the enormous water powers of the Giffre River at Geneva.

**A Reconstructed Music Hall.**—The Bedford Music Hall, in High Street, Camden Town, has been entirely rebuilt during the past six months, and is to be opened very shortly. The auditorium has a depth of 65ft. and clear width of 56ft. There are no columns to obstruct the view of the stage, and some elegant features mark the Louis Quatorze embellishments. A sliding roof will assist ventilation, and the lighting is by electricity, with a reserve of both gas and oil.

**The Proposed Free Library at Wolverhampton**, which is to be erected as a memorial of the Diamond Jubilee, will cost about £14,000. The lowest tender for the work considerably exceeds the original estimate, and the subscriptions in hand or promised fall considerably short of the required amount. At a meeting of subscribers it was decided to make a further appeal for contributions. The accepted designs for the new building are by Mr. H. T. Hare, of London.

**Sculpture for South Africa.**—Mr. Tweed, the sculptor, is preparing a series of panels representing Major Wilson's last stand at the Shangani River. These are to be placed amid the ruins of Zimbabwe, in South Africa. The panels are 14ft. long by 7ft. high, and give a vivid representation of Wilson with his men leaving camp. Another important piece of work Mr. Tweed has in hand is a statue of Mr. Rhodes, 12ft. high, which is to be erected in Bulawayo.

**The Manchester Sewage Problem** seems now finally on its way towards solution. On last Wednesday the Manchester City Council authorised the Rivers Committee to take all necessary measures for preparing the plans and estimates necessary to effect the scheme recommended by the experts. The bacterial system is the scheme approved of, with double contact beds. The committee have secured the services of Mr. Baldwin Latham to prepare the plans and estimates.

**Haverfordwest Infirmary** has been reopened, after undergoing extensive alterations and additions. A storey has been added to the centre block of the building, and the extra space thus provided has been devoted to an operating theatre, which has a good overhead light, and is reached by a hospital lift; three bedrooms, a large sitting room, and two bathrooms, &c., for the staff. The new portion of the infirmary is estimated to have cost about £1000, and other alterations have cost another £200.

**A remarkable model railway** was exhibited at a recent conversation at the Royal Institution. By the system shown, it is claimed to be possible to attain a speed of 200 miles an hour. This is done by a system of inclined planes, which are automatically brought into existence by lifting up the rails by means of hydraulic pressure, as the carriage passes along them. The hydraulic pressure is applied by rams acting vertically up the pillars which support the carriage like a double pannier on a donkey's back is balanced on either side of the rail.

**The Expansive Force of Water.**—The pedestal of the memorial to the Emperor Alexander II., in the Kremlin, at Moscow, has become cracked. It appears that for convenience of polishing the outer face, the granite block was bored through its centre. Before the pedestal was placed in position, this hole was plugged up at the ends with cement, and filled in with hot sand in the middle of its length. The damp, however, appears to have penetrated in spite of these precautions, and with the first frost the expansive force of the freezing water cracked the huge mass from top to bottom. It is feared that the pedestal will have to be renewed at a cost of some £5000.

**A new picture**, intended for the decoration of the Royal Exchange, has been completed by Mr. Stanhope Forbes, A.R.A. The picture, which was commissioned by the Sun Insurance Company, represents the banks of the Thames during the Great Fire of London, when the riverside citizens moved their belongings to boats and barges, out of reach of the flames. It is an immense canvas, the lower part of which is crowded with figures of fugitive men and women, some already in the boats and others hastening down the stone steps leading to the water. High up on the steep bank are gabled houses, burning fiercely, and a great cloud of purplish smoke drifts across the river and obscures the sky.

**London Water Supply.**—In the course of his evidence before Lord Llandaff's Water Commission, Sir A. Binnie gave his opinion on the Lea as a source of supply. Looking to the future demand upon the East London Company and the probable increase of population, the Lea was, he said, for all practical purposes, exhausted. To make new reservoirs would be only waste of money. So near were they to the end of the possible supply from the Lea that it would be better to go to some other source of supply. He had come to the conclusion that in every dry season for many years to come the East London Company would have to be assisted by the Thames, even though there was no increase in the population. Colonel Lockwood, the Chairman of the East London Waterworks Company, in the course of his examination, admitted that his Company was unable to keep up a constant supply to its customers without calling upon other companies for assistance. But they were unwilling to sell their undertaking to the London County Council, whom they regarded as the Jack Cades of the nineteenth century.



## Correspondence.

### THE HULL LIBRARY COMPETITION: A WORD TO COMPETITORS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—The present mode of forwarding designs, without motto or distinguishing mark, has some disadvantages, as I have experienced in this instance. With my plans another competitor's report has been returned. They all bear the same number, put on by the same hand.

I have complained to the Town Clerk, but he repudiates all responsibility, and declares the alteration "was certainly not made by anyone in my office." It is too bad that competitors should be the victims of such carelessness. May I ask, with your kind indulgence, the competitor (who has mine) to exchange reports with me?—Yours faithfully,

A. H. GOODALL.

14, Market Street, Nottingham.

### LONDON DOORWAYS: A CORRECTION.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—With reference to the article published under the heading of "London Doorways" in your issue of January 25th, I had thought that it was well known to most architectural students that Mr. Halsey Ricardo was the author of the very original design of the house in Great George Street, and not Mr. Leonard Stokes. If my memory serves me it is not a residential house as stated, but used as offices. With reference to the doorway in Great Titchfield Street, this is not an addition, but was built at the same time as the rest of the house, and took a rather more elaborate form than the rest of the building because the sculpture was a special donation to it. The architect is Mr. Beresford Pite.—Yours faithfully,

T. FRANK GREEN.

St. John's Wood, N.W.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—I regret that I committed an inaccuracy in saying that I believed Mr. Leonard Stokes to be the architect of No. 8, Great George Street. I was aware that the house was let in offices, but did not mention the fact as I was dealing with the entrance doorway and not the internal arrangements.—Yours faithfully,

RUPERT C. AUSTIN.

London, W.C.

[Our thanks are due to Mr. Green and also to W. G. (London, S.W.) for kindly pointing out these inaccuracies. We much regret that they should have occurred.—ED.]

### THE REGISTRATION OF PLUMBERS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—I think the present time is premature for the registration by law of men—connected with the building trade—to carry out any duties whatever relating to sanitation. I contend it would be far better that:

(a) Urban and Rural district councils throughout the United Kingdom shall be compelled to adopt the model by-laws or such like.

(b) All work in connection with the same should be enforced by law.

(c) The officers, for the future, of the said sanitary laws should be persons qualified by examination, also they should be solely appointed, and their salaries paid wholly by the Government.

Without the above (a, b, c) how can good results be expected in this age of competition?

—Yours truly,

S. F.

Crediton.

A Presbyterian Church to seat 700 is to be erected at Inverness. Plans of the edifice were prepared by Messrs. Ross and Macbeth, architects, Inverness. At the back will be situated a vestry and a small hall.

## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,

February 8th, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### An Ugly Bridge.

REFERENCE has been made more than once in our columns to the efforts that are being made by architects to secure a revision of the architectural treatment of the new Vauxhall Bridge, which, if erected according to the design that has been accepted by the London County Council, will be an offence to everyone of any artistic sensibility. Mr. H. Heathcote Statham, in a letter to the "Times," essays the difficult task of arousing the interest of the general public in the question. He points out how differently these things are done in France. The French Government are now constructing a new bridge over the Seine at the Champs Elysées, the "Pont Alexandre III." The engineering structure is by two engineers of the "Pont et Chaussées" service, M. Résal and M. Alby; but with them are associated two well-known and accomplished architects, M. Victor Cousin and M. Cassien-Bernard, who are jointly responsible with the engineers for the general design of the bridge and jointly credited with it. The sculptural decorations and its approaches are to be executed by several of the most eminent French sculptors of the day; and even such a minor detail as the design for the lamp standards has been entrusted to one of the ablest of the younger French sculptors, M. Gauquié, whose "Clairon Monument" formed a central object in last year's Salon. That is what they do in Paris. In London, says Mr. Statham, the designs are left in the hands of an engineer who has never studied design in the architectural sense at all, and of any nameless person whom he may hire to do hack-work on the design.

Sir A. Binnie As might be supposed, Sir A. Binnie is not quite of Mr. Statham's opinion. In fact, he went so far as to declare, in reply to a "Pall Mall Gazette" interviewer, that the new bridge will be one of the handsomest over the river. It seems to have been by a gradual process of evolution that the present design came into being. Sir A. Binnie stated that when the construction of the bridge was first resolved upon the Committee of the Institute of British Architects submitted to the committee of the County Council certain suggestions and sketch designs. The engineer was then instructed to prepare designs. Before that he had already prepared about a dozen. At first it was intended to build a steel bridge, with masonry piers, but the consensus of opinion in the Council was in favour of a masonry design, so Sir A. Binnie went forth to study the best masonry bridges on the Continent. He came home primed with ideas, and prepared his design, which he then submitted to Messrs. Waterhouse and Monckton, representing the Art Committee of the R.I.B.A. These gentlemen, said Sir Alexander, were exceedingly pleased with the design, though they made certain suggestions in regard to it.

The suggestions were carried out in part—not entirely—but they related to matters of quite minor importance. It is probably here that the difference between Sir A. Binnie and his critics comes in. From the further remarks he made on matters of detail, it seems not unlikely that some of the points the County Council's engineer considers to be mere matters of taste, and of very little consequence are just those which his architectural critics regard as of vital importance.

Sir Edward J. Poynter's Opinion.

THE President of the Royal Academy says ditto to Mr. Statham. Writing in the "Times," he expresses the pleasure with which he has read Mr. Statham's letter. "What he says," writes Sir Edward Poynter, "has wanted saying for a long time. Of all the forms of folly which desolate our great City the hopeless attempt to make a work of engineering pose as architecture has, perhaps, most to answer for. If there is a genuine desire to make the bridge a handsome structure let money be spent on it, and let it be an architectural work, with an engineer, if necessary, to see to the solidity of its structure and foundations, or let us make no pretence in the matter, and resign ourselves to the plain hideousness of the girder or iron tube on the cheap; but I decline to believe that we are so poor as to make this a necessity."

A Colossal Monument. THE torso, of which an illustration is here given, is a study for the colossal figure of the Crucified Christ, which Messrs. Harry Hems and Sons have been commissioned by Lord Aldenham of Aldenham to execute for the high altar screen at St. Albans Cathedral. The stone from which the figure is to be



MODEL OF TORSO FOR HIGH ALTAR SCREEN ST. ALBANS ABBEY.

carved is a huge block of yellow magnesium limestone, raised in Messrs. Lindley and Sons' quarries at Mansfield, weighing 9 tons 18 cwt., and containing 165 cubic feet. This is the largest stone ever delivered in Exeter; by some it is believed to be the largest stone ever quarried in England.



### In Praise of British Art.

PROFESSOR VON TSCHUDI, Director of the National Gallery in Berlin, has just been paying this country a handsome tribute by talking of "the present overwhelming influence of England upon the development of Continental Art." Professor von Tschudi ascribes the uninterrupted continuity of the growth of taste and Art in Great Britain to the fact that our social distinctions have not experienced the breakdown and chaos created by the French Revolution. Artists in this country have always had private patrons of wealth and discrimination to encourage them to the highest efforts; and with the help of the patron painters have painted their best. Professor von Tschudi does not believe in the heterogeneous mass called "the public." The heterogeneous mass has, since the French Revolution, influenced Art in France; but in England "the clergy and polite society have, in a sense, been the only begetters of the artist and his work." Whatever the degree of truth there may be in these theories, it is gratifying to our national pride to find that so eminent a foreign critic is so strong an admirer of the British school.

### Wanted an Architect.

As long ago as last October the London County Council issued advertisements for the appointment of architect to the Council, the position being rendered vacant by the retirement of Mr. Blashill, who has passed the age limit. None of the candidates who then applied had, in the opinion of the General Purposes Committee, the necessary qualifications for so important a position; and, as we stated last week, the Council had to ask Mr. Blashill to retain his position for a while, which that gentleman consented to do. The Council has now decided, on the recommendation of the General Purposes Committee, again to issue advertisements for the appointment, and to increase the salary attached to the office from £1500 to £2000 a year. It is hoped by thus raising the salary to receive applications from gentlemen in the architectural profession from among whom the committee may feel justified in making a selection. The salary is to carry with it no pension rights. The enhanced salary does not seem extravagant seeing that during the last ten years the work of the architect's department has much increased.

### Public v. Private Slaughter-Houses.

THE London County Council has declined to undertake the establishment of municipal slaughter-houses, as recommended by the Public Health Committee. At the meeting of the Council on January 31st the question was introduced by a resolution submitted by the Public Health Committee that, as a first step towards ensuring the proper inspection of meat, private slaughter-houses should cease to exist in London, and that butchers should in substitution be afforded such facilities as are necessary for the killing of animals in public slaughter-houses to be erected by the Council. The question was scarcely discussed on its merits; various side issues intervened, and the Council shelved the whole matter by the simple expedient of deciding to proceed with the "next business." Whereat the butchers rejoice, and sanitarians lament.

### Abattoirs on the Continent.

It is an open question whether the establishment of municipal abattoirs would be inimical to the interests of the butchers. But looking at the matter from the point of view of the public health and convenience, it is to be regretted that this country, which has so often taken the lead in sanitary matters, should in this matter be content to lag behind most Continental nations. A series of articles in this journal recently described the public abattoirs of Paris, and all over the Continent the system is becoming more and more general. Mr. Thomas Blashill, the architect to the London County Council, has recently visited a number of municipal slaughterhouses in Germany, and in an interesting report to the Council he points out the admirable character

of the arrangements that are made for health and cleanliness. It is significant that in many places the butchers themselves prefer the public system, as it saves them trouble and expense.

### "Improvements" in Florence.

A NUMBER of English artists and people of artistic sensibilities have been endeavouring to check the wholesale destruction of ancient buildings in Florence. Their action in the matter has won the thanks of the Italian Society for the Protection of Ancient Florence, but it has drawn criticism from others, on the ground that those who live in England have no right to interfere with other countries, while they allow similar acts of vandalism to be perpetrated at home. To this *tu quoque* Sir Edward J. Poynter replies in a long and interesting letter in last Saturday's Times. He points out the wide difference in their relation to Art between two such cities as London and Florence. Moreover he contends that he and his friends would gladly stop acts of vandalism in London if they could.

### The Home of Art.

SIR EDWARD writes of the lovely city on the Arno with the enthusiasm which she inspires in all artistic souls: "Florence," he says, "has until recently existed almost intact from the times when the work of the artisan and builder took everywhere and instinctively a more or less artistic form, but nowhere with such high and precious distinction as in this favoured city; when every street had the dignity and even grandeur that comes of a sense of proportion and style, and there was hardly a house of importance that was not adorned with some distinctive and characteristic feature—often a gem of decorative workmanship from the studio of a great artist, and such as only a Florentine of the Renaissance could produce; so that the whole city bore the impress of their serious Art. No pains or expense were too great for the citizens of Florence to lavish on their beloved city. And Florence is not only a gem in itself, but with its limpid atmosphere and its exquisite surroundings—its mountains, its villas, and its gardens—it is in a setting unsurpassed by any city of the world. It is hard to say whether to wander through its streets and public places, among its palaces and churches, or to look down from the hills around on its domes and towers, its river and bridges (its unique Ponte Vecchio), is the greater exaltation to the spirit. No one need wonder that with these attractions Florence should be a centre of such interest to the cultivated mind of whatever nationality that a cry of protest arises against the unskilled and thoughtless meddling which, in the name of science and progress, would deprive it of its unique character."

### What the New Street will do.

AN interesting article in this month's "Contemporary Review" deals with the subject of London Improvements. The writer is Mr. Shaw-Lefevre, L.C.C. Speaking of the new street which the County Council are to construct between Holborn and the Strand, the writer says:—"There can be no doubt that the new street will be one of the greatest improvements ever effected in London. It will make a splendid new artery between the North and South of London, and the wide sweep of the crescent will produce a most striking architectural effect. The widening of the Strand for some distance to 120ft. will also be a great feature. The Church of St. Mary-le-Strand, with its exquisite classical steeple, will stand out in the centre of the widened street, making a dignified approach to the City. If I am right in supposing that most valuable buildings will be erected on the new frontages, it is clear that the scheme, both in demolition and building, will afford employment for labour on a very large scale. The labouring people will also be greatly benefited by the clearing away of the unsanitary slums through which the new street will pass, and by the erection of new houses for them on the best sanitary principles at no great distance."

### Moving Pavements.

THE latest thing in locomotion is the moving pavement. This is not a rival of the bicycle or the motor-car, but if you are content to travel at the rate of three or four miles an hour, the moving pavement furnishes an easy and agreeable means of transport. Upon a platform raised somewhat above the street level two wooden tracks run side by side, one at the rate of three, the other at the rate of five miles an hour. The paths themselves are built of planks of short length, so ingeniously jointed together as to enable a sharp curve to be taken; and these planks rest upon iron rails, to which motion is imparted by revolving wheels below. The system was tried last week at St. Ouen, on the Seine, and it is to be employed at the Paris Exhibition next year to transport visitors from point to point.

### A Judge's Opinion of Builders.

JUDGE LUSHINGTON's experiences of builders have not been of the happiest. But that fact hardly justifies the sweeping generalisation with which, if he is correctly reported, he recently condemned the whole trade. The case was that of Davis v. Day, in which an architect sued a builder for slander. Judge Lushington said "the case was a most sordid one. Perhaps his view of matters might be regarded as a hard one, but he did not think builders should be considered by ordinary standards. He did not think he ever sat at that court without having malpractices of builders brought before him." Perhaps a wider acquaintance with builders would convince Judge Lushington that his remark about "ordinary standards" is as unfair as it is unjudicial.

### Street Advertisements.

WE refer elsewhere to the architects' memorial addressed to the London County Council on the subject of illuminated advertisements. This has induced a correspondent of the Times, who writes from Lincoln's Inn, to call attention to another favourite method of disfiguring our streets; this is the practice of advertising by means of huge gilt letters hung across the front of buildings without regard to architectural lines. "These abominations," writes the correspondent, "the worst of which are written in text hand with a French flourish sprawling diagonally over the façade, are an eyesore at all times, and go far to mar the pleasure of a walk in the streets of London. If the County Council can be induced seriously to take up this matter they will earn our gratitude no less than by abolishing or mitigating the evil of illuminated signs." So they would; but not the gratitude of the tradesman, who feels that he must advertise or perish.

### The L.S.B. and its Architect.

A QUESTION of some interest to architects is at present engaging the attention of the London School Board. The Works Committee of the Board has called on Mr. H. Bradfield, assistant architect for repairs, to send in his resignation. This he has refused to do, and the Board, after discussing the matter in full conclave, has declined to enforce the dismissal, and referred the matter back to the Committee for further consideration. The circumstances which led to this rather curious position of affairs are these: Five years ago Mr. Bradfield reconstructed the drainage at the Boards' Brentwood Industrial School. Last summer an outbreak of illness occurred at the school, and Mr. Bradfield was sent down to report on the drainage and sanitary arrangements. He reported that no alterations were required. The medical officer was not satisfied, and therefore the Board sent down Mr. Peacock, their sanitary surveyor, who reported serious defects in the drainage. Mr. G. A. P. Cuxson, F.S.I., A.R.I.B.A., who was called in to make an independent inquiry, confirmed Mr. Peacock's report; hence the Works Committee's demand for Mr. Bradfield's resignation. That gentleman, in support of his refusal to resign, produced further expert evidence, viz., that of Professor Corfield, who stated that the drainage and sanitary arrangements had been well planned and carried out.



## Professional Practice.

**Aberdeen.**—Plans of a large house to be erected presently at Kildrummy for Mr. James Ogston, of Norwood and Kildrummy, have been prepared by Mr. A. Marshall Mackenzie, A.R.S.A., architect, Aberdeen. The new mansion is to be built of cream-coloured freestone, quarried on the spot. It will be in the Tudor style of Architecture, and in several respects will thus harmonise with the old castle, near the ruins of which it is to be built. The new house will have mullioned and transomed windows, numerous gables and projecting oriel windows, and lofty chimney stalks. The whole building is to be lighted by electricity, and a dam will be formed to intercept water as a motive power for driving the dynamos. New stabling also will be erected, as well as a new lodge at the entrance-gate.

**Blackhead.**—A new lighthouse and fog-signal station is being erected by the Northern Lighthouse Commissioners at Blackhead, about three miles north of Portpatrick Harbour, on the Wigtownshire coast of the Irish Channel, and it is now in an advanced stage, having reached a height of 42ft., to which has still to be added 3ft., of granite and the lantern. It is built with blue whinstone, and the facings are of grey granite and red sandstone. The flat iron roofs of the various buildings will be covered with Val de Travers and concrete. Mr. William Waddell, has charge of the contract for Messrs. John Adam and Son, of Glasgow.

**Bristol.**—The Crown Inn, Staple Hill, of which a perspective view and plan are here given, is to be erected at Staple Hill, near Bristol. The materials used will be Cattybrook red facings and Ham Hill stone dressings on ground floor, with tile hanging plaster and timber to the upper floor; roofs to be covered with red Broseley tiles. The bar and fittings throughout will be of pitch pine. Messrs. Walter S. Paul and James, of Bristol, A.R.I.B.A., are the architects.

**Dublin.**—New National Schools, to accommodate 500 scholars, are being erected in Lower Sherrard Street. The new building will consist of a single story, so that all the rooms are on one floor. The walls are constructed of breeze concrete; the dressings of the openings and the plinth, course-quoins, &c., are of brick, red facing brick being used on all exposed portions. The intervening space will be covered with pebble dashing, which will form an agreeable contrast to the brickwork surrounding it. Internally the roofs will be open to half their height, the timber principals being exposed and stained. The lower part of the walls will be lined with wainscot, the upper portion being plastered. Due provision has been made for efficient sanitary fittings and for ventilation and heating. An ornamental turret will surmount the main roof over the centre of the building; this will serve as an outlet ventilator for extracting the vitiated air from the various class-rooms. The contractor for the whole work is Mr. E. Farquharson, of Jones's Road, and the architect Mr. W. M. Mitchell, E.H.A., of Leinster Street, under whose superintendence the building is being erected.

**London, S.W.**—The London County Council have given their consent to the formation of a new street, 50ft. wide, and nearly a quarter of a mile long, starting close to St. Paul's Schools at West Kensington, and terminating opposite the house of the late Sir E. Burne-Jones. The street will be known as Fitzgeorge Avenue, and will be occupied on both sides of its entire length by blocks of residential flats. The contract for the whole operation is being carried out by Mr. Henry Lovatt, from the designs of Mr. Delissa Joseph, F.R.I.B.A.

**Westminster.**—The Institution of Mechanical Engineers' new building at Storey's Gate, Westminster, will be opened to-morrow

for a meeting of the Institution, but we understand the formal opening will not take place for some time. It adjoins the new premises of Her Majesty's Office of Works, which it rather overshadows by its wide and lofty portico. The building is in the Renaissance style, and the architect is Mr. Basil Slade. It has taken about three years to erect, and is reported to have cost £30,000. It stands just inside St. James's Park, on a grand open site, and is within a few hundred yards of the Institution of Civil Engineers. The exterior is of dressed Portland stone and red brick. Over the main entrance is a handsome portico with Corinthian columns. The door is approached by a short flight of steps. The interior is lavishly adorned, and supplied with modern comforts. The chief wood employed is Austrian oak. The tea and smoking room is very ornate, marbles being displayed in the greatest profusion. The most noticeable wall decoration is Mexican onyx panels. The pilasters are of coloured marble with caps and bases of statuary marble. A few feet above the level of the street is a spacious lecture theatre, which occupies the height of two floors. A grand oak staircase, with elaborately carved balusters, Persian-red walls, and a dado, leads to



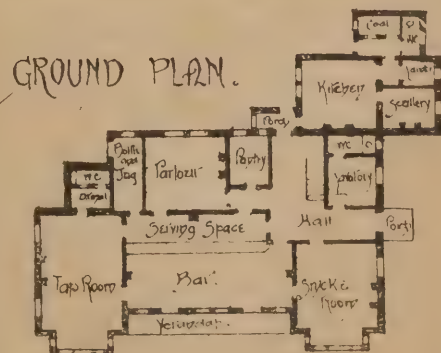
the library, the secretary's office, and the reading room. The library, which occupies almost the whole of one floor, and is of fine proportions, will contain unrivalled stores of publications dealing with mechanical engineering. There are the latest mechanical devices in the building, electric clocks, electric lights, and an electric lift, and the newest apparatus for bringing in pure air. There is also a large room for the storage of past and present records. Throughout the whole building is a perfect arrangement of voice tubes and telephones, securing communication between every part of it, and there are also separate lifts for passengers and goods, and one from the refreshment department to the several floors. All the lighting and power used on the premises is electrical. The Plenum system of ventilation has been adopted. All the air will be drawn from St. James's Park, and after being washed by passing through mats over which a constant stream of water is kept flowing, and warmed over a radiation coil, it will be distributed throughout the building. Powerful electric fans suck in the air and drive it out when vitiated, and these are so arranged that the whole atmosphere of the various rooms can be changed every few minutes. Altogether the new house of the Institution of Mechanical Engineers will be one of the most comfortable and completely equipped of similar buildings.

**Wolverhampton.**—The Building Committee of the new Wesleyan Chapel, Darlington Street, Wolverhampton, have selected the plans of Mr. Arthur Marshall, of Nottingham, who is also the architect of the new Wolverhampton Workhouse. The sitting accommodation will be 1250. The total cost is £9000.

## Views and Reviews.

### FOR THE ARTIST AND CRAFTSMAN.

In the February number of the "Architectural Review" Mr. Philip A. Robson writes of St. David's in a manner that will probably make many of his readers determine to spend a summer holiday in this secluded spot, which has the happy and unique distinction of being a cathedral city that has no railway station. Mr. Walter Millard, in a well-illustrated article, gives the reader a good idea of the character and scope of the work of Gilbert Scott the younger. Mr. H. B. Walters brings to a conclusion his interesting studies of the Architectural remains of Cyprus, and



THE CROWN INN, STAPLE HILL, NEAR BRISTOL,  
WALTER S. PAUL AND JAMES, ARCHITECTS.

Mr. A. E. Street contributes a well-written appreciation of George Price Boyce. The curiously interesting question of the authorship of "John Thorpe's Book of Drawings," now in the Soane Museum, is discussed with much acumen by Mr. J. A. Gotch, who comes to no uncertain conclusion; if the draughtsman was not John Thorpe, he was—well, another man of the same name. The magazine is produced in the sumptuous style its readers have learned to expect, but perhaps the feature which many will chiefly appreciate is the photogravure plate illustrating David



Street; this forms the fifth of the series of drawings of "Disappearing London"—a series which promises to be not merely of passing interest, but of permanent value.

### A CONTRIBUTION TO CHAOS.

A volume from the pen of Count Leo Tolstoy, the Russian philosopher and novelist, will necessarily attract a wide interest; and his latest book, "What is Art?" will win an especial attention both from the challenge indicated in its daring title, and from the fact that the author has elsewhere told us it must, perforce, be the last considerable work to which destiny has ordained he shall ever set his hand. The scope of this book prompts the surmise that the author would consider it to be not only his last but his greatest achievement. It is likely, however, that posterity may decide otherwise. Leo Tolstoy has from time to time brought under the eyes of the world many of its gravest social problems and its most incomprehensible enigmas, illumined and transformed by the searching light of that wide-reaching generous humanity which constitutes the central impulse of all his teachings, but these principles cannot reveal to us the true path through those realms of controversy in which the enquirer after the abstract nature of Art so commonly finds himself involved.

That the attitude of antagonism to the generally accepted tenets of Art which is promised by the title of the book, is indeed fulfilled in its pages, but alas, not only must the principles and the conclusions deduced appear throughout wholly repugnant to the executant artist of all denominations, both individually and in bulk, but they constitute a daring and vigorous ratification of precisely those two most intolerable beliefs of the untutored and unthinking critic, who holds as good Art just only that thing which may hap to touch or vibrate his own sympathies, who would estimate all Art by the test of his own moral bias, setting the ethical value of a picture or a poem before the æsthetic; and who would, in short, acknowledge nothing to be Art which does not awaken some tender memory or illustrate in some way the articles of his religious belief. There is not surely a more pernicious, as there is no commoner, fallacy than this one. Here is an analogy that will point the absurdity. Upon the same principle of reasoning any one would be entitled to insist that an apple was not an apple because he did not like the taste of it, or because he believed it wrong to eat of the fruit.

It is perhaps true to say, however, that Tolstoy's book hardly lends itself to so rude and summary a method of dismissal as this. There is scope for speculation of an absorbing and entrancing interest in the consideration of the question how far, and to what degree, and latent impulse of worship is essential to great Art. None can seriously deny the chastening and perfecting influence of this impulse upon Art, and Count Tolstoy has much to say in amplification and illustration of it; but he will be considered by most people who are familiar with this idea to have pressed his conclusions beyond the limits which unprejudiced discretion would impose. In a grand enthusiasm he has been led to identify all worship too closely with Christianity. Thus, while he makes use of the word "worship" with the same wide significance which we find accorded to it in the pages of Mr. Ruskin; instancing it in a particular picture of a lifeboat hastening in a heavy storm to the relief of a wrecked steamer, and in the pictures of Millet and others, "which represent the hard-working peasant with respect and love," his warped point of view fails to perceive this same quality in the melting, chastening beauty, of the Greek sculptures. This is how Count Tolstoy would have us regard the ancient Greeks: "A small semi-savage slave holding people who lived 2000 years ago, who imitated the human figure extremely well, and erected buildings pleasant to look at," while elsewhere he refers to the "rude, savage, and for us often meaningless works of ancient Greeks." This method recalls passages from the writings of Mr. Max.

Nordau. But Count Tolstoy has many similar heresies, notably upon the subject of music, to offer us in establishment of his central texts, which may be summarised thus in his own words: "Great works of Art are only great because they are accessible and comprehensible to everyone," and "A good and lofty work of Art may be incomprehensible, but not to simple, unperturbed peasant labourers (all that is highest is understood by them)—it may be, and often is, unintelligible to erudite, perverted people, destitute of religion."

"What is Art?" By Leo Tolstoy. Translated from the Russian by Aylmer Maude, with an English preface by the author. Brotherhood Publishing Company.

## Under Discussion.

### EDINBURGH ARCHITECTURAL SOCIETY.

Wednesday, the 1st inst., was the opening night of the session. Mr. A. Lorne Campbell, the new president, opened the meeting with a short address. In reviewing the very healthy state of the Society, he touched on the recent successes in the R.I.B.A. Scholarship Competitions attained by members and recent winners in the Society's measured work and prize competitions. Mr. W. A. Mellon had won the Soane, Mr. J. Hervey Rutherford the Pugin, and Mr. J. T. Stewart the Owen-Jones, while Mr. R. Traquair had been third in the Pugin. Mr. J. Edwin Forbes then read a paper on the Abbeys of the Stewartry of Kirkcudbright, which touched on Glenluce, Sweetheart, and Dundrennan Abbeys, Includin College, and Caerlaverock Castle. The paper was profusely illustrated with lantern slides, in connection with which the Society's new plant made a successful debut.

### MINERAL OILS.

At the monthly meeting of the Leeds Association of Engineers, Mr. B. Holgate, F.G.S., gave a paper on "Mineral Oils." What are known as mineral oils, he said, were really of animal or vegetable origin. This was demonstrated by the hydro-carbons in their composition. From time immemorial paraffin had been known. It was found in every quarter of the globe, and was not confined to any particular strata of the earth's surface. In 1859, when this oil was first struck in Pennsylvania, it first became an article of commerce. Mr. Holgate described the various processes by which foreign ingredients are eliminated, and the methods of distillation and testing. If intended for lubrication, mineral oil should always be blended with animal or vegetable oil, the proportion and quality of each depending on the kind of machinery lubricated. Referring to the Act of Parliament by which the flash point of lamp oil was raised, the author said that, however high the flash point, without proper care oil lamps would necessarily be a source of danger. To ensure safety, it was essential to have the proper size and quality of wick.—A discussion followed.

### BUILDING DIFFICULTIES.

The usual meeting of the Glasgow and West of Scotland Technical College Architectural Craftsman Society was held at the rooms 204, George Street, on Friday 3rd inst., Mr. W. H. Baxter, vice-president, in the chair. There was a good attendance. A discussion was opened by Mr. Isaac Low on "Building Deficiencies." The author treated the subject principally from a craftsman's point of view, and in a manner to raise discussion, his headings and remarks being of such a practical nature as to call forth the concurrence and criticism of the other members, who, by each taking up the points which applied particularly to his vocation, whether as architect, measurer, clerk of works, or joiner, enabled the members to consider the question from many standpoints, and so get the greatest practical value from this exchange of ideas. Among the many heads for discussion given by Mr. Low may be mentioned—insufficiency of plans, defects in

design, an architect's responsibility, cheap work, technical training of all craftsmen as well as architects, impossible mouldings, specifications, &c. The brisk continuance of the discussion taken part in by many of the members was ample evidence of the good selection, and the engrossing interest, of the points so carefully given by Mr. Low.

### THE GRANITE OF DARTMOOR.

At Torquay Natural History Society on January 30th Mr. A. Somervail lectured on Dartmoor granite. Geologists at one time believed that granite was the oldest of all rocks, and that it was the foundation upon which all other rocks rested. But this idea was no longer entertained, and it was known that granite did not necessarily form the foundation of other rocks at all. It was of all ages, some being very ancient, and some very modern. In this country there were granites as old as the earliest rocks, and some comparatively new. Dartmoor granite was an igneous rock of plutonic origin that had been forced to the surface in a molten state, and had gradually cooled to its present solid condition. Chemical analysis showed it was mainly composed of silica, no less than 69.64 per cent. of it being of that substance. The remainder was made up as follows:—Alumina, 17.35 per cent.; iron, 1.73; calcium, 1.40; magnesia, 0.21; potash, 4.08; soda, 3.51; water, 1.09. Its mineral composition was:—Felspar, 60 per cent.; quartz, 25 per cent.; schorl, 10 per cent.; and mica, 5 per cent. There were many varieties of granite on Dartmoor both as regarded mineral composition and colour. A large part of the lecture was devoted to consideration of the age of the Dartmoor granite. This, the lecturer considered, was somewhere between that of the Devonian and Culm formations and that of the Permian group, although it could only be approximately fixed. The Dartmoor granite had always been a problem to geologists, and it so remained in many respects.

### ARCHITECTURAL PHOTOGRAPHY.

An illustrated lecture on "Architectural Photography," the joint production of Messrs. Edward G. and Fred E. Turney and E. I. Grove, was given recently at the Devonport Camera Club.—Mr. E. G. Turney read the lecture.—At the outset it was insisted that interiors are not more difficult to photograph than the general run of subjects, provided certain rules are observed. Backed or other antihalation plates are an absolute necessity. The camera should have a swing back fitted with a spirit level, so that it may be adjusted in a perfectly vertical position. Nothing looks worse than columns, which should be parallel, converging either at the tops or at the bases. If, however, columns do not appear quite vertical, the fault must not of necessity be attributed to the camera, for in many cathedrals, especially at Salisbury, the columns have been thrust out of the perpendicular by the weight of roofs and towers. A rapid rectilinear lens is almost, but not quite, a necessity. If a single lens be used, it should not include too wide an angle, otherwise curvilinear distortion would result. On the question of exposure it was suggested that the average exposure in fairly lighted cathedral interiors when using a plate of medium rapidity, and an aperture of F 20 is about twenty seconds. It is better to err, if at all, on the side of over-exposure. An under-exposed negative of an interior is an abomination. If visitors stand for any length of time in the view, the best plan is to hold the focussing cloth or a hat close to the lens, but not touching it. Capping the lens or closing the shutter might cause a double image. The slipping of the tripod on polished stone floors is easily prevented by the use of pieces of cork or india-rubber on the spikes. The plates used by the lecturers were Castle, Paget XXX., and Ilford special rapid. The results obtained on the latter were generally such as to encourage the use of fast plates for interior work, as the saving of one-third the exposure is of considerable value if many views are taken. The lecture was admirably illustrated with about ninety lantern slides.



## MEDIÆVAL CHURCHES.

The fourth sessional meeting of the East of Scotland Engineering Association was held last Wednesday at 5, St. Andrew Square, Edinburgh. Mr. J. D. Gibson was in the chair. The Chairman referred to the appointment of Mr. John Young, president of the Association, as borough surveyor for the town of Ayr, and expressed the congratulations of the Association together with their regret at losing Mr. Young. Mr. H. F. Kerr, A.R.I.B.A., then delivered a lecture on "Some Great Mediæval Churches and their Construction." He said the great churches of mediæval times had been admired both by the practical and the artistic mind. The former had room to ponder the scientific skill with which these early builders covered vast spaces with great vaults, the whole supported on a minimum of solid piers; the artist revelled in the equally marvellous manner in which every feature—and every feature was a constructional item—was treated so as to fully satisfy the imagination; the result being universal admiration and respect. The division of these churches, almost invariably cruciform in plan,

into aisles covered with vaults was fully entered into, and the difficulties met with in early vaults of barrel pattern, and the solutions of these were pointed out. The aim of the early builders was to light the nave by windows above the great arcade and beneath the stone ceiling, without rendering precarious the stability of the fabric. The development to this end was traced from barrel vault, through ground vault, to rib vault and pointed vault. The construction, the features, and the decoration of these buildings were fully indicated by chronological diagrams and views, about eighty lantern slides being shown.

## THE BACTERIAL TREATMENT OF SEWAGE.

The third of the Cantor lectures on the bacterial treatment of sewage was delivered by Dr. Rideal at the Society of Arts on Jan. 30th. The lecturer devoted much attention to the peculiarities and mode of life of the various organisms, anærobic and ærobic, which under given conditions carry out the

complicated methods of sewage purification. These methods, Dr. Rideal pointed out, depend on an orderly natural sequence in the bacterial changes, and he noted that any mixing or confusing in the orderly artificial interference, or any attempt to work distinct actions simultaneously in the same receptacle, would lead to uncertainty in the results. The one-acre filter at Barking was instanced as only one part of a process which includes also the cost and complication of a preliminary precipitation and a subsequent transport of the sludge to the mouth of the Thames. The natural process now suggested, on the other hand, consisted, first, in a liquefaction of the insoluble matter, and a modification of the dissolved matter in a closed space, mainly by anærobic bacteria; secondly, in an oxidation by land, or more cheaply and regularly, by a smaller bacterial area like a coke or ballast bed. After giving instances of the importance of the process of hydrolysis or liquefaction without air, Dr. Rideal explained the difference between the two classes of microbes. He then discussed the chemical changes, gaseous and otherwise, occurring in a septic tank.

## CURRENT PRICES.

## FORAGE.

	per load	2 s. d.	2 s. d.
Hay, best	...	3 5 0	8 15 0
Straw, mixture	...	2 10 0	4 0 0
Clover, best	...	3 0 0	4 10 0
Beans	...	1 8 0	1 9 0
Straw	...	1 6 0	1 18 0

## OILS AND PAINTS.

Castor, French	per cwt.	1 7 6	1 10 0
Colza, Foreign	per ton	24 0 0	—
Do. English	per cwt.	1 3 4	—
Copperas	per ton	2 0 0	—
Kerosene, water white	per cwt.	1 5 0	1 15 0
Lard	per ton	28 10 0	32 10 0
Linseed	per cwt.	0 17 6	0 17 7½
Neatsfoot	per gal.	0 2 6	0 4 0
Paraffin	per cwt.	0 10 0	0 19 0
Pitch	per cwt.	0 8 9	—
Tallow, Town	per cwt.	1 1 8	—
Tar, Stockholm	per barrel	1 5 6	1 6 0
Turpentine	per cwt.	1 11 0	1 11 3
Clue	per cwt.	1 19 6	2 18 6
Lead, white, ground, carbonate	per ton	18 10 0	—
Do. red	per ton	16 10 0	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	3 10 0	3 18 0
Do. sticklac	per cwt.	2 2 6	2 15 0
Pumice stone	per ton	0 8 9	—

## METALS.

Copper, sheet, strong	per ton	79 0 0	82 0 0
Iron, bar, Staffs, in London	do.	6 5 0	7 10 0
Do. Galvanised Corrugated sheet	do.	11 0 0	11 10 0
Lead, pig, Spanish	do.	15 0 0	—
Do. English common brands	do.	15 5 0	—
Do. sheet, English, 6lb.	per sq. ft. and upwards	16 10 0	—
Do. pipe	do.	15 0 0	—
Nails, cut clasp, 3in. to 6in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Straits	do.	111 10 0	112 0 0
Do. English ingots	do.	115 0 0	116 0 0
Zinc, sheets, English	do.	27 10 0	28 10 0
Do. Vieille Montaigne	do.	30 0 0	—
Do. Spelter	do.	26 15 0	27 0 0

## TIMBER.

## SOFT WOODS.

Fir, Dantzic and Memel	per ld.	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 0	6 5 0
Laths, log, Dantzic	per fath.	4 10 0	5 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Do. Archangel 2nd & 1st per P. Std.	do.	9 15 0	10 5 0
Do. do. 4th & 3rd	do.	8 5 0	11 10 0
Do. do. unsorted	do.	7 5 0	9 5 0
Do. Riga	do.	8 5 0	9 5 0
Do. Petersburg 1st Yellow	do.	14 0 0	11 15 0
Do. do. 2nd	do.	8 0 0	9 5 0
Do. do. Unsorted	do.	8 0 0	9 5 0
Do. do. White	do.	7 15 0	9 5 0
Do. Swedish	do.	9 15 0	12 10 0
Do. White Sea	do.	10 15 0	18 0 0
Do. Quebec Pine, 1st	do.	17 16 0	30 10 0
Do. do. 2nd	do.	11 10 0	—
Do. do. 3rd & 4th	do.	8 0 0	7 10 0
Do. Canadian Spruce, 1st	do.	8 15 0	9 0 0
Do. do. 3rd & 2nd	do.	7 10 0	7 15 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	do.	6 7 6	7 15 0
Flooring Boards, 1 in.	per square	0 11 3	—
Do. prepared, 1st	do.	0 10 3	—
Do. 2nd	do.	0 9 9	—
Do. 3rd & 4th	do.	0 9 9	—

## HARD WOODS.

Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	8 0 0	5 0 0
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, in Cuba	per ft. sup.	0 0 4	0 0 4
Do. Honduras	do.	0 0 8	0 0 8
Do. Honduras	do.	0 0 4	0 0 8
Do. Quebec	per load	4 12 6	5 10 0
Malacca, Average Price	per ft. sup.	0 0 4	3 22 0 0 5
Do. Cango, Honduras	do.	0 0 3	17 32
Do. African	do.	0 0 4	15 16
Do. St. Domingo	do.	0 0 4	15 16
Do. Tobasco	do.	0 0 5	31 32
Oak, Dantzic and Memel	per load	8 5 0	8 15 0
Do. Quebec	do.	4 5 0	5 10 0
Teak, Rangoon, Planks	do.	13 5 0	5 15 0
Wainscot, Ogera (Bauk)	do.	8 15 0	5 15 0
Do. Odessa Crown	do.	8 15 0	5 15 0
Walnut, American	per cub. ft.	0 4 0	9 3 3

## COMING EVENTS.

## WEDNESDAY, FEB. 8.

Edinburgh Architectural Association.—T. A. Croall, F.S.A., Scot., on "Some Words about Edinburgh Architecture." 8 p.m.

Liverpool Engineering Society.—W. H. Preece, C.B., F.R.S., on "Electricity at the General Post Office." 8 p.m.

St. Paul's Ecclesiastical Society (Chapter House, St. Paul's).—Philip M. Johnson on "Low Side Windows." Illustrated by Lantern Views. 7.30 p.m.

Sanitary Institute.—Discussion on "The Supply of Water to London by the Welsh Scheme." Opened by R. E. Middleton, M.I.C.E., M.I.M.E. Sir Douglas Galton in the chair. 8 p.m.

Society of Arts.—James Swinburne on "Nernet's Electric Lamp." 8 p.m. Wilton P. Rux on "Leadless Glasses." 8.30 p.m.

## THURSDAY, FEB. 9.

Institute of Electrical Engineers.—Continued discussion on: (1) "Rules for the Regulation of the Wiring of Premises for Connection to Public Supply Mains," by J. Pigg. (2) "The Regulation of Wiring Rules," by C. H. Worthingham. (3) "The Institution Wiring Rules," by R. E. Crompton. If time permits, a paper will be read on "Electric Traction by Surface Contracts," by Miles Walker. 8 p.m.

Institution of Mechanical Engineers.—Annual General Meeting (1). Fifth Report of the Alloys Research Committee: Steel. By Sir William C. Roberts-Austin, K.C.B., D.C.L., F.R.S. 7.30 p.m.

Society of Antiquaries.—Meeting at 8.30 p.m.

Society of Arts.—Meeting of Indian Section at 4.30 p.m.

## FRIDAY, FEB. 10.

Birmingham Architectural Association.—Beresford Pite, F.R.I.B.A., on "Ancient and Modern Buildings in Palestine."

Institution of Junior Engineers.—Joint Meeting with the Architectural Discussion Section, at the Westminster Palace Hotel, Victoria Street. J. H. Pearson on "Factory Design." 8 p.m.

Institution of Mechanical Engineers.—Annual General Meeting (2). William Powrie on "Machinery for Book and General Printing." Harry G. V. Oldham on "Evaporative Condensers." 7.30 p.m.

Royal Institution.—Professor H. S. Hele-Shaw on "The Motion of a Perfect Liquid," illustrated by experiments. 9 p.m.

## SATURDAY, FEB. 11.

Edinburgh Architectural Association.—Visit to Cable Power Station, Tollcross.

London and Provincial Builders' Foremen's Association.—Annual Dinner, Anderson's Hotel, Fleet-street. 6.30 p.m.

Royal Institution.—The Right Hon. Lord Rayleigh on "The Mechanical Properties of Bodies." I. 3 p.m.

South Kensington Museum (Lecture Theatre).—J. H. Pollen, M.A., on "Furniture." I. 3.30 p.m.

## MONDAY, FEB. 13.

Bristol Society of Architects.—Arthur Lee, on "Marble Decoration."

Carpenter's Hall Lectures.—Basil Mott, on "Building an Underground Railway." Sir Arthur Arnold in the chair. 8 p.m.

Society of Arts.—Ordinary Meeting at 8 p.m.

## TUESDAY, FEB. 14.

Auctioneers' Institute of the United Kingdom.—E. J. Vaughan on "Ejectment of Tenants without Legal Process." 7.45 p.m.

Perth Architectural Association.—William Watson on "The Progress of Sanitary Science." 8 p.m.

Shalford Society of Architects and Surveyors.—P. Marshall, F.S.I., on "Surveying."

## WEDNESDAY, FEB. 15.

Edinburgh Architectural Association.—J. Connell on "Some Legal Points affecting Architects." 8 p.m.

Manchester Arts and Crafts Lectures.—H. A. Prothero, M.A., F.R.I.B.A., on "English Church Architecture." 8 p.m.

Society of Arts. Ordinary Meeting at 8 p.m.

## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

BOLTON.—Accepted for the execution of sewerage works (two contracts) for the Little Hulton Urban District Council. Mr. C. C. Hooley, C.E., Council's Offices, Little Hulton.

No. 1.—J. and M. Hawley, Stoneclough. £2,312 12 1

No. 2.—W. Snape and Sons, Eccles. £286 5

HUDDERSFIELD.—For the erection of twelve houses, Calmads, for the Meltham Industrial Society Limited. Mr. J. Berry, architect, 9, Queen-street, Huddersfield:—

Masonry.—James Earnshaw & Son, Meltham

Joinery.—Garlick Bros., Meltham

Plumbing.—John W. Kaye, Meltham

Plastering and Staining.—James Wilkinson. £2,830

Painting.—Joseph Preston & Sons, Meltham

Concreting.—John Cooke, Little Royd

LEYTON.—For electric wire factory, Leyton. Mr. W. M. Hudson, architect:—

W. Shurmur ... £10,475 H. Brown ... £9,979

F. and F. H. Higgs ... 10,285 S. J. Scott ... 3,868

S. Goodall ... 10,147

LITTLE ILFORD (Essex).—For the erection of school buildings, &c., Bessborough-road, for the School Board. Mr. S. Jackson, architect, 65, Fenchurch-street, London, E.C.

Quantities by Mr. Walter Lawrence, 13, Hart-street, Bloomsbury, W.C.:

W. J. Maddison ... £24,807 Harris and Wardrop £21,295

Shelbourne and Co. ... 24,683 W. Shurmur ... 21,062

G. Sharpe ... 23,490 Perry and Co. ... 20,925

F. Britton ... 22,275 Gregar & Son, Strat-

Chessum and Sons ... 21,997 ford, E.C.\* ... 20,336

\* Provisionally accepted, but subject to approval of Education Department.

LONDON.—For the supply of gas engines, &c., required in connection with the electric lighting of the Victoria Embankment, for the London County Council:—

J. Taylor & Sons, Ltd. £3,457 Premier Gas Engine

Fielding & Platt, Ltd. 2,378 Co. Ltd. £2,260

Crossley Bros., Ltd. 2,300 Campbell Gas Engine

Safety Concentric Co. Ltd. 2,176

Wiring Co. Ltd. 2,230 J. E. H. Andrews and Co. Ltd. 1,900

LONDON.—For the supply of dynamo, &c., required in connection with the electric lighting of the Victoria Embankment, for the London Council:—

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Safety Concentric Ltd. ... £4,919 0

Wiring Co. Ltd. ... 5,625 0 Mather & Platt Ltd. 4,000 0

Electric Construction Co. Ltd. ... 5,535 0 field ... 3,726 5

LONDON.—For building stabling and offices, Wicklow-street, Grays Inn-road, for Messrs. W. H. Greaves, Messrs. W. S. Croft and Kekwick, architects, 18, Outer Temple, Strand. Quantities supplied:—

McCormick and Sons £4,999 Patman and Fother-

Love and Co. ... 4,799 ingham ... £4,533

J. Jarvis and Sons ... 4,614 H. Wall and Co. ... 4,511

Chessum and Sons ... 4,575 J. Carmichael ... 4,497

George Neal ... 4,538 T. G. Sharpington ... 4,450

\* Accepted. Dearing and Son\* ... 4,433

ST. ANDREW'S (N.B.).—For the construction of a storage reservoir, for the Water Commissioners. Messrs. Belfrage and Carfrae, C.E., 1, Erskine-place, Edinburgh:—

J. Kirk ... £12,723 8 11 J. Kirkcaldy ... £2,960 5 0

Adam and Co. ... 12,634 0 0 J. and C. Hay ... 9,927 0 0

T. Munro ... 12,522 2 5 R. C. Brebner and

W. G. Fleet ... 12,047 12 1 Co. ... 9,452 0 0

J. Martin ... 11,965 15 3 R. Marshall ... 9,029 3 6

A. Brunton & Son ... 11,831 16 0 J. Angus ... 8,805 9 4

A. Fraser, jun. ... 11,243 18 7 G. Mackay & Son

G. Dick, jun. ... 10,796 0 0 Broughty Ferry\* 8,514 0 0

Kennedy ... 10,112 13 1 \*Accepted.

SHEFFIELD.—For the construction of roads, &c., Banner Cross Estate, for Mr. W. H. Greaves, Bagshawe. Mr. J. D. Townend, surveyor, Independent Buildings, Fargate, Sheffield:—

G. Webster ... £2,128 0 0 G. Eyre ... 1,131 16 3

B. Powell ... 1,920 0 0 F. Angus, Hills-

J. E. Nadin ... 1,324 16 10 borough\* ... 1,150 17 9

B. Roberts ... 1,276 14 10 \*Accepted.

TONBRIDGE.—For proposed boiler, chimney shaft, and flues, at the Tonbridge Union Workhouse, for the Tonbridge Board of Guardians. Mr. H. C. Lander, A.R.I.B.A., architect, Edingham House, Arundel-street, Strand, W.C.

Quantities by Mr. C. A. Jacques, 23, Dartmouth Park-avenue:—

W. Nall and Co. ... £723 13 3 K. C. Jarvis, Ton-

Strange and Sons ... 600 0 0 bridge\* ... £200 0 0

Cross and Co. ... 591 4 3 Myles and Warner ... 403 10 0

\* Accepted.



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Quantities, to be obtained from the Offices of the Council, will be supplied to competing builders upon the payment of £10 per copy, which sum will be returned upon receipt of a bona-fide Tender.

Tenders, endorsed "Public Offices," to be delivered at the Offices of the Council not later than FOUR p.m. on TUESDAY, FEBRUARY 14th, 1899.

The Council do not bind themselves to accept the lowest or any Tender.

By order.

STANLEY W. BALL,  
Public Offices, Clerk to the Council.  
Dyne-road, Kilburn, N.W.  
January 25th, 1899.

**HASTINGS UNION.****TO BUILDERS AND CONTRACTORS.**

The Guardians of the above Union hereby invite TENDERS for the ERECTION of NEW WORK-HOUSE BUILDINGS on land belonging to them in Cackle-street, Hastings.

Persons desirous of Tendering may inspect the Plans and Specifications at the Office of the Architects,

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London Office: 64, FINSBURY PAVEMENT, E.C.  
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Sealed and endorsed Tenders to be sent to the undersigned at the Offices of the Guardians, 11, Wellington-square, Hastings, not later than TEN a.m. on THURSDAY, FEBRUARY 16th, 1899.

The Contractor whose Tender is accepted, and with whom a Contract is entered into, will be required to give Bond with Sureties to be approved by the Guardians for the due performance of the Contract.

Neither the lowest nor any Tender necessarily accepted.

By order,

ARTHUR R. INSKIPP,  
Clerk.

No. 11, Wellington-square, Hastings.  
January 19th, 1899.

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## DESIGNING WINDOWS.

THE President of the Royal Institute of British Architects, in a recent address, stated:—"There is one feature we want badly, and that is a well designed large window; for there is great demand for these in the new public buildings, and we have nothing but the large Roman semicircular window of the baths, and the west-end perpendicular windows, which have little claim to beauty."

It seems that the professor abandons the idea of producing anything original, and invites the new blood in the younger members of the Profession to originate a new window. This has been attempted with varying success by nearly everyone who follows the Profession of Architecture. If we are to judge from one or two specimens that have actually been executed, it would be as well if the designers were to abandon the idea also. Octagonal windows do *not* look pretty, neither do inverted semicircular windows.

Though an element common to all Architecture, the window possesses a significance which can scarcely be surpassed by any other feature. As the channel for light, it has its function in bestowing health and cheerfulness on the inmates of a building; as an element

studied regularity of the fenestration has completely sacrificed internal light and convenience, and has been made the excuse for perpetrating many absurd arrangements.

To avoid these anomalies, windows ought to be fixed in position by the plan, having regard to the main divisions of the façade. The question of how to determine the width and number of apertures is important. Here physical conditions come into play. As the rays of light proceed in parallel lines from a window receiving light from an illuminated sky surface—and this view is practically correct—we may assume that the size and proportion of a window-opening will be the best guide to the size and proportion of a room that can be efficiently lighted by it. Thus, roughly, a long and narrow room, with a window at one end, will be best lighted by a tall, oblong opening; or, if the light is to be admitted along one side, two or more short windows will be sufficient. This conclusion will be apparent if we consider that a window of, say, rectangular shape admits a prism of light of a sectional area equal to the opening, and we assume a certain angle or obliquity to the rays. If we take the section of a window opening in a wall, and draw a line from its top edge of the assumed angle, and another parallel thereto from the cill or lower edge of the window, we represent the direction of

through a window is that derived from the sky; and secondly, that the principal portion of such light comes from the upper part of a window, that near the zenith; hence, that the higher the window, the more intense the light.

Light near the horizon is often obscured by fog or smoke or opposite buildings. Geometrically we may represent the available sky surface as half a hemisphere placed with its flat side to the window. We describe in other words, on the plan, a semicircle of any radius from the centre of the window on the outside, and from the same centre and with the same radius a semicircle on elevation. Between these semicircles we can imagine the quarter sphere of the sky. This may be divided into zones by horizontal semicircles from the zenith to the horizon, of a certain number of degrees each—say 10deg.; also, we can divide the same quarter sphere vertically by quadrants, the same number of degrees apart, and we can affix a value to each division or sector between these two sets of lines. In this manner it is easy to calculate the light entering a window in any direction, and also the amount of light shut out by any obstruction. As our readers know, this plan of considering light and obstruction is employed in estimating the amount of obstruction in light cases; but the system is of equal value in ascertaining the quantity of light from the illumined sky



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WINDOWS DOWN FROM CEILING



SUGGESTION FOR KEEPING  
WINDOWS UP CLOSE TO CEILING.

of architectural design, it is a powerful means of expressing character. And yet, strange to say, it is one of those things which are left pretty much to the fancy or taste of the designer. Its two-fold purpose requires that it should be determined by both the plan and elevation of the building, but the ordinary process is to make its size depend on the appearance, as studied in elevation, as if it had little to do with the interior. A window is put here or there, made a little larger or smaller, higher or wider, as a single opening, or divided into lights, to suit the elevation or the amount of space at disposal. It is sometimes a question of filling up a space in width, sometimes a question of height. This one-sided mode of deciding by external elevation cannot be a satisfactory method, for we get in one room perhaps two or three windows, and in another room only one, quite irrespective of the area or size of the compartment. In one part they may be clustered together, as in one corner of a room, and the other corner left in darkness. We know these awkward and inconsistent distributions of windows often occur in public buildings in the Classical style, much to the discomfort and inconvenience of officials and clerks. Some of the rooms of the War and Foreign offices suffer from this uneven distribution of light; and we may recall to mind many a modern municipal building in which the

such a prism of light entering a room. Extending these lines to the floor level, the latter becomes a horizontal plane, and will show how much of the floor will be illuminated directly by the window. The higher the window head the farther the rays of light will extend into the room, and a good idea will be obtained of the length the room ought to be from the window. Also, the nearer the window opening is to the floor the greater will be the extent of illuminated area, and the less there will be of a dark or unilluminated corner under the window. For practical purposes we may assume the angle of the light rays to be 45 deg. above the horizon, so that if the window-head is, say, 12ft. above the floor-level, the prism of light will extend the same distance into the room.

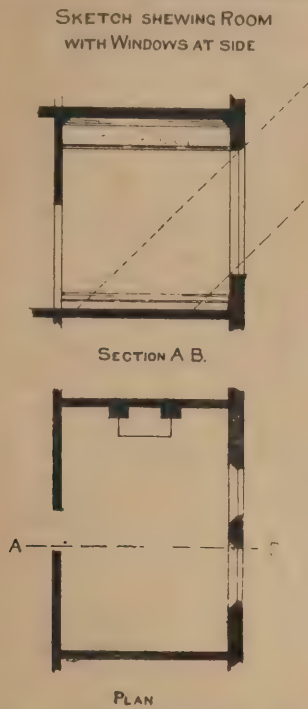
A simple geometrical construction of this kind will enable the architect to proportion the proper height and width of his window apertures, without having recourse to any calculations, such as are met with in treatises. The rule is easy, and can be quickly applied by drawing lines on the section to the angle at which the light is supposed to enter, or in making the depth of room from the outer wall not much more than the height of the window. It may be remembered for all practical purposes that in this dull climate of ours, when the sun so seldom shines directly on a window, the effective portion of the illumination received

which enters a given form of window, and it is for this purpose that we refer to it now.

It is shown by all authorities on light that the intensity of light from any part of such a sphere is proportional to the sine of the angle of altitude above the centre of window at the bottom. At the zenith, for example, we may call the intensity 1000; while at a point lower down, say, at an angle of 30deg. from the zenith, the same area will be represented by 866, and at an angle of 45deg. by the figure 707. Along the lower zones the intensity of light declines till at the horizon it is nothing. It is also worthy of notice that the intensity of light received from the portion of the sky or sphere above an angle of 45deg. is equal to that of the surface below it, though their respective areas are very unequal as measured on the sphere. If architects bore in mind this fact, they would see the necessity of placing their windows high in the room instead of low down; also, when light is essential, preferring clerestory to wall openings in some cases. Thus a long horizontal opening below the ceiling gives the best light, but such an aperture would not always be desirable.

The form and proportion of the window apertures are essential. A great deal may depend upon the style and destination of the building; but we now confine our attention to the principles, physical or geometrical, which should guide the architect in giving a form





and proportion to his windows, irrespective of the consideration of style. For agreeable proportion as applied to a plain rectangular window opening, we may take the windows of Somerset House, which are two squares in height, or two to one. Palladio generally used a double square, and this proportion is generally followed by the Italian architects. Examples are found in Chambers' "Treatise on the Decorative Part of Civil Architecture," and also in Gwilt's "Encyclopedia." But inflexible rules are useless, simply for this reason—that more light may be necessary in one room than another, and we have the differences of position, obstructions by opposite buildings, and other circumstances to consider in each case. The most desirable proportion for an aperture should be regulated by the size and shape of the room; thus, if it is a long room, and the window or windows are at one end, they should be tall, so that the light through their upper portions may penetrate well into the room. With regard to the size of the window, one good rule is to find the cube of the room in feet, and the square root of the product will give the area of the opening in feet, which may be given to one or more windows as required.

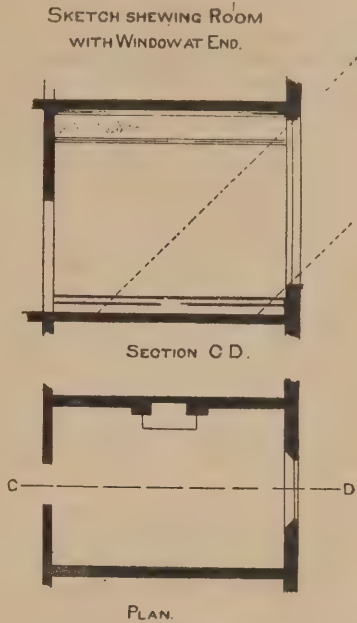
We do not place much confidence, however, in any rule which must be arbitrary, and therefore cannot apply to both bright and dull outlooks or to varied degrees of light; it is far more reasonable to consider the amount of illumined sky-surface before a given window or front of windows in the manner just

described, and to proportion the apertures to the actual amount of light available under a normal condition of sky. Thus, in darkened thoroughfares the windows ought to be high, and tolerably wide, so that as much of the zenith light may be secured as possible, and further, projecting pediments, balconies, and cornices should be avoided or reduced. It is better to err on the side of too much than too little light, so that the erection of buildings opposite may not seriously darken the rooms. The heads or upper portions of the windows are often darkened by traceried heads, and painted glass; hence the importance of making all decorative windows larger in area than is absolutely necessary for light, or than those which are plain and merely filled in with transparent glass. We very often see this rule neglected. Semi-circular heads are filled with carving in stone or terra-cotta modelling, or mullions carry perforated tracery, so that the most efficient part of the window is lost or the light is reduced to a considerable extent. A strong objection to the ornamental headed window is that the actual light aperture is necessarily low in the room to give space for the sculptured tympanum or tracery.

Another architectural arrangement ought to be noticed, quite as objectionable. In elevations of façades there is often a full membered entablature at the summit, and this, for the sake of construction, is generally placed so that the upper member or cornice is below the roof plate, the consequence of which is that the whole depth of entablature occupies a considerable space down the wall below the ceiling level, and the windows have to be placed low in consequence, their heads being beneath the soffit of entablature, with a blank space of walling over inside. We have here a serious impediment to effective lighting by windows, as the windows are too low to admit the best light, and the projection of entablature above obstructs the rays directly overhead. The difficulty is often met by omitting the lower members of entablature, and placing the cornice as high as possible. If there is a parapet and balustrade to act as a counter-weight to the cornice, the latter may be placed above the plate-level of roof, so that plenty of headroom is obtained for the upper windows. One way of getting over the difficulty is by the dormer, but the dormer arrangement is expensive. A frieze may often be perforated to admit light under the ceiling in addition to windows. The effect of wide piers between windows in one room is that dark shadows are cast; therefore it is an advantage to group windows together, rather than to separate them by wide spaces of wall.

The decorative treatment of windows is too large a subject to deal with in this article. In Eastern countries the window was small and unimportant as an architectural feature; its development has been simultaneous with the necessary enlargement of the aperture. The growth of Mediæval Architecture is largely identified with the increase of the

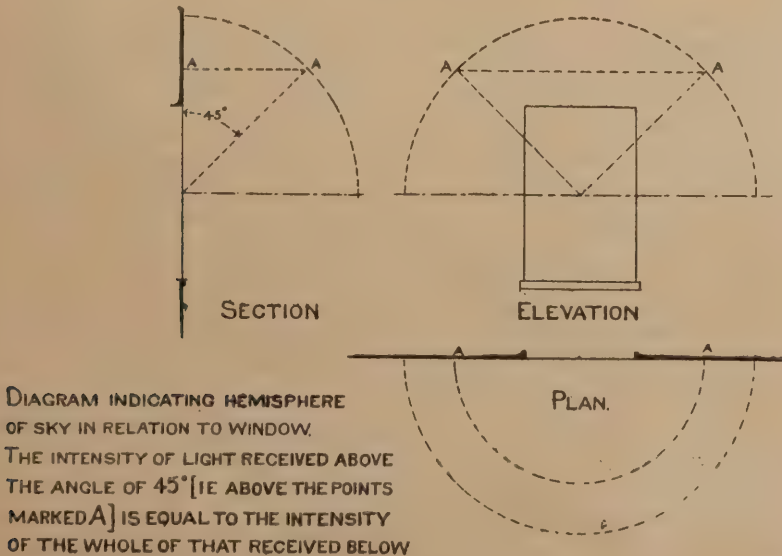
light aperture, as the student of Gothic tracery will at once recognise in comparing Early Romanesque or Norman with Late Perpendicular. But the ordinary window, with its accompaniments, is a product mainly of the Italian Renaissance. At first a mere aperture for light in a wall, it soon began to develop in size and significance. We have, first, the architrave and pediment as a frame, as we see at the Farnese Palace, Rome; the Reform Club, Pall Mall; and Somerset House; then we have the lighter palatial styles of Venice in such palaces as the Vandramini, and the Pesaro, or the well



known library of St. Mark's, where two orders inclose arcades and openings of considerable area, with a range of panel lights in the upper frieze; with the evident intention of obviating the dark blank space above the main arcade of windows. In these and other instances the solids are reduced to a minimum, the wall disappears, and attention is concentrated instead on the orders of columns which form the piers and the horizontal lines or arcades. The process has been similar to the growth of window tracery; at first there was only an opening—a mere group of lancets—which in time began to be placed nearer together till mere mullions intervened, and at length "plate" was exchanged for "bar" tracery.

Messrs. Matthews and Yates, Ltd., of Cyclone Works, Swinton, Manchester, have just secured a contract from the Admiralty for the supply and erection of washing and drying plant for the R.N. Swimming Bath, Portland. This firm have a speciality in laundry drying plant which has found especial favour in the eyes of our Naval Authorities, and is being very extensively used by them in their numerous stations. We understand they are just completing a similar contract for the R.N. Hospital, Great Yarmouth.

Improvements at Scarborough.—The Corporation of Scarborough have applied to the Local Government Board for a Provisional Order for the extension from August, 1899, to August, 1902, of the time for the completion of the new Marine Drive round the base of the Castle Hill. The drive will cost about £100,000, and will connect the South Foreshore with the Clarence Drive on the North shore. The progress of the work has been seriously interfered with owing to the difficulty experienced in building the wall at Coffee Pot Rock. At this point the sea washes up to the line of the proposed road. It has, therefore, been decided to modify the original plans, and build the wall about 30ft. nearer the cliff. Another projected improvement is the conversion of St. Nicholas House and grounds, which have been bought for £33,000, into municipal offices and public pleasure grounds.





## Masters and Men.

**The Bolton Engineers** decided, at a meeting held on January 27th, to give notice for an advance of two shillings per week wages, but to postpone definite action for a month. It was reported that the masters would favourably consider the matter.

**A Lock-out averted at Norwich.**—A dispute has arisen in Norwich with reference to the laying of Broseley tiles. The masters insisted on their right to let out tiling to merchants who supply the tiles; the men on the other hand contended that the laying of tiles was bricklayers' work and not slaters. Through the friendly mediation of Messrs. Boardman and Son the masters have conceded the men's point, and a lock-out has been averted.

**Labour Disputes in Aberdeen.**—The building trade in Aberdeen is in a disturbed state at present, owing to agitations for advances in wages on the part of the painters and also of the joiners. The former demand an increase from 7½d. to 8½d. per hour, together with certain alterations of the rules with regard to overtime, holidays, and apprentices. At a recent meeting of the Masters' Association it was unanimously decided not to accede to the men's demands. A strike is therefore imminent. The demand of the joiners is for an increase of ½d. per hour. They also have been met with a refusal, and as a consequence went out on strike on Feb. 1st. More than 600 men are involved in this dispute. The executive of the Scottish Building Trades' Federation has unanimously resolved to support the master-joiners in resisting the men's demands.

**The Masters Builders' Association.**—The twenty-first annual conference of the National Association of Master Builders of Great Britain and Ireland was held at Bradford on Jan. 31st. The retiring president, Mr. J. E. Jones, moved the adoption of the report. He said the Council had had a great deal to do during the past six months. First of all there was the Federation scheme. At their last half-yearly meeting the absolute need of federation had been realised, and the scheme had been carried to completion. The relationship of the association to the operatives had been somewhat unsettled lately, and the association had received numerous notices of increase of wages and alteration of rules to come into force in the spring. During the past six months there had been no serious strikes, for it was unusual in the building trade to go out on strike in the winter months. But the aggressive attitudes adopted by some of the trade unions, particularly in reference to freedom of management on the part of employers, had become no longer bearable. No doubt the Council would be called upon to enjoin the Federation to adopt some policy which would effectively check these aggressive measures. — Alderman W. Holdsworth, of Bradford, was elected president of the association for the ensuing year. — Considerable discussion took place as to the power of the standing committee. It was eventually decided "That all cases of emergency arising between the full meetings of the Council shall be dealt with by the Standing Committee." — On the motion of Mr. W. Cunliffe it was unanimously resolved that the executive should do all they could to secure the formation of a foremen's union, and insist upon the foremen joining it and being liberated from the operatives' union. A donation of ten guineas was voted to the Free Labour Association, and the question of the plasterers' dispute was then considered in private. — The result of this discussion is stated below.

**The Plasterers' Strike.**—The prospects of peace are a little more hopeful than they were a week ago. At the meeting of the National Association of Master Builders, held at Bradford on Jan. 31st, it was unanimously

decided to call on the Plasterers' Union for an assurance that they in future abstain from the objectionable practices set out in the printed circular of Jan. 10. The practices in question were those referred to in last week's BUILDERS' JOURNAL. It would appear, however, that the masters have since modified their demands, confining them to the two most serious points in dispute—the persistent attempt to coerce foremen into membership and the restrictions on apprenticeship. This is an important move in the direction of conciliation. The Master Builders' communication has been referred by the officials of the Plasterers' Association to their executive council. Nothing further is likely to be done until the result of the men's ballot on the question of foremen is made known.

**Conciliation and Arbitration.**—The annual meeting of the Board of Conciliation and Arbitration for the manufactured iron and steel trade of the north of England was held at Newcastle-on-Tyne on January 30th. Mr. W. Whitwell (president) in the chair. Mr. J. R. Winpenny (joint secretary) read the annual report of the standing committee, which stated that the number of firms in membership with the board was nine. The average number of operative subscribing members during the half-year had been 4081. The president, in moving the adoption of the report, said that the board was not standing still. Three large and important works were about to join the organisation. It looked as if the board would again become the powerful organisation that it once was in the North. The members had confidence in one another, and he did not remember a single instance in which there had been anything in the nature of misrepresentation on either side of the table as regarded facts or difficulties. Mr. E. T. Trow (joint secretary), in seconding the motion, said the operatives had confidence in the board, and they had always met with courtesy from the employers' representatives.

## Builders' Notes.

**A New Market** is to be built on the site of the old Portman Market, in Marylebone, which is within an easy reach of the Paddington terminus. The new market, the plans of which have already been approved, will have all the modern conveniences required for the disposal of meat, fish, vegetables, and general provisions, and there will also be a hay market and coal offices. It is anticipated that the building will be opened for business in about six months.

**The New Kew Bridge.**—Mr. Easton Gibb, of Skipton, the contractor who has undertaken the task of building the new Kew Bridge, is erecting workshops close by Kew Green, and very shortly definite operations will be commenced for the construction of the temporary bridge, which is to be built to the west of the present structure, and will serve until the new one is completed. The cost of the new bridge, including the temporary one, is £150,000.

**The Rebuilding of Highgate Archway,** which is being carried out by the London County Council, does not proceed very rapidly, owing, it is said, to the difficulty experienced in getting material, especially steel. For two months the work has had to be entirely suspended on that account. The gas and water mains going over the viaduct are to be specially constructed of light steel, and the bridge girders are also of steel. The work is again proceeding, however, and by the end of this year it is probable that the structure will be sufficiently advanced to allow of traffic going over it. The new bridge is to have a clear span of 120ft., and the width of the roadway over it will be 40ft., 16ft. of which will be appropriated for footways. It will be 62ft. above Archway Road. The estimated cost of rebuilding is £28,000.

**Master Painters of Scotland.**—The annual meeting of the Association of Master Painters of Scotland was held at Dundee on January 27th. The annual report showed that the membership is at present about 300; the past year has been on the whole a good one for the trade, and no serious disputes have occurred between employers and employed. — Mr. William Brown, of Dundee, was elected president for the coming year. — Mr. T. Delgaty Durn read a paper on "The Technical Education of Painters," in the course of which he urged employers to encourage their apprentices to attend technical classes. — Mr. A. L. Gray read a paper in which he deprecated the system of scamping work—undertaking to do work for a certain sum, and giving it only about half the number of coats of paint or varnish stipulated. He considered that the acceptance of tenders at prices too low to allow of good work was largely responsible for this scamping. On the 28th, an exhibition was held of work sent in for competition by apprentices. The principal prize—the President's gold medal for general excellence—was gained by Joseph S. Robertson, an apprentice with Mr. Joseph Nicholson, of Dundee.

**What is a Scaffolding?**—At Marylebone County Court his Honour Judge Stonor delivered judgment on January 25th in the case of "Stack v. Coulsell Brothers." The applicant was injured on September 8th by the fall of a joist while he was working, and it was admitted that he was entitled to an award in his favour if the building upon which he was engaged was within the provisions of the Workmen's Compensation Act. The building where the accident happened was much lower than 30ft. in height, and on its floor there were at the time of the accident two pairs of trestles with two boards resting upon them as a temporary scaffold to enable the workmen to work at the roof or ceiling. To bring this case within Section 7 of the Act it must be shown that the building in which the accident occurred "was being constructed or repaired by means of a scaffolding." His Honour said, with reference to this point, he thought that the building now in course of erection was not being "constructed or repaired by means of a scaffolding," for he thought that the proper meaning of "a scaffolding," at all events for the present purpose, was that given in the Glossary of Architecture, viz., "a temporary erection of poles, planks, cords, etc., for the use of workmen in building walls or executing any work which they cannot otherwise reach," which is always secured and fixed, and not a temporary erection of two pairs of trestles with boards across them, unfixed, unsecured, and movable by the workman as occasion may require. There was strong argument in favour of attaching the meaning given by the architect's glossary to the word in the clause under consideration from its manifest restrictive intention and operation with regard to the building business. It began by first restricting such operation to buildings "30ft. in height," no doubt on account of the additional danger attending on buildings of that and greater height, and then proceeded further to restrict it to such buildings if they were "constructed or repaired by a scaffolding," no doubt also on account of the additional danger arising from the use of the same. Now, if this was to extend to every unfixed and movable erection of trestles, boards, ladders, &c., as contended on the part of the applicant, these words would be wholly nugatory, inasmuch as every building 30ft. high must be constructed by such means, at all events as to the roofs, ceilings, &c., and the words "constructed or repaired by a scaffolding" would have no effect, restrictive or otherwise, whatsoever. He therefore found for the respondents and dismissed the application.

**Street Works at Sheffield.**—The Highway and Sewerage Committee of the Sheffield Corporation have under consideration a large scheme for private street works. The work is to be done in sections, extending over a period of three years.



Engineering Notes.

**The Engineering Trade at Hull** seems to be in a bad way. At the annual meeting of Earle's Shipbuilding and Engineering Company on Friday the managing director stated that Hull, and especially his Company, had been made the cockpit for trades unionism with the result that they had had constant strikes and disputes. In three years by such disputes fifty-five weeks had been lost, and he suggested the Company should be voluntarily wound up, or remove its plant to some place where the men would be more willing to work. Several shareholders advised the winding-up of the Company if they were not better treated by the men in future.

**Electric Lighting at Sheffield.**—The question of the electric lighting of Sheffield, more particularly with regard to such public buildings as the Town Hall and the Police Offices, has been under consideration by the Lighting Sub-Committee of the Watch Committee of the Corporation. It has been decided that the vicinity of the Town Hall in Pinstone Street and New Surrey Street shall be lighted with electricity as soon as possible. In order to get a direct current for the supplying of electricity for lighting and mechanical purposes, the committee have ordered a motor at a cost of upwards of £1000, by which the current may be transferred from alternating to direct, and made available for use in the working of lifts and light machinery. The greater question of the electric lighting of the city generally has yet to be dealt with.

**Institution of Junior Engineers.**—Sir W. H. White, Director of Naval Construction, took the chair in his capacity of President at the fourteenth anniversary dinner of this Institution on January 28th at the Westminster Palace Hotel.—The President, in responding to the toast of "Naval Architecture," advised the Junior Engineer never to give way to the thought that he had come to the end of his power of improvement or of his capacity to learn. There were only a limited number of Islands in the world, but there was such a thing as Island-making. Africa had been made an island, and perhaps that was the reason why there was so much trouble about it. The great ambition of the United States was to make another island of what was now known as the South American Continent. What would happen when that was done? He did not know. He only knew that whenever the civil engineer made water communication possible, there the naval architect was able to provide the means of transport and trade. So he said to all other engineers: "Go on; the more the merrier."

**Harbour Works at Dieppe.**—Important new works are shortly to be put in hand, with a view to improving the entrance to the port of Dieppe. The cost of carrying out the project is expected to amount to about five million francs.

**Electric Tramways for Aberdeen.**—At a meeting of the Tramways Committee of the Aberdeen Town Council, on January 30th, the system of electric traction to be adopted on the Woodside route was considered. After discussion, the committee agreed to instruct Mr. Bell, electrical engineer, to bring up a report as to the mode of electric traction it was desirable to adopt, and the details regarding the work. It was agreed that cars similar to the "double-deckers" in Glasgow should be constructed for the Woodside route. The feeling of the committee was that the overhead system should be adopted.

**Wireless Telegraphs.**—At the South Foreland lighthouse, in the presence of representatives from the local district councils, some successful trials were made, on January 30th, under the supervision of Signor Marconi, of his system of telegraphing without wires between the East Goodwin lightship, twelve miles out at sea, and the lighthouse. The messages were received and recorded on the tape with absolute accuracy. The height of the pole used for transmission was 130ft., and Signor Marconi considered that by this a message could be sent to the French coast. The receiving wire on the lightship was run 80ft. up the mast. During the recent severe weather the system has worked perfectly, and the men on the ship have sent messages that have been transmitted to Ramsgate.

**A Remarkable Engineering Success** has been achieved at Gainsborough. Nearly two years ago Messrs. Timmins and Sons, of Runcorn, were carrying out the second borehole of the Gainsborough artesian well scheme. Through the accidental breaking of the rope used in boring, the contractor had the misfortune to lose the boring tool, weighing 35cwt., and being 30ft. in length, at a depth of 724ft. For two months the working staff were occupied in endeavouring to lift the tool, but without success. Further operations were decided on, and a few days ago the tool was successfully brought to the surface, together with several tons of soil. There is now every possibility of the artesian scheme being carried to a successful issue. The contractors are to be congratulated upon the persistency with which they have dealt with the difficulty, which at one time seemed almost insurmountable. £3000 has just been laid out in a new pumping plant for the No. 1 borehole, and a similar sum is to be expended in connection with the second boring.

Surveying and Sanitary Notes.

**A New Photo-theodolite** for photographic surveying has been invented by Mr. J. Bridges-Tree. The instrument has been adopted by the Indian Survey and Indian Meteorological Department, the United States Geological Survey, the French and other Governments.

**Proposed New Canal for Hull.**—A meeting of property owners along the Holderness drain within East Hull has been held to consider the question of forming a portion of the drain into a canal. It is not intended at present by the promoters to go beyond the eastern boundaries of the city; but, no doubt, if sufficient capital is forthcoming, the Holderness drain might, at a moderate outlay, be converted into a canal for the accommodation of small craft, and were the conversion within the city boundaries effected there would, it is expected, soon be established along the banks manufactories of various kinds. The plans of the proposed canal have been drawn by Mr. W. A. Gelder, architect (the Mayor). After considerable discussion, the consensus of opinion was that it was desirable the suggestion should, if possible, be carried into effect, and a committee was appointed to consider suggestions and report to a future meeting of the promoters.

**The Status of Sanitary Inspectors.**—The sixteenth annual dinner of the Sanitary Inspectors' Association was held last Friday evening at the Holborn Restaurant. Sir John Hutton, in proposing the toast of the evening, "The Sanitary Inspectors' Association," said that, as to the status of sanitary inspectors, they had time out of mind recorded the fact that their appointments were of too precarious a nature to give confidence and comfort. At present a sanitary inspector was appointed for a single year only, and if he did his duty it was very likely he would soon be dismissed. There were cases on record in which the want of fixity of tenure had demoralised sanitary inspectors. They must educate the public until they brought about an alteration in that respect. In regard to remuneration, too, an improvement was necessary. It was absurd to think that an inspector could be properly remunerated by a pittance of £75 or £100 a year. A commencing salary of £150, rising by annual increments to £250, would be only a reasonable payment. In conclusion, he denied that sanitary inspectors were the enemies of the people. They were the sanitary police, and as such they could not be bribed, and were worthy of their hire.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.		WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—				
Feb.	10	York—Erection of Fence Wall, Railing, &c.	Corporation	A. Creer, City Engineer, Guildhall, York.
"	10	Bruntcliffe, Leeds—Erection of Stabling		J. Jackson, Architect, Barry-street, Bradford.
"	10	Dorchester—Erection of Hall and Two Houses	Hand-in-Hand Lodge of Oddfellows	A. L. T. Tilley, 26, South-street, Dorchester.
"	10	Enniskillen—Additions to Infirmary, &c.	Governors	C. Wilson, Registrar, Enniskillen.
"	10	Sheffield—Erection of Chapel, &c.	Wesleyan Chapel Trustees	W. Irons, 10, St. James's-street, Sheffield.
"	11	Brynny, Cornwall—Erection of Farmhouse		S. Hill, Architect, Redruth.
"	11	Eastbourne—Public Convenience	Pleasure Grounds Committee	R. M. Gloyne, Borough Engineer, Town Hall, Eastbourne.
"	11	Elland, Yorks.—Supply of Bricks and Flags	Burial Committee	J. L. Garsed, Clerk, Elland.
"	11	Cardiff—Extension of Mortuary	Guardians	Edwin Seward, Queen's-chambers, Cardiff.
"	11	Swindon—Rebuilding Inn	T. and J. Askell	W. Drew, 22, Victoria-street, Swindon.
"	13	Wimbledon—Isolation Hospital	Urban District Council	C. H. Cooper, Council Offices, Broadway, Wimbledon.
"	13	Liscard, Cheshire—Erection of Hospital	Building Committee	Hurrell and Taylor, 6, Stanley-street, Liverpool.
"	13	Preston—Cloak-rooms, &c.	Corporation	Borough Surveyor, Town Hall, Preston.
"	14	Bridgwater—Building Show Yards	Somerset County Agricultural Assoc.	A. Cottam, Surveyor to the Association, Bridgwater.
"	14	Leeds—Church Works		H. Walker, 8, Upper Fontaine-street, Leeds.
"	14	London, N.W.—Extension of Public Offices	Willesden District Council	O. C. Robson, Offices, Dyne-road, Kilburn, N.W.
"	15	Letterkenny—Plastering		W. Hague, 50, Dawson-street, Dublin.
"	15	Rugby—Public Offices	Urban District Council	D. G. Macdonald, Council's Surveyor, Windmill-lane, Rugby.
"	15	Ilkington, Yorks.—Erection of Stables, &c.	Industrial and Provincial Society Ltd.	M. Hall, 29, Northgate, Halifax.
"	15	Walton-on-Naze—Brick Groyne		H. W. Gladwell, 5, Crescent-road, Walton.
"	16	Hastings—Erection of Workhouse Buildings	Guardians	Jeffery and Skiller, 5, Havelock-road, Hastings.
"	16	Huddersfield—Alterations, &c., to Orphan Home		J. Kirk and Sons, Architects, Huddersfield.
"	17	Wadebridge—Erection of Vicarage		Egloskaye Vicarage, near Wadebridge.
"	18	Liverpool—Wesleyan Church	Trustees	R. W. Greaves, 1, Harrington-street, Liverpool.
"	20	Ipswich—Erection of Conveniences, &c.	Burial Board	H. J. Wright, 4, Museum-street, Ipswich.
"	20	Stockton-on-Tees—Cottage Homes	Union Guardians	J. Rodham, 26, Finkle-street, Stockton-on-Tees.



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—Continued.</b>			
Feb. 21	Dover—Construction of Conveniences, &c.	Town Council	H. E. Stilgoe, Engineer, Town Hall, Dover.
" 21	West Kensington, W.—Foundations for Bank	H.M. Commissioners of Works	The Secretary, Office of Works, Storey's Gate, S.W.
" 22	Gorton, Lancs.—Alterations, &c.	Urban District Council	C. J. Lomax, 37, Cross-street, Manchester.
" 22	Knaresborough—Erection of School Buildings, &c.	King James's Gram. School Governors	W. Gill, Secretary, Knaresborough.
" 24	Fletton, Peterborough—Erection of Shops, &c.	Equitable & Industrial Co-op. Soc. Ltd.	Townsend & Fordham, Architects, Cross-st., Peterborough.
" 25	Tipton, Staffs.—Laying-out Park	Urban District Council	W. H. Jukes, Council's Surveyor, Owen-street, Tipton.
" 25	London—Works and Repairs	H.M. Commissioners of Works	Office, Storey's Gate, Westminster.
" 27	Wolverhampton—Extension of Electric Light Station.	Lighting Committee	J. W. Bradley, Town Hall, Wolverhampton.
March 15	Glasgow—Exhibition Buildings	Glasgow International Exhibition	F. A. Healey, 141, Buchanan-street, Glasgow.
No date.	Bentley, near Doncaster—Erection of Church		Athron & Beck, Architects, Dolphin-chambers, Doncaster
"	Reading—Two Shops		W. Jane, 17, Market-place, Reading.
<b>ENGINEERING—</b>			
Feb. 10	Birmingham— $\frac{5}{8}$ miles of Aqueduct	Corporation	J. Mansergh, 5, Victoria-street, S.W.
" 11	Ashford, Kent—Purifiers, Gasholder, &c.	Urban District Council	Stevenson and Burstall, 38, Parliament-st., Westminster.
" 11	Bristol—Pipe-laying	Waterworks Company	T. and C. Hawkesley, 30, Great George-street, Westminster.
" 13	Barry, Wales—Steam Pump	Urban District Council	E. W. Waite, Waterworks Engineer, Barry.
" 13	Llanelli—Dredger	Harbour and Navigation Commissioners	H. W. Spawart, Clerk, Town Hall, Llanelli.
" 13	West Hartlepool—Electric Lighting	Corporation	H. Simpson, Town Clerk, West Hartlepool.
" 14	Kingston-upon-Thames—Telephonic Communication	Guardians	W. H. Hope, Architect, Union Offices, Kingston.
" 14	Nelson—Gas Condenser	Gas Committee	W. Foster, Engineer, Town Hall, Nelson.
" 14	Nelson—Electric Lighting Plant	Gas Committee	W. Foster, Engineer, Town Hall, Nelson.
" 15	London, E.C.—Twenty Locomotive Boilers	East Indian Railway Co.	A. P. Dunstan, Secretary, Nicholas-lane, E.C.
" 16	Alexandria, Egypt—Two Swing Bridges	Inspector of Irrigation	Inspector of Irrigation, Third Circle, Alexandria.
" 17	Southampton—Electric Lighting, &c.	Corporation	Municipal Offices, Southampton.
" 18	Edinburgh—Construction of Railways	Glasgow & Renfrew District Railway Co.	Wharrie and Colledge, 109, Bath-street, Glasgow.
" 20	Eastbourne—Pier Improvements	Pier Co. Ltd.	M. N. Ridley, 11, Dartmouth-street, Queen Anne's-gate, S.W.
" 22	Gorton, Lancs.—Sludge Pressing Machinery	Urban District Council	C. J. Lomax, 37, Cross-street, Manchester.
" 26	Christiana—Porcelain Telegraph, &c., Insulators	Norwegian State Telegraph Administratn.	Commercial Department, Foreign Office, S.W.
" 28	Wakefield—Waterworks	Corporation	C. C. Smith, Engineer, Townhall, Wakefield.
" 28	Rhos, Denbighshire—Construction of Railway	Great Western Railway Company	Engineer, Paddington Station, London.
March 1	Llanidloes—Reservoir	Town Council	A. Davies, Town Clerk, Llanidloes.
" 2	Cairo—Iron Canal Bridge	Public Works Department	The Inspector, Second Circle of Irrigation, Cairo.
" 3	Edinburgh—Aqueduct, Bridges, &c.	Water Trustees	J. Wilson, 72a, George-street, Edinburgh.
No date.	Cairo—Lockgates, &c.	Egyptian Public Works Department	Commercial Department, Foreign Office.
<b>IRON AND STEEL—</b>			
Feb. 10	Birmingham—Supply of Materials	Public Works Committee	City Surveyor, Council House, Birmingham.
" 13	Belfast—Supply of Railway Stores	Belfast and County Down Railway Co.	T. J. Brittain, Secretary, Queen's Quay Terminus, Belfast.
" 14	Ashton-under-Lyne—Cast Iron Pipes	Waterworks Joint Committee	G. H. Hill and Sons, 3, Victoria-street, Westminster, S.W.
" 17	Dublin—Chain Cable	Commissioners of Irish Lights	R. Armstrong, Secretary, Irish Lights Office, Dublin.
" 20	Brighton—Iron and Steel Work	Marine Palace and Pier Works	R. S. G. Moore, 17, Victoria-street, S.W.
" 20	Pontypridd—Ironwork for Canal Bridges	Rural District Council	E. Rees, Surveyor, Council Offices, Pontypridd.
" 21	India Office, S.W.—Railway Lines, &c.		Director-General of Stores, India Office, Whitehall, S.W.
" 22	Torquay—Supply of Cast Iron Pipes, &c.	Water Committee	W. Ingram, Water Engineer, Torquay.
" 25	London, S.W.—Gas Fitters' Work	H.M. Commissioners of Works	Office, Storey's Gate, Westminster.
<b>ROADS AND CARTAGE—</b>			
Feb. 10	Broadstairs—Making-up Roads	Urban District Council	H. Hurd, Town Surveyor, Council Offices, Broadstairs.
" 10	Hull—Supply of Granite Setts	Corporation	A. E. White, City Engineer, Town Hall, Hull.
" 10	Birmingham—Supply of Materials	Public Works Committee	City Surveyor, Council House, Birmingham.
" 11	Blackburn—Materials, &c.	Corporation	W. Stubbs, Engineer, Municipal Office, Blackburn.
1	Swindon—Street Works	Urban District Council	H. J. Hamp, Surveyor, Regent-circus, New Swindon.
"	Wetherby, Yorks.—Supply of Whinstone, &c.	Rural District Council	— Wiseman, Surveyor to Council, Wetherby.
"	Banbury—Supply of Stones	Rural District Council	E. L. Fisher, Clerk, The Horse Fair, Banbury.
"	Heswall, near Chester—Roads	Land Company Limited	Beloe and Priest, 13, Harrington-street, Liverpool.
3	Iford—Victoria Stone Paving, &c.	Urban District Council	H. Shaw, 7, Cranbrook-road, Iford.
13	London, N.W.—Road Materials, &c.	Hendon Urban District Council	S. S. Grimley, Surveyor, Public Offices, Hendon, N.W.
13	Kirkcaldy—Road, Bridges, &c.	Commissioners	W. D. Lang, Engineer, Kirkcaldy.
13	London, N.W.—Road Works	District Council	O. C. Robson, Offices, Dyne-road, Kilburn, N.W.
" 14	West Ham—Materials	County Borough	Borough Engineer, Town Hall, Stratford, E.
" 14	London, S.E.—Road Works	Lewisham Board of Works	Surveyor, Town Hall, Catford.
" 15	South Shields—Supply of Materials	Corporation	S. E. Burgess, Borough Engineer, Chapter-row, S. Shields.
" 15	London, N.W.—Works and Materials	St. John's Vestry, Hampstead	Surveyor, Vestry Hall, Hampstead.
" 15	London, S.W.—Various Materials	Westminster Vestry	G. E. W. Wheeler, Town Hall, Caxton-street, Westminster.
" 15	Birkenhead—Supply of Materials	Corporation	C. Brownridge, Borough Surveyor, Town Hall, Birkenhead.
" 15	Bristol—Flagging	Sanitary Committee	T. H. Yabbicom, 63, Queen-square, Bristol.
" 15	London—Materials	Hammersmith Vestry	H. Mair, Surveyor, Town Hall, Broadway, Hammersmith.
" 17	Bexhill, Sussex—Street Works	Urban District Council	G. Ball, Surveyor, Town Hall, Bexhill.
" 18	Spilsby, Lincs.—Broken Granite and Slag	Rural District Council	T. A. Busbridge, District Surveyor, Spilsby.
" 20	East Retford—Road Materials	Rural District Council	T. Henry, Surveyor, Retford.
" 20	London, W.—Works and Materials	St. James's Vestry, Westminster	Surveyor to Vestry, Westminster.
" 21	Battersea, S.W.—Works and Services	Vestry	J. T. Pilditch, Vestry Hall, Lavender Hill, S.W.
" 22	Clayton-le-Moors—Granite Setts	Urban District Council	A. Dodgeon, Council Offices, Clayton-le-Moors.
" 23	Boston, Leicestershire—Broken Granite, &c.	Holland County Council	H. C. Johnson, Deputy Clerk, Sessions House, Boston.
" 23	London, N.—Works and Materials	Islington Vestry	Vestry Hall, Upper-street, N.
" 25	Lewes—Materials, &c.	East Sussex County Council	F. J. Wood, County Surveyor, County Hall, Lewes.
" 28	Selby—Asphalte or Tar Macadam	National Schools Managers	Rev. A. G. Tweedale, The Vicarage, Selby.
<b>SANITARY—</b>			
Feb. 10	Pudsey—Sewers, &c.	Urban District Council	J. Jones, Surveyor, Council Offices, Pudsey.
" 14	Patricroft, Lancs.—Extending Sewer	Rural District Council	C. C. Hooley, Union Offices, Patricroft.
" 14	Felixstowe—Drainage Works	Urban District Council	Surveyor's Office, Town Hall, Felixstowe.
" 14	Mansfield—Construction of Sewers	Town Council	R. F. Vallance, Borough Surveyor, Mansfield.
" 14	Cirencester—Drainage Works	Urban District Council	T. Hibbert, Surveyor, Cirencester.
" 15	Gorton, Lancs.—Drainage Works	Urban District Council	C. J. Lomax, 37, Cross-street, Manchester.
" 18	Coalville, near Leicester—Sewers, &c.	Urban District Council	J. B. Everard, 6, Millstone-lane, Leicester.
" 25	St. Anne's-on-Sea—Sewers, &c.	Urban District Council	H. Bancroft, 88, Mosley-street, Manchester.

## COMPETITIONS.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
Feb. 15	Wisbech—Converting to Casual Wards		Workhouse Master, Union Offices, Wisbech.
" 24	Northwich—Two Story Dwelling House	£20, £10, £5	Northwich Salt Compensation Board, Warrington-street.
" 28	Knutsford—Laying-out Cemetery, &c.	£20, £10	W. J. Downes, Surveyor, Urban District Council, Knutsford.
" 28	London, S.W.—Covered Sanitary Dust-cart	£25	Clerk, London County Council, Spring Gardens, S.W.
March 1	Northwich—Dwelling-house on Land Liable to Subsidence	£20, £10, £5	Salt Compensation Board, Northwich.
" 4	Beverley—School Buildings	£25, £10, £5	Beverley Grammar School.
" 20	London, E.C.—Additions to Town Hall	£50, £25	Shoreditch Vestry.
" 30	Doncaster—Design for Master's House	£50, £25	Doncaster Grammar School Trustees.
" 31	Forfar—Isolation Hospital	£81 10s., £21, £15 15s.	Dundee and Forfar District Committees.
April 14	Bradford—Cartwright Memorial Hall and Art Gallery	£150, £100, £50	City Surveyor, Bradford.
June 1	Leeds—Market Hall and Shops	£150, £100, £50	Corporation.
No date.	London, S.W.—Design for Board Room, Offices, &c.	£100, £60, £40	Wandsworth and Clapham Union Guardians



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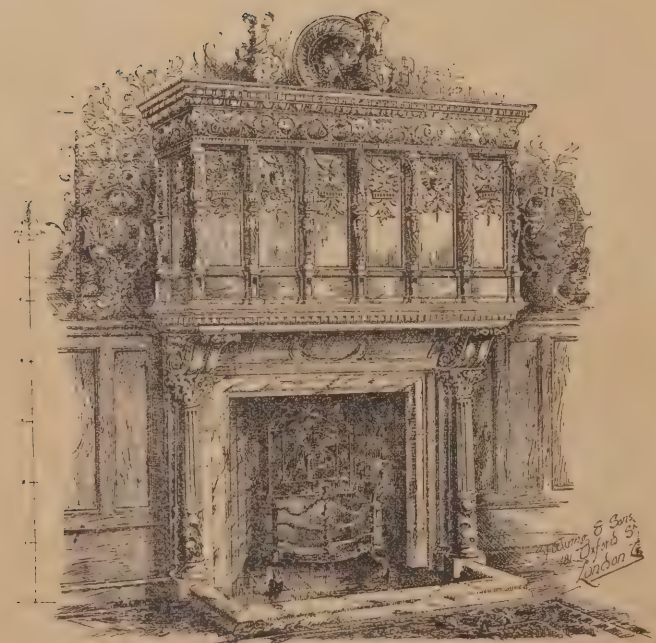
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## An Architectural Causerie.

### A Plea for a Unity of the Arts.

THE period of undebased Italian Art in Architecture ran

from about the middle of the twelfth century to the early part of the fifteenth century. It was during this period that the elemental Lombardic Gothics developed into the loveliness and grandeur of the pure Gothic, as can be seen in the few examples left us, unspoiled by the ruinous touch of centuries. An examination into the causes which underlie this splendid revival would, of necessity, be a long one; but, were the investigation conducted in an unbiassed critical spirit, the manner of the growth of this particular beauty in Architecture could be traced to what we would call "The Unity of the Arts." Architecture in the thirteenth and fourteenth centuries—in Italy at all events—stood, in relation to the great masses of the people, as music stands to us at the present. When we say "the people," we mean those—as that part of the people of to-day—who take at least an intelligent interest in what we now call the "Arts and Crafts." This designation, by the way, gives a momentary proof of the disunion of the Arts and the Crafts in our own minds. Such a condition of intellectual appreciation brought about a state of things which made of the people a community of architects. That is, not of necessity architects in actual pursuance of a practice, but architects in sympathy, and the excellence of their appreciation. An intellectual standpoint such as this, taken by a people with regard to their national Art, did, of course, act irresistibly as a deterrent to weak or futile expression. Also, it voiced a strong matter of fact, and severe criticism, beating down remorselessly that part of the practising community wanting in the conception of originality and beauty. This, in time, set up such a high standard of excellence for the architect, that many saw their inadequacy and inefficiency with regard to the conception of a great building. Some of them devoted themselves to the small tributary streams of art which flowed with absolute certainty towards the great river of national Art—Architecture, constituting the national Art thereby, a dependent upon each of their individual efforts for its amplification. Nor was this all; for the lesser arts governed their artistic demands by the needs of the national Art, forming between them no mere "working alliance," but perfect amity of thought and unity of spirit. Here we have a very rough and necessarily incomplete exposition of the principal causes which made Italian Architecture a byword for beauty in the period we have named. It is so briefly stated as to be scarcely an outline even, but it traces the main powerful influences at work which brought about that end. Let us consider the condition of the average mind in reference to Architecture to-day. We take the average, for it is here that the bulk of opinion lies, and it would be obviously unfair to judge by the few intellectual æsthetics at the head of things. We do not think that there are many who would

wish to combat the assertion that Architecture to-day is certainly not regarded as a national art. In the ranks of the cultured practitioners themselves we have encountered profitless discussions, of interminable length and irritability, as to whether "Architecture is a Profession or an Art," or "the necessity of making Architecture a close Profession." Discussions such as these would seem to come from minds unconvinced of the nobleness of their art, and unenlightened as to the splendour of its past; nor do they see that the exclusiveness they would claim for it would act as an effective bar to that unity which we

solely dependent upon itself, its own individual impetus, and without the smallest connection with neighbouring art influences, that is, direct influences. We find all these lesser arts, which, in the thirteenth and fourteenth centuries, were tributary to the great natural stream, running independently, without aim or end in view. Nay, even completely out of sympathy with each other, which state of existence may rapidly develop into an active antagonism. Yet the strangeness of it is, that the innate excellence of each is of an advancing high order, and it cannot but be thought how lasting a mark



ELGIN CATHEDRAL. INTERIOR OF CHOIR. (See page 19.)

have seen was the cause of the Italian revival in the thirteenth century. Exclusiveness is one of the most pitiable signs of decadency in art. It speaks of removal from the open field of competitive expansion, and seems to give up its claim to power as a fighting force, or, if you would have it another way, as a regenerative influence. Little thought, however, need be expended upon such arguments; for, upon the very statement of them, we can distinctly see our side; but we have mentioned them as illustrative of the spirit reigning amongst us to-day. Again, although we cannot but look with satisfaction upon the progress attained in recent years by the "minor arts,"—the name is not our own—there can be little doubt that each exists

would be left upon Art generally were they diverted into a main current of action. There is a class of industry in Art designated as the "Allied Arts." We do not declaim against the name as false, for it is painfully true; but again it is apparent how far away is the ideal of a great unity of artistic effort when such a name is accepted. It is not that there is opposition to the unity of our ideal; but that the idea of such a unity is not even contemplated as possible under the present conditions of social existence. We do not wish to enter into a discussion of social possibilities, for such a question can be decided only by the combined and expressed will of the interested public generally. Our aim is rather to point out what has been



achieved in the past and by what means. We will not even venture to draw conclusions or a moral from such knowledge; that is left for the Art influences to resolve themselves. We cannot exercise pressure upon an awakening consciousness of latent artistic effort; but we may indicate like a vane arrow truthfully which way the wind blows. As Dr. Caird said, in one of his University addresses delivered at Glasgow, "It is in the province of the higher education to bring the mind, by the exercise of its own independent efforts, to the knowledge, not of the net results of inquiry on any subject, but of the principles on which they depend." It is in the province of higher criticism to represent each separate and limited department, not as a whole in itself, but in its organic relation with the other branches of knowledge; and if this principle is followed out consistently in its entirety, we shall not be far removed from "A Unity of the Arts."

F. B.

"**The Wayfarer**" on the **Austere** and the **Florid in Architecture.**

"THERE are two kinds of Architecture," said the Wayfarer. "One kind may be classed under the heading of Austere Architecture, and the other might, perhaps, be termed the Florid. One may sometimes encroach upon another, but, broadly speaking, these two kinds cover all the styles of Architecture that have given the grace to a nation's life. In districts such as the one I shall be wandering through during the next three weeks the Architecture will be of the austere character." "Well, but how would you define the one from the other?" I interrupted. "Oh, that's rather difficult, but perhaps I can explain by a reference to the spirit which moves the builders. The one type of men," said the Wayfarer, pausing a moment to watch the movements of an earthworm in the ploughed field in front of us, "go to their work in a frame of mind which is more discriminating, more foreseeing of the result, select and use their materials with a care and restraint that the men who build in the florid manner fail to understand. The results strike an observer as simple masses decorated here and there, as if the men felt it necessary to relieve their restrained emotions by an outburst of luxuriant decoration. These builders stand in somewhat the same relation to building as the ascetic nature does to a society. I am particularly struck," continued the Wayfarer, thoughtfully, "with the changes that take place in the growth of an Architecture. After the experimental comes the restrained, the stiff, and perhaps a little unnatural kind of work, and then comes the flowering, the bursting of all those forces which up to that time had been kept well in check. These later men, the builders of the florid through an ardent love of life, are unable to pick and choose, but must, perforce, bring their work to its perfection by an unrestrained realisation of their power. The building, less architectural, begins to lose its form amid the riot of fancy and wealth of detail, of pleasure in the parts. The eyes are attracted to the lesser rather than to the general form. Speaking for myself," said the Wayfarer modestly and with that hesitancy of speech he assumed with such effect at times, "my predilections favour the austere; others hardly as wise but more joyful have decided preferences for the florid." Here the Wayfarer stopped as abruptly as he had begun, stepped into the ploughed field, and rapidly took himself across the public pathway which separated the field into two parts. I remained on the stile watching until his long and loose form disappeared into the wood at the further side of the field.

G. LL. M.

## On Reflection.

### A National Tribute.

MR. RUSKIN's eightieth birthday which, as briefly stated in our previous issue, fell upon last Wednesday, has not been allowed to pass unnoticed. Among the many letters of congratulation and open unaffected expressions of recognition and indebtedness for the noble ideals and inspired messages with which Mr. Ruskin has enriched our literature, and purified a materialistic and health-perverted age, none surely will be more acceptable, in the twilight of his declining years, than the address presented to him on behalf of the various Ruskin Societies existing in England. It is significant of the wide assimilation of Mr. Ruskin's lessons that this address has been signed by most of the members of the Royal Academy. The almost affectionate fervour of this address is such as would have prohibited its publication in the daily press, were it not that the sentiments expressed therein must awaken the sympathetic accord of all thoughtful people, whatever their opinion of the practical value of Mr. Ruskin's theories, or their susceptibility to his spiritual and emotional passages. All denominations, without distinction, must revere this great mind—this noble nature. His is a type that, whatever the motive may be that inspires its activity, must in all ages to the end of time command the ultimate veneration and devotion of clean, unsophisticated humanity. Not only has Mr. Ruskin urged an aim in life, and an ideal, which shall rise high above the coarse rule of expediency and custom, and a loftier ambition than the attainment of power and adulation, but he has sustained these ideals in his person and exemplified them in his own living. He has not only written his convictions and his theories, he has taught them by the magic of his personality and the skill of his own hand; he has subsidised schools, he has set his purse at the service of such of his students as seemed best able to benefit by foreign study, he has given away his fortune to advance the cause to which he is devoted, and it was only the other day that the volume of letters and diary excerpts relating to the pre-Raphaelites, published by George Allen, revealed how indebted the "brotherhood" was, not only to the master's encouragement and championship, but to his liberality. No reward of popular recognition or public honours ever had place in Mr. Ruskin's scheme of a ripe and perfect destiny; but he has known the bitterness of seeing the cold irresponsible acceptance of his most single-hearted labours, and it is pleasant to know that he has lived to see the leaves of the laurel entwined in that Crown of Wild Olives of which he has told us, and of which he, first of all men, is assuredly the wearer.

### The R.I.B.A. Prize-Winners.

A WRITER in the February issue of "Architectural Association Notes" calls attention to the frequency with which the prizes offered by the R.I.B.A. are won by members of the Association. Thus, during the last ten years a member of the Association has won the Essay Prize three times out of the six occasions on which it has been awarded; the Measured Drawing Prize, five times out of ten; the Soane Medallion, three times out of seven; the Pugin Studentship, five times out of nine; the Owen Jones Studentship, three times out of seven; the Tite Prize, four times out of nine; and the Grissell Prize twice out of seven. Of the subsidiary prizes, a large percentage also have gone to members of the Architectural Association. The remaining prizewinners have, for the most part, been Scotchmen, who are notorious both for the frequency with

which they appear on the prize lists and the excellence and personal force of the work with which they win their distinctions. This year the Edinburgh Association has been congratulating itself on the fact that three of its members have taken the three most coveted of the Institute Prizes, namely, the Soane, Owen Jones, and Pugin, while yet a fourth has been awarded a special prize in the last-mentioned competition. Mr. Fulton, whose work may be considered to have won first distinction in the late exhibition at the rooms of the R.I.B.A., hails from Glasgow, in fact, the discriminating connoisseurs of architectural draughtsmanship can ascribe his habitat and the scene of his early training to that city, by virtue of some special quality in his work.

### An Architect's Memorial.

It is to architects that the first legislative steps dealing with public advertisements will probably be due, for we cannot doubt that the memorial circulated at the instance of the Society for Checking the Abuses of Public Advertising, signed by 400 architects, and presented to the London County Council by Dr. Longstaff, will be instrumental in securing powers for the Council under which they may control the monstrous impositions of advertising patentees and agents. It is inconsistent with the discretionary powers the Council already hold for beautifying and adding dignity to the City, that the subject of public advertisements should be outside its jurisdiction; and the suppression by an appeal to Government on the part of the St. Martin's-in-the-Fields Vestry, of that ingenious advertising speculator who sought to make the architectural monuments of the metropolis screens for magic lantern advertising slides, indicates that the supreme authorities are not insensible to the impertinent encroachments of private advertisers upon what are undoubtedly the rights of citizenship. The magic-lantern operator who began to specialise on the Nelson Column with dancing coloured pictures glorifying beef tea and feeding bottles, assumed more than that share in a public memorial which he held only in common with every other citizen. Although no right of prospect can be established at Law, the only reason why an offence to the eyes is not recognised as a nuisance along with outrages to the senses of hearing and smell, is that it has been left to this latter end of the nineteenth century, with its wealth of scientific discovery and mechanical invention, to devise methods of annoyance by light and colour which can rival the ordinary offences of discordant noise and noxious smell. The memorial called the attention of the Council in particular to the illuminated advertisements which have multiplied so greatly during the past two years. As regards ordinary advertisement notices, the suggestions made in the memorial may be summarised as follows:—(a) A limit of height to be prescribed, above which there should be no exhibition of letters or other speaking emblems. (b) A limit to the size of letters in any position. (c) A rule that the space occupied by advertisement placards or letters should not exceed a certain ratio to the size of the building to which they are affixed. We confess a certain regret that the memorial does not lay more stress upon the advertisement hoardings which deform a large part of the beautiful counties lying round London, where both high road and railroad are lined with these abominations.

The memorial of Archbishop Benson, in Canterbury Cathedral, has been promised for completion by July 8th, and the unveiling has been fixed for that date.



ELGIN CATHEDRAL. CHAPTER HOUSE  
STALLS.

## ELGIN CATHEDRAL.

BY HENRY F. KERE, A.R.I.B.A.

*(Continued from page 5.)*

THE window over the west doorway is inserted in the first quarter of the fifteenth century. Messrs. McGibbon and Ross point out that the coat of arms on one side of the arch is probably that of Bishop Columba Dunbar, who ruled over the see from 1425-1435. Together with almost all the work of this wonderful building, this window is designed with rare and charming gracefulness.

Considerable alterations had evidently been made at this end at a late period, and also to the inner member and tympanum of the west doorway. From the inside we see the evidence not only of style but of masonry. And in the side walls of the tower, the arches and brackets are also of late date, very similar to the work which we shall now see in the chapter-house.

Of the chapter-house the masonry of all the bays, except the south, has had new windows of less size inserted. The original buttresses and walls were evidently retained. Judging by the design of the buttresses, which are strongly suggestive of the choir ones, and also taking into account the detail of the string mould under the window sills which recalls that under the great eastern windows, these buttresses and walls were erected just after 1270 or thereabouts.

Whether the chapter-house had been injured by the royal ruffian, already mentioned, in 1390, or otherwise, it seems that it was either Bishop David Stewart, or Bishop Andrew Stewart who remodelled it to the excellent form left to us.

The walls were thickened by being corbelled inwards, the corbel course of a most luxurious character. The central pillar is of exceeding chasteness of proportion, and fitly performs its part in carrying aloft the beautiful vault.

The bishop's stall is in the centre of the north wall, and on either side are two cusped panels supported on carved corbels, of kindred design with those we saw on the tower walls near the west doorway.

We get a better idea of the interior of the chapter-house doorway as we leave.

At our left hand is the fragment of a shaft and a cap, both of elegant design, but what part of the building they graced I am unable to conjecture.

I have indicated in the following paragraphs what I conceive to be the chronological sequence of the remains.

1st. Existing previous to 1224 the south and

north transepts, and part at least of the north wall of the choir.

2nd. Of date immediately subsequent to the foundation of the cathedral here, part of the clerestory of the north wall of the choir, the west towers and arcade over the west door, and the fragments of the clerestory of the nave adhering to the towers.

3rd. Of date probably subsequent to the fire of 1270, the choir, the shell of the chapter-house, and in the nave the south porch and the adjacent window jamb indicative of the nave being then of five aisles, and the west door.

4th. Following the year of the destructive fire of 1390 the rebuilding of the choir aisles.

5th. Probably during the Bishopric of Columba Dunbar (1425-1435), the west window of the nave, and perhaps the westmost window of the two remaining nave aisle lights.

6th. The chapter-house new windows and corbelled out walls, the central pillar and vaulting, date from 1482-1501.

Glasgow, Aberdeen, and Elgin are the only Scottish Cathedrals which had the western towers. The west towers of Elgin measure in their ruinous state about 85ft. from the floor of the church. They were capped it appears with wooden spires. Elgin had the more usual feature of a central tower over the crossing, also capped by a wooden spire. The latest spire is reported to have been 198ft. high, and was probably of somewhat similar design to that of Glasgow, which measures 219ft. high from the floor of the nave.

We have not many chapter-houses remaining in Scotland. Evidently in the majority of cases the chapter-house occupied the position of one of the choir aisles—for example, at Dunblane, Dunkeld, and in the first building of Elgin. Glasgow and Elgin have detached chapter-houses, the former square, the latter octagonal.

Iona and St. Andrews followed the more usual English fashion of having the chapter-house entered from a cloister, either on the north or south side of the church.

There is no Scottish Cathedral except Elgin with five aisles to the nave. St. Giles (Edinburgh), Manchester, and Oxford Cathedrals have chapels or extra aisles more or less developed. Chichester, however, in this respect is very like Elgin, although of smaller dimensions.

THE  
ARCHITECTURAL ASSOCIATION.HOW STAINED GLASS WINDOWS  
ARE MADE.*(Continued from page 6.)*

AT the conclusion of Mr. Christopher Whall's lecture on "Stained Glass," reported in last week's BUILDERS' JOURNAL, the Chairman, Mr. G. H. Fellowes Prynn, expressed the opinion that the informality of Mr. Whall's address was not in the least detrimental to its interest. If there was one subject upon which architects knew very little it was glass painting. Over and over again one saw tremendous ignorance displayed by architects who were supposed to supervise the work. This arose simply from the fact that they had not grasped the craftsman's side of the work. The architect was not altogether to blame, because so many of the glass firms were simply firms, not draughtsmen; the men who were able to make the best sketches were not able to carry out the actual design. It was the wish of architects to study the crafts as crafts; it was opportunity they lacked, and one of the things the Architectural Association was trying to do for its members was to enable them to get a more thorough knowledge of the crafts with which they had to deal. Architects wanted to be very much more in touch with the actual craftsman than they were. In glass working there was very much that must appeal to the architect, owing to the artistic nature of the craft. But it was rather puzzling to observe the different methods of glass workers. One glass artist would tell you that he would not use stippling on any account; one would depend very much for his effects upon his painting on the glass; another would prefer to use greens as whites, thinking the whites too glaring; while others would do just the reverse of these things. With all due deference to Mr. Whall, he should be sorry to condemn the use of green as altogether wrong, though he fully appreciated the value of getting true whites. He thought the working up of small sketches in the actual glass, as suggested by the lecturer, was a capital plan, as it would give the architect and his client a better idea of what the window would be.



ELGIN CATHEDRAL. NORTH DOORWAY.

INCISION OF 1270 DOORWAY INTO 1224 WORK.



Mr. Francis Bond said that, though he had never designed or made a stained glass window, he had had opportunities of seeing much of the best of the old stained glass. He sympathised strongly with Mr. Whall on the subject of green glass. Wherever he went he saw nowadays the substitution of green for the beautiful pearly white. At Mansfield College, Oxford, for instance, the windows were filled with glass from Burne-Jones' cartoons, but all the backgrounds were this abominable green. He could not imagine how this green had crept into the windows. At the end of the twelfth and the beginning of the thirteenth century, when the glass workers did not know how to produce pure white glass, they were obliged to put up with a horny white—a sort of pea-soup green. But as the making of glass improved the use of green was given up.

#### Ancient and Modern Work.

We should copy the perfection of the fifteenth century glass rather than go back to the archaic work of the twelfth. It was a delightful thing to see a window that was nearly all pearly white; many of our ancient churches had been disfigured by this green glass. Mr. Bond proceeded to speak of some of the later specimens of French glass at Rouen and elsewhere. With these he was extremely disappointed, there seemed to be far too much colour in the windows. In the fifteenth century in England we had pearly white glass with as little colour as could possibly be got into the window—a little bunch of red on one side perhaps, and blue on the other—that was the kind of window he should like to see revived. Another point suggested by his observation of French windows was that it was a mistake to have whole scenes represented in stained glass windows—of course there was plenty of precedent for it, but the whole thing was wrong. To try and copy the conditions of a glass painting in stained glass was quite a mistake.

#### Architect and Craftsman.

Mr. H. W. Pratt thought it was questionable how far a knowledge of the craft was serviceable to the architect, if he was not going to carry it out in a practical way. He might acquire a certain amount of information that might be of some use to him in designing geometrical work; but he (Mr. Pratt) thought the architect's sphere in stained glass work was practically limited to the subjects to be introduced, and the scheme of colour. At a craft school, where elementary work only was gone through, the colour question hardly entered into the teaching. He understood that most of these classes were for young fellows who were going to be brought up to the trade. It was a matter of consequence to the architect that any windows to be put into a building under his direction should not counteract the architectural treatment of the window; and in that respect it would be well if the architect and stained glass designer could work together. But he could not see how the architect would be helped by being trained in a craft school, seeing that he was not to have very much to do with the actual carrying out of the work. In respect to carpentry and masonry, where drawings and details had to be prepared for execution, it was desirable that the architect should have a knowledge of the actual construction; but stained glass work stood on a different basis. To get a knowledge of colour and design was more important than a knowledge of the actual craft of lead work.

#### Painted or Stained Glass.

Mr. Francis Hooper remarked that Mr. Whall had told them more about painted than about stained glass. Referring to the samples of work, he was glad to learn that these were by the pupils, because they seemed open to criticism at many points. Was it not possible to draw in such a way that the lead should represent the design? He believed it used to be specified that two-thirds of the glass was to be white. White glass seemed to be rather a reasonable background, inasmuch as most windows were intended for the admission of light. Beautiful effects were often obtained without any painting at all.

Mr. Flower asked how the objectionable

practice of wiring might be avoided. Would it be possible to have an extra thickness of glass outside, or to strengthen the glass itself so that it might safely stand alone? He would also like to ask how wide the leads might go, because in much work some of the effect seemed to be due to the width of the leads. Adverting to the question of green or white backgrounds, he referred to the windows in the ante-chapel at New College and to those at Holy Trinity Church, York, as examples of beautiful work containing a large proportion of pure white. The green phase seemed to have come in with the windows of Burne-Jones at Oxford; he hoped that it was a passing fashion, and that they would get back to the white.

#### Questions about Colour.

Mr. D. T. Fyfe asked for some information on the limitations of colour as applied to stained glass. Would Mr. Whall give a few remarks as to his theory of colour?

Mr. M. Garbutt said that the need for allowing light to pass through the windows should not be forgotten. Therefore pure white should be used rather than green, and for the deepest dark something far removed from black. The artist who did not use white, limited his palette very much. Many stained windows would be quite satisfactory if all the painting were struck out. He quite agreed that architects ought to understand more of the craft; to pretend to superintend work, of which they knew nothing, seemed to him the height of bumpiness. The man who had just an amateur knowledge was likely to do much better than one who was entirely ignorant.

Mr. T. J. Lucas asked, how many colours should be introduced into one window. If one colour was found, when the window was put together, to be unsatisfactory, how could it be altered?

#### A Bad System.

Mr. Christopher Whall replied at length to the points raised in the discussion. One must not, he said, cast blame upon anyone for the state of any particular art. We were all more or less the victims of a phase of feeling that preceded us, and took the form of a great deal of false teaching. For instance, the Gothic revival was to a large extent a theoretical and academic thing, and, unfortunately, it produced on an enormous scale a very defective system of art education—the entire disassociation of art from the crafts, which was embodied in the system known as the South Kensington system. One of the things resulting from this was the subdivision of labour which resulted in the practices of the stained glass firms, so that it required a certain amount of artistic heroism to pick up the whole of the craft. We were all the victims of that system, and it was useless to discuss who was most responsible for what was—it might be hoped—a state of things that was passing. He was glad to see so general an agreement with his remarks about white glass. He would not, however, discard the use of the greeny white; he only pleaded that, in the highest light of the window, pure white should find a place. As to whole scenes being painted on a window, the feeling seemed to be becoming more and more general that this was not wise. But it was not a thing on which to lay down hard and fast rules; if the worker observed the limitations of his craft they would sufficiently neutralise the realism of the thing to make it an appropriate form of decoration.

#### The Craftsman's Qualifications.

The stained glass craftsman ought to be to a great extent in wish and feeling an architect himself. He should look at the position and say: "I have not an open field to work in; I have only that particular field." A craftsman, who was also a designer, was almost certain to work in sympathy with the work of his brother craftsman, the architect. As to the streaky and cloudy effects, concerning which a question had been asked, Mr. Whall said that a good deal of cloudiness of old glass was caused by the corrosion of the surface due to age; this could not be, and ought

not to be, imitated. But there were streaky glasses made so partly on purpose, partly by accident. When the glass was made in pots it was, of course, coloured by the admixture of powders—oxides of various metals. As one got towards the bottom of the pot, more and more of the powder was left, and the glass worked up more and more in streaks. That was a valuable resource; the craftsman looked for those streaky bits and on occasion got beautiful effects by their use. On the question of stained versus painted glass, there were all sorts of opinions. Some purists held that no mat should be put on at all; and there was very much to be said for this plan. If one had a large amount of money and time to spend in obtaining the best possible specimens of glass, he could conceive that one might dispense with painting. But, generally speaking, some painting was needed to avoid the enormous labour of getting a satisfactory mosaic with the pieces of glass themselves; the very slightest film would bring the colours into a harmony that could not otherwise be obtained. On the other hand, there was a great danger of over-painting the glass. The rule was always to get to the clear glass for the high lights; in large portions the mat should be brushed clean away. The glass would not look glassy if it were filmed all over.

#### Leading and Wiring.

As to the use of the lead, there were certain things one must lead; where there was a difference of colour a lead must be put between; but to lead up every little part—as in the thirteenth century, when glass was cut by heat only—would involve limiting the design to a very great extent. He had always found it a good rule—since leading emphasised everything to which it was applied—to distribute it fairly and evenly over the whole of the picture. With regard to protecting the windows by wire, he hated the wire, but it must be remembered that there are such things as boys—and stones. He had put a wire guard outside a window in a public school, but ingenious youth managed to put its football through both guard and window. The alternative was putting a sheet of heavy glass outside, but the effect was very disagreeable from the outside.

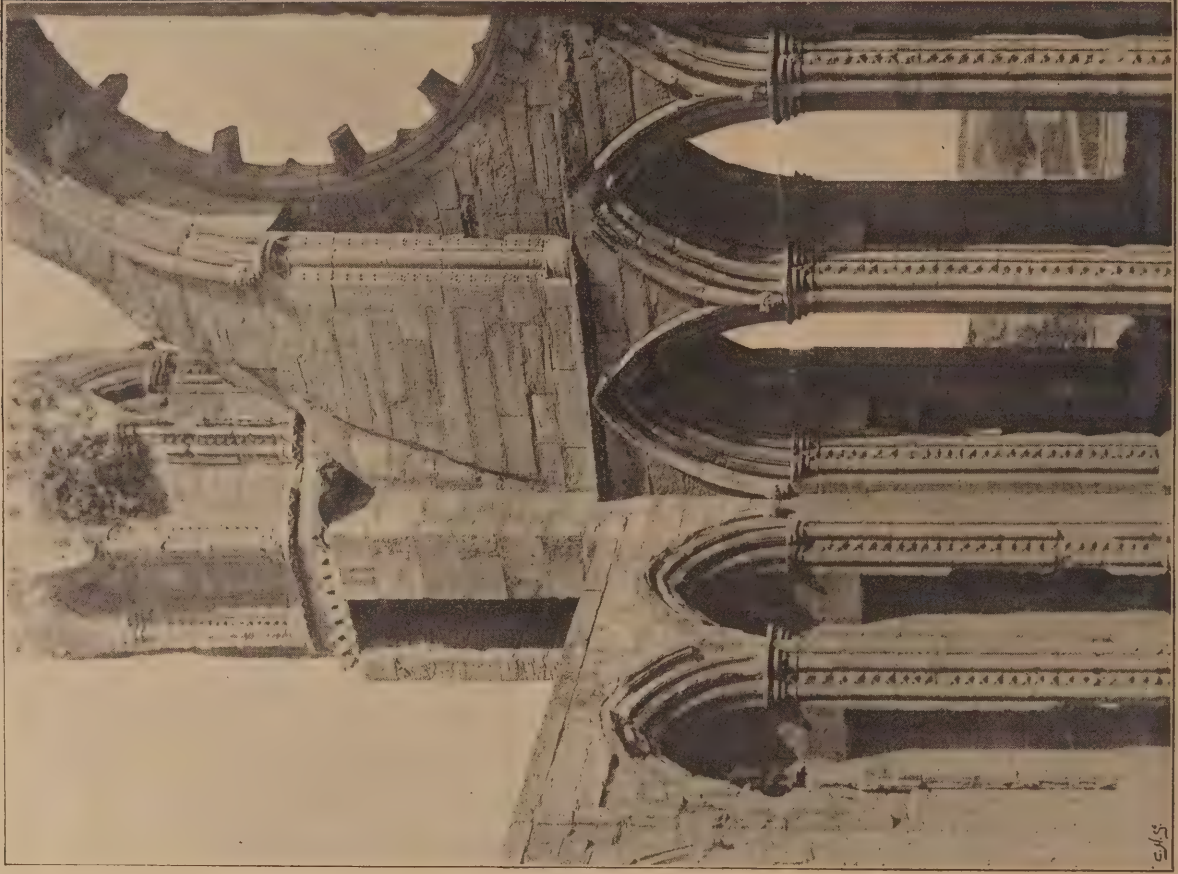
#### The Choice of Colour.

One could, of course, use any thickness of lead, but half an inch was practically large enough for anything. It was very difficult to say anything about colour that would be practically useful. He liked the plan of using many varieties of one colour; in the great east window in Gloucester Cathedral—a magnificent specimen of fourteenth century work—though it was all in red and blue, there were hardly two pieces of blue alike. He did not limit his palette as to the range of colours; if he liked a thing he used it, but, of course, it required a great deal of discretion to be able to use a wide range of colour effectively. Domestic work should be limited to the quieter colours mainly, but in a large dignified building unrestricted freedom might be used in the choice of colour. He had been asked: "How does one alter mistakes?" He wished he knew. Some beautiful effects were got by doubling the glass, especially in the case of purple, which was not so well made nowadays as in earlier times. But, of course, this doubling made the work very expensive. In conclusion, Mr. Whall reverted to the question of the architect's position in reference to the craft. It seemed to him, he said, that a simile from music may be very much to the purpose. No composer had ever conducted an orchestra as a composer only. All the great composers were practical performers; that did not imply that they could play all the instruments of the orchestra. Students of music were required, in addition to their piano or organ studies, to take up the study of one or more of the orchestral instruments, the assumption being that such a study would give them a sympathy with the whole, and enable them the more wisely to direct the orchestra. So the architect might reasonably say: "If I learn one of the crafts fairly well, I shall be more in sympathy with the whole and better able to direct them to a good end."

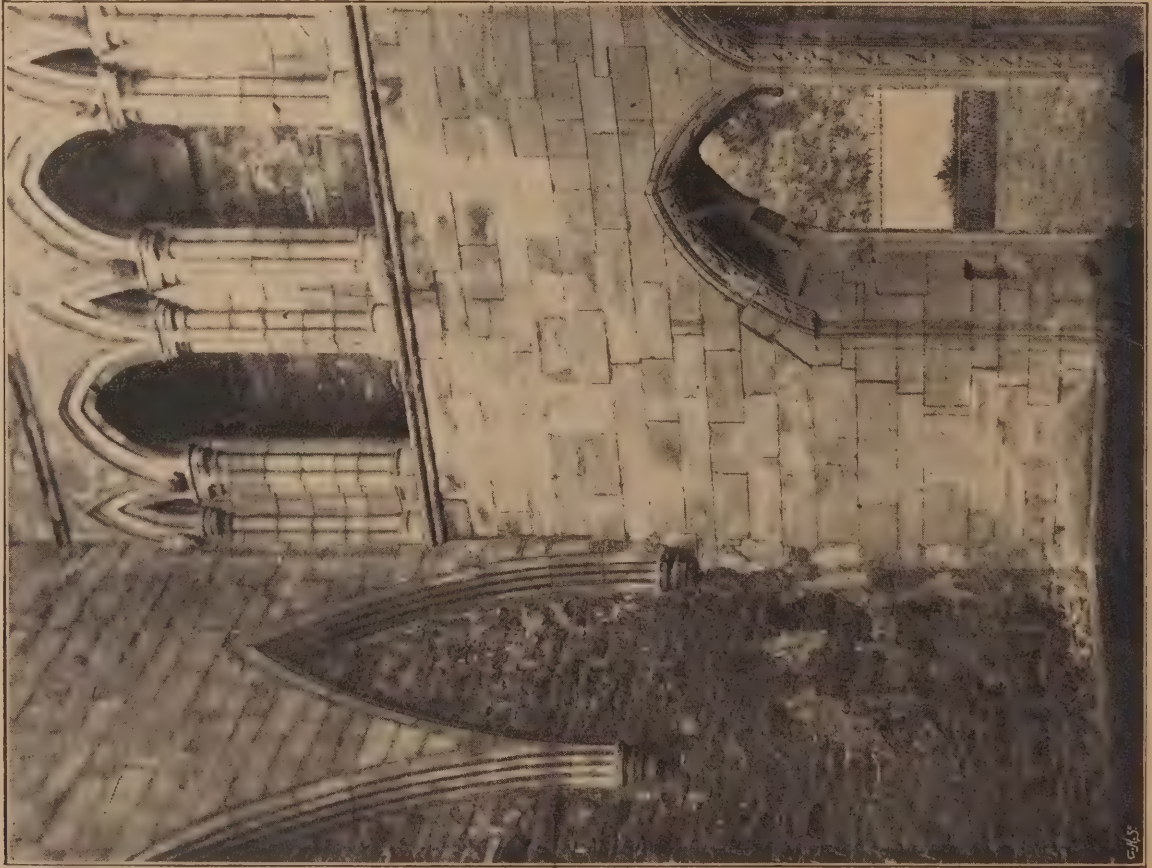


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DETAILS OF INTERIOR OF EAST GABLE.



INTERIOR OF WEST DOORWAY.





SOUTH TRANSEPT AND WEST TOWERS.  
ELGIN CATHEDRAL.



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IN THE  
COLLEGE OF ALLEN

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## REDECORATION OF FISHMONGERS' HALL.

IN the course of last year the Court of the Fishmongers' Company decided to re-decorate their great hall with the entrance and main staircase leading to it. Mr. Crace was invited to assist the Company's surveyor, Mr. H. Chatfield Clarke, in reporting upon the treatment desirable; and their joint report was adopted by the Court. The works decided upon were carried out during the autumn, and completed before Christmas. The previously existing decorations were executed thirty years ago under the direction of Owen Jones; and some of the work then done remains in the reception rooms adjoining the Hall.

The building itself was erected in 1831 from the designs of H. Roberts, and is in the rather cold "Greek" character affected at that time. The late Sir Gilbert Scott, who was articleed to Mr. Roberts, took some part in supervising the erection. It was an instruction of the Court to Mr. Chatfield Clarke and Mr. Crace that the architectural detail and character should in nowise be disturbed. This has been strictly adhered to; but a much warmer and more "hospitable" result than before has been attained by the colouring, of which the following is a brief description.

The square entrance hall has a flat coffered ceiling divided by flat beams, and walls divided by pilasters, has the wall spaces of a lively Pompeian red, the pilasters, frieze and cornice being of a vellum tint, relieved in the frieze by a moderate amount of ornament executed in dull yellow and chocolate-brown. The pavement here, as also in the adjoining staircase corridor, is of marble mosaic, laid out on a simple geometric scheme in mixed shades of white, with bands of black, light red, grey, and yellow.

The corridor in question and the lower story of the grand staircase, to which it is open on one side, have also red as the ground colour of the walls; at the top a frieze is painted in light ornament upon the red ground, interrupted at intervals by panels or medallions, with dark grounds. Below, a dado of simple Pompeian character is worked on a darker tone of red. The large piers at intervals are in light colour, with bronze and gold enrichments; and the ceiling is vellum white with grey-blue panels, and some relief of bronze and gold in the mouldings. The doors and other work here and throughout are of oak, once French polished, but now bared of polish, brought to a natural surface of quiet tone, and wax rubbed, the mouldings being gilt.

In the grand staircase the red is continued up to the gilt string course on the first floor level, the niche in which Walworth's statue is placed being gilt, as also are the metal balustrades throughout. Above this level the walls are panelled as well as being broken by scagliola pilasters and columns, by two doorways, and by a large triple window. In the panels are full-length portraits, the panels and margins being in two low tones of green, divided by mouldings in gold and vellum. The ceiling here is also goffered in square panels, now in quiet, light blue, with gilt centre flowers; and the enrichments of the cross-beams, mouldings, &c., as also of the cornice and architrave, are mainly in bronze and gold. There is a rich maroon ground in the frieze, intended for inscription.

The triple window of three equal lights (originally filled with ground glass and coloured margins) is now glazed with beaded glass, of which the design is expressive of the sea fisheries, the general ground being white, ornamented with sea plants, fish, and festoons of nets, while the borders are formed entirely of seaweeds and crustaceans, all carefully drawn from nature. In the centre of the middle light are the Company's arms and supporters, while on either side are the arms of the former companies of Stock-fishmongers and Salt-fishmongers, which were united in the existing Company in 1535.

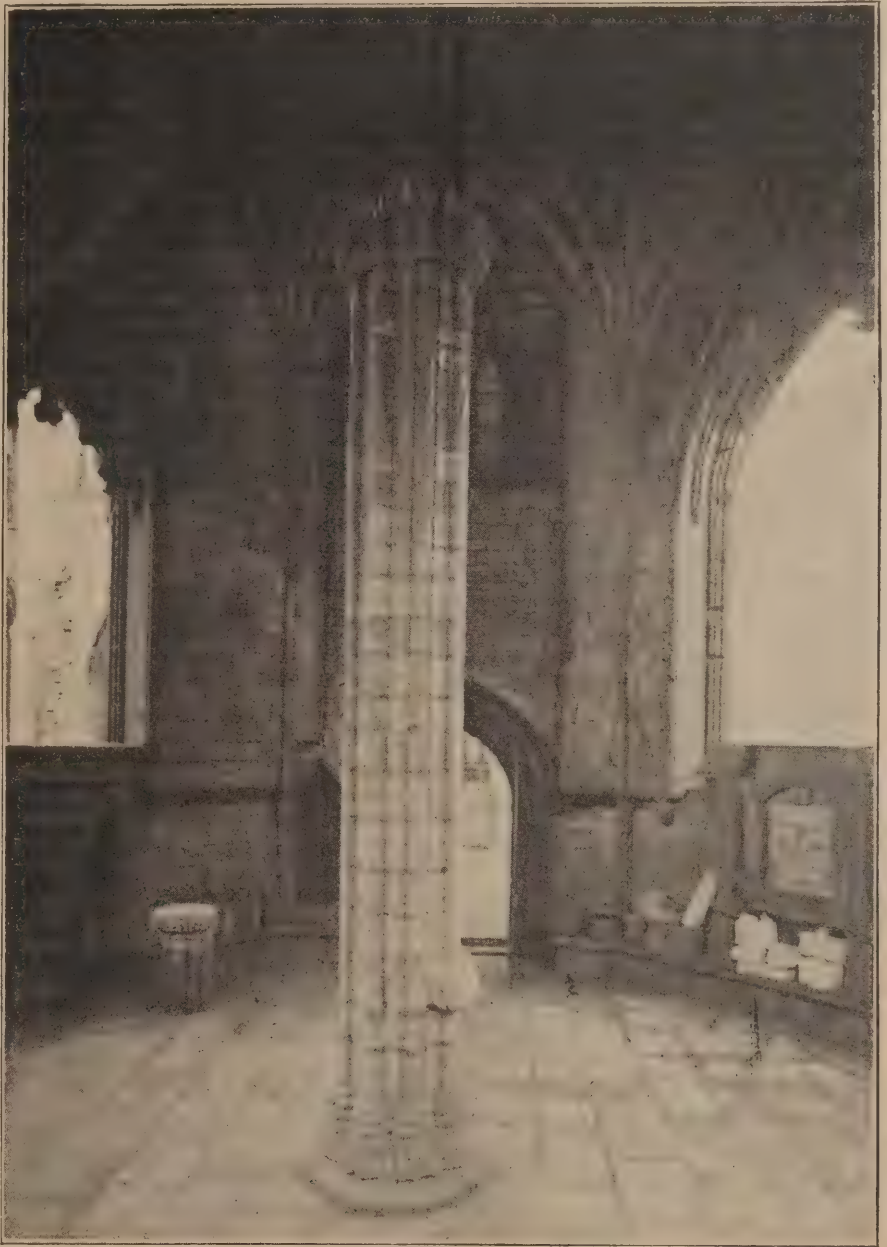
The Great Hall, with five windows on the east front, has its ceiling, which rises

on a low elliptic section, also divided into rectangular panels with bold flowers in the centre. These are divided into groups by bold bands of Greek guilloche ornaments, which have been solidly gilt with good effect, as have also the centre flowers, the panels being light blue, and the mass of the ceiling margins and framework being broken white. The deep cornice and frieze are in light tones, with the enrichments boldly gilt, and a dull red background to the scroll of the frieze. The scagliola pilasters remain, and the walls are painted in low-toned green as a ground for the pictures, whilst between the bronze and gold capitals of the pilasters, and close under the frieze, are ranged the interesting series of old carved and gilt shields which

## NOTES ON EDINBURGH ARCHITECTURE.\*

BY THOMAS ALLAN CROAL, F.S.A. (Scot.)

WHILE I must not discuss the weary question of a site for the Usher Hall, I have to notice that, as regards the site chosen, the report by Mr. Waterhouse deals with the two points which I had in my mind when settling the subject of this paper. I am to speak of the "Placing of Buildings," and of the exits and entrances of public places. Now what does Mr. Waterhouse say about Atholl Crescent? After admitting that



ELGIN CATHEDRAL. INTERIOR OF CHAPTER HOUSE. (See page 19.)

commemorate the arms of the Prime Wardens from early in the seventeenth century. The woodwork here, as elsewhere, is of wainscot, now freed from polish and with the mouldings gilt; and a dado of similar wainscot panelling has now been added to connect the rest. A good effect is obtained by making the walls of the Music Gallery of a dull red. It is to be regretted that the old inharmonious and ill-designed heraldic windows of the two end clerestory lights have been allowed to remain with the new decoration, with which they are necessarily discordant. The electric lighting has been carried out by Messrs. Verity, of Regent Street, and the whole of the decorative works by Messrs. Crace, of Wigmore Street.

it "presents, in some respects, an attractive site," Mr. Waterhouse proceeds to say, "I think I need hardly point out that the north is the worst possible aspect for a beautiful work of Architecture." He then speaks to this effect that it would be difficult for the public to approach the hall, and that if the hall is made capable of holding an audience of nearly 4000 persons, "that would be a serious disadvantage." First, then, with regard to the placing of buildings. In what way will "a beautiful piece of Architecture" (to use Mr. Waterhouse's words) be best

\* A paper read before the Edinburgh Architectural Association on Feb. 8th.



placed so that its beauties may be fully appreciated? And, second to that, what illustrations in the way of teaching and warning has Edinburgh to give us? The formula is very short—"Place it in the sunlight." Or, if more is required, let me quote Mr. Waterhouse again: "It should be more or less surrounded by lawns and trees, as nothing, in my humble judgment, so much enhances the enjoyment of fine Architecture as the softening influence of neighbouring vegetation." "Placed in the sun," and "surrounded by lawns and trees"—how many buildings in Edinburgh answer to those two requirements? Doubtless the demand for trees and lawns is, within a city, a counsel of perfection. The space is often not available, and in many places trees and lawns will not grow. But in Edinburgh we have had space enough, and, although Lord Cockburn long ago laid it down as an axiom that there was nothing an Edinburgh architect or builder hated so much as a tree, yet they will grow if we give them a chance. "Placed in the sun." Is not this the secret of the beauty to the eye presented by the General Register House? The suavity of tone of that building grows year by year—it is a thing of beauty and remains a joy for ever. No doubt part of this is due to the grace of line and dignity of detail in the building itself. But much is due to the site—that is to say, that the front and principal feature basks in the sun—the building is best seen on its own proper front. Here, no doubt, the lawns and trees are necessarily absent. But let us take another instance, from the same architect, and ask ourselves whether the north side of Charlotte Square—that group of houses which Edinburgh architects and Edinburgh taste have declared they "will not willingly let die"—not even for the Usher Hall!—whether this range of houses does not owe some of its charm to the combination of a sunny frontage and "the softening influence of neighbouring vegetation?"

#### The "Right" and the "Possible."

In seeking further into this matter, we must not be unmindful of the aphorism Mr. Ruskin puts in the forefront of his "Seven Lamps of Architecture." He gives, as the rubric for his initial paragraph, the following:—"Aphorism I. We may always know what is right, but not always what is possible." He then speaks of the consideration of the "doubtful, and in some sort, inexplicable relations of capability, chance, resistance, and convenience as preceding, or even superseding, the determination of what is absolutely desirable and just," and says it is no wonder that "sometimes the too cold calculation of our powers should reconcile us too easily to our shortcomings." Seventy years ago Mr. John Britton collaborated with Mr. Thos. S. Shepherd to produce their well-known series of views of Edinburgh. The "critical" illustrations promised in the introduction deal only with praise, and the views, with a perverseness to my mind almost criminal, show many of the north fronts in a blaze of sunshine, while one building, which evermore basks in what sun we have, has its front thrown into shadow! Several buildings—as instances, the University and the Physician's Hall, formerly on the site of the Commercial Bank—have the sun on them such as we could only see about four a.m. at midsummer, and so we must believe that seventy years ago we were much earlier risers than now, for the streets are in each case thronged with fashionably dressed ladies. They might, of course, be going to "morning concerts!" I have in my possession two works on Architecture professing to say something about choice of site, one published about 1730 and the other about 1830. In the latter book, except an exclamation to be quoted later as to the burning of London, I find nothing germane to my subject. In Mr. Robert Morris' somewhat pedantic lectures on Architecture, delivered before the Society of Arts in 1730-34, a very few words are to be found in connection with my subject.

#### The Scott Monument.

What are the buildings in Edinburgh which suffer in effect because of their position as

regards sunlight? Will you be surprised if I name first the Scott Monument? That it is an ornament to Princes' Street; that it is in itself a choice bit of work; that it is a notable memorial to a notable man, and appropriate in design for such a man—all these things may be freely granted by all. But they do not touch the present complaint, which is that the structure is so placed that it is not seen at its best in front. I have viewed the monument under all circumstances—morning, noon, evening, and midnight, and from all sides, and the conclusion is that from the front it looks least admirable of all! There was a time when for a few months I went to business at 4 a.m., and though that is nearly forty years ago, I have the most vivid and delightful memory of how the Scott Monument looked in the full moon with the city lying deep in the virgin snow. From the North Bridge it is needless to look at details, and as the Monument stands "four-square to every wind that blows," the fault I now point to was not then discernible. It was then simply a rarely beautiful sight, one of many seeming marble palaces set, for the time, "in pictures of silver." The best view of the Scott Monument is to be had in the late afternoon from the south-west, and even at this point we must go from detail to general. If then the present site was—in Mr. Ruskin's words—the best possible, it can only be a living regret that the "right" and the "possible" fell so far asunder.

#### What Might Have Been.

If I am asked "where would I have put it," I might decline to answer, for "This Sixty Years Since" the site was chosen, and what is done cannot be undone. But I might make one suggestion. Suppose the (then) mean houses in Princes' Street, from St. Andrew Street to St. David Street had been removed, and a crescent-shaped row had been built, the Scott Monument might have been placed in the semi-circle, where it would have looked its best, facing the sun, and thus *best seen by those passing in front of it*. By such a course, another objection recently brought to my notice would have been obviated. I had recently through my hands, in preparation for the press, a work on a notable era in Scottish history by a most enthusiastic American, a man well learned in Scott and Scotland. He asked, in a chapter dealing with Edinburgh, why Scott was placed with his back to the Old Town he knew and loved so well, and his face to the New Town and the triflers of to-day? I am not able to say whether this complaint will ever see the light in print, but I said to the writer "You would not propose to turn the statue round now would you?" and his reply was an emphatic "I would turn it round to-morrow if I had the power."

#### Other Ill-chosen Sites.

Let me proceed to point out a few additional cases. There is the University, so hemmed in on its front and its sunny side that it can never be seen, and with only its plain and grimy north side laid open to view. You have to go inside to see its best front!—in this perhaps it resembles Trinity College, Dublin, where such an Irishism is more at home than with us. There is Heriot's Hospital, which has had its front door at the back all my lifetime, but which formerly was entered from the north. There is the Royal Infirmary, but the position of the administrative front is here perhaps excusable, because the pavilions must have the sunny side. There is the Museum of Science and Art, carefully provided on the wings with a heavy cornice to keep off the sun that never shines and the heat that never comes, and in the centre an open glass front to the cold north! Supposing the last case to have been inevitable—the only "possible" and therefore, in spite of Ruskin, "right"—why are the new University Buildings and the Students' Union found now repeating the same error? For it may be accepted as axiomatic that the best view of any building should be obtained from *its own proper front*, while it is almost true that the vast majority of our public buildings are worst seen when we stand directly in front of them. And

then so few are "true all round," like that sailor's tartan waistcoat, or like Heriot's Hospital, which has a complete front each way. If we take Fettes College, it is so grandly placed that the slight "sluminess" of its rear view does not offend. But how many buildings do we see whose back elevations, although on the sunny side, are of such bald style as only to show a deformity? Professor Blackie described the aspect of Barclay Church from the south as like "a herd of elephants and rhinoceros, with their hind-quarters towards you." But some of our buildings show not even the natural contours of a rhinoceros.

#### R. L. Stevenson's Protest.

It is perhaps notable that such of our critics as notice the subject often dwell upon the error made in laying out the earlier New Town. In the "Picturesque Notes" of R. L. Stevenson is found the following:—"If he (the architect) had so chosen, every street upon the northern slope might have been a noble terrace, and commanded an extensive and beautiful view. But the space has been too closely built; many of the houses front the wrong way, intent, like the Man with the Muck Rake, on what is not worth observation, and standing discourteously back-foremost in the ranks; and, in a word, it is only from attic windows or here and there at a crossing that you can get a look beyond the city," &c. Now Stevenson has elsewhere in the same volume dilated on the surprises of the views from streets and houses in Edinburgh—I refer to the chapter where the words occur "you look down an alley and see ships tacking for the Baltic" and although the sentences are not exactly contradictory, they are sufficiently at variance to embolden one to criticise the first quotation.

#### A Dismal Street.

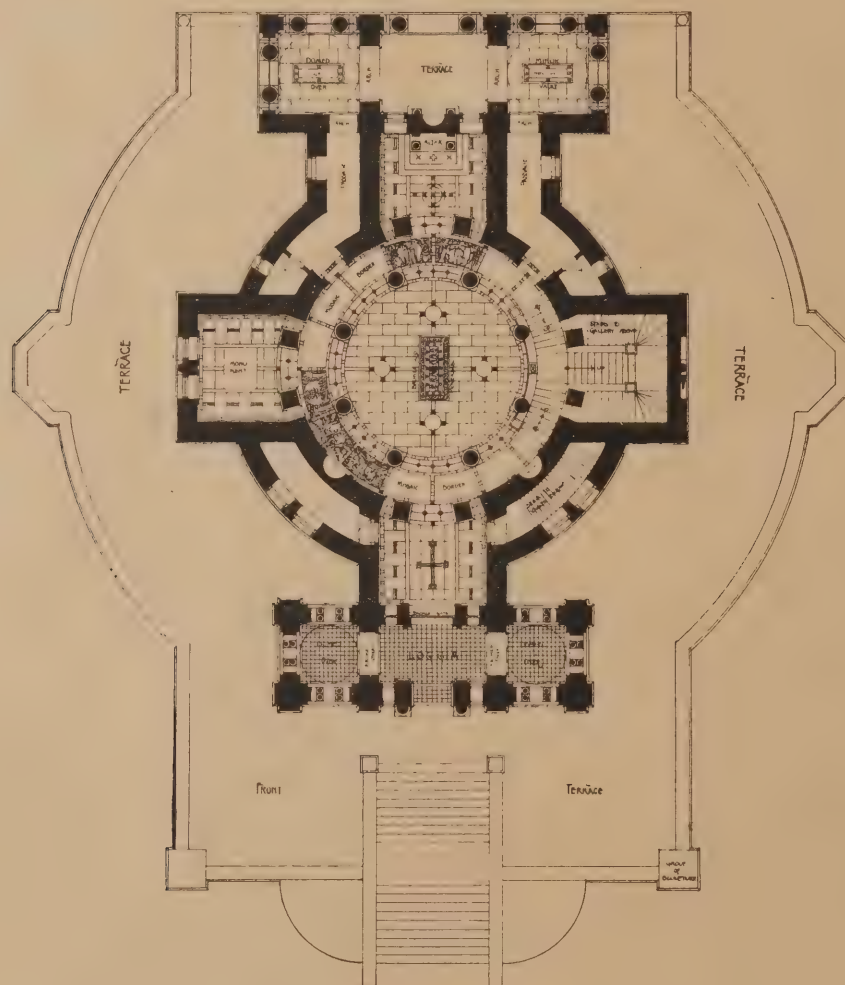
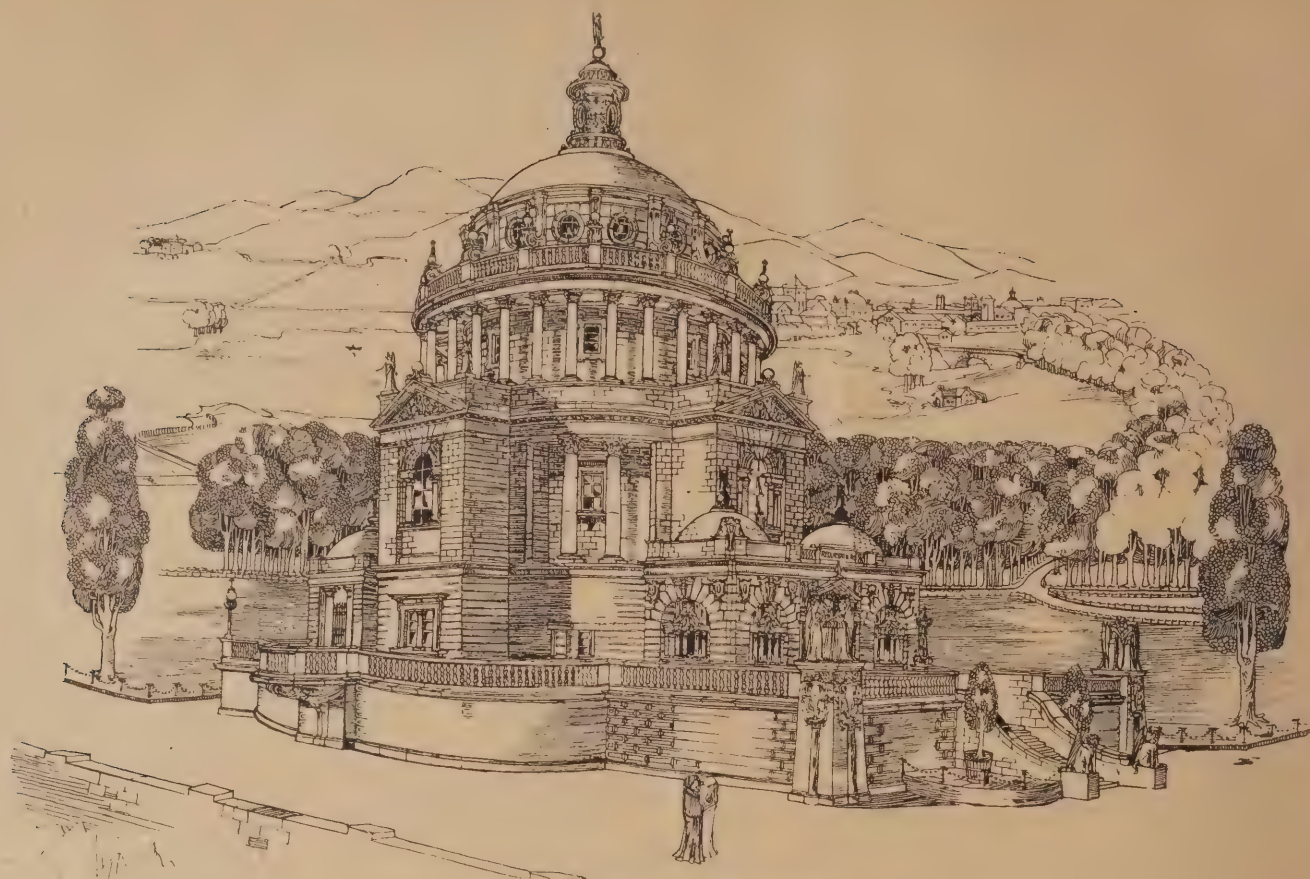
If the northern slope of the New Town had been laid out in a series of Queen Streets, would matters have been improved? Is not Queen Street so deadly dull and damp and cold, that (although it fulfils Stevenson's demand in not "fronting the wrong way") its only effect on Ruskin was to make him count how many windows it had the same! Here was the man with the muck-rake indeed, who only saw the dark side of the matter, and did not raise his head to the grand northern outlook. Contrast it to-day with Abercromby Place, whose fine frontage basks in the sun, and whose attic windows must enjoy all the grandeur of scenery on which Stevenson dwells. It is quite as plain, architecturally, as Queen Street, yet ask "the man in the street" about the two, and listen to the praise of the one and the disparagement of the other. Or take Moray Place, and that group of squares and streets, and contrast the feelings of those living in houses on the south side, fulfilling as these do R. L. Stevenson's idea of facing the grandeur of the Highland view, with those "fronting the wrong way," but having sunshine on their doorsteps—a sunshine Stevenson thinks "not worth observation." I fear that Cockburn's dream that "after many years," and at "the cost of building more than half of the New Town" over again, these evils might be cured, cannot be realised. I read the other day in Mr. Goodwin's book of a man who said, "Heaven be praised London was burnt;" and as it has taken 200 years for people to start on that revival of Architecture which is the feature of London in the past twenty years, I do not ask to have Edinburgh burned—"My soul, that would be a bleeze," as Bailie Nicol Jarvie said—but without this I fear the older New Town must remain, with its dark, damp Queen Street and the south sides of Northumberland Street and the rest. The point meets one at every turn in Edinburgh that the badly-placed building, however fine architecturally, loses in estimation as against even an inferior building in a better position. Contrast the Heriot Watt College with the Museum of Science and Art opposite it and already referred to. Contrast the Commercial Bank in George Street with the Bank of Scotland there. Contrast Mr. Waterhouse's red sandstone building for the Prudential Insurance Co. with the structures now



2

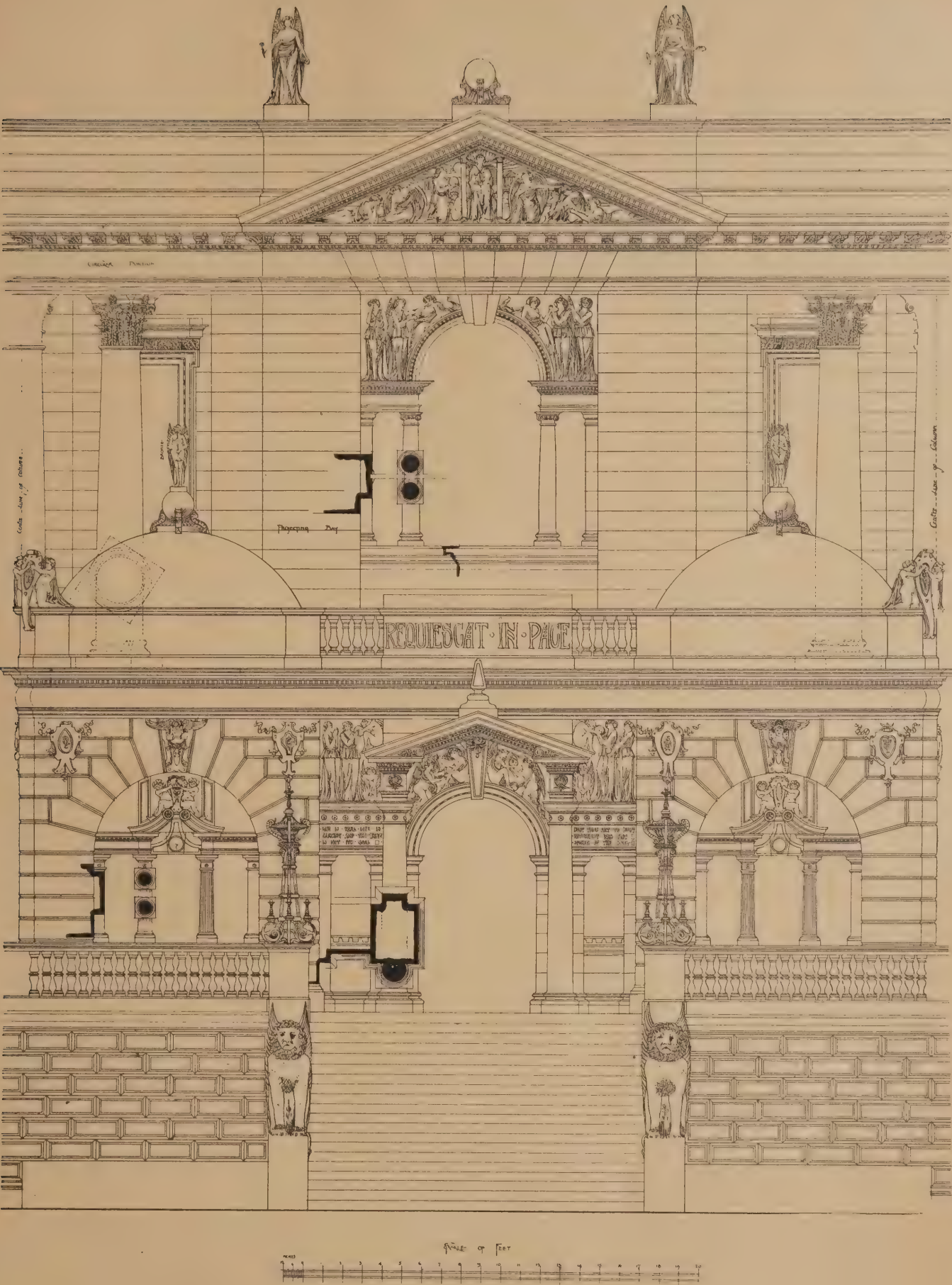
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R.I.B.A. PRIZE AWARDS: THE TITE MEDAL AND 5 GUINEAS. DESIGN FOR A ROYAL MAUSOLEUM  
By ALEX. McINNES GARDNER.





R.I.B.A. PRIZE AWARDS: THE TITE MEDAL AND 5 GUINEAS. DESIGN FOR A ROYAL MAUSOLEUM  
DETAIL OF PORTION OF FRONT ELEVATION. BY ALEX. MCINNES GARDNER.



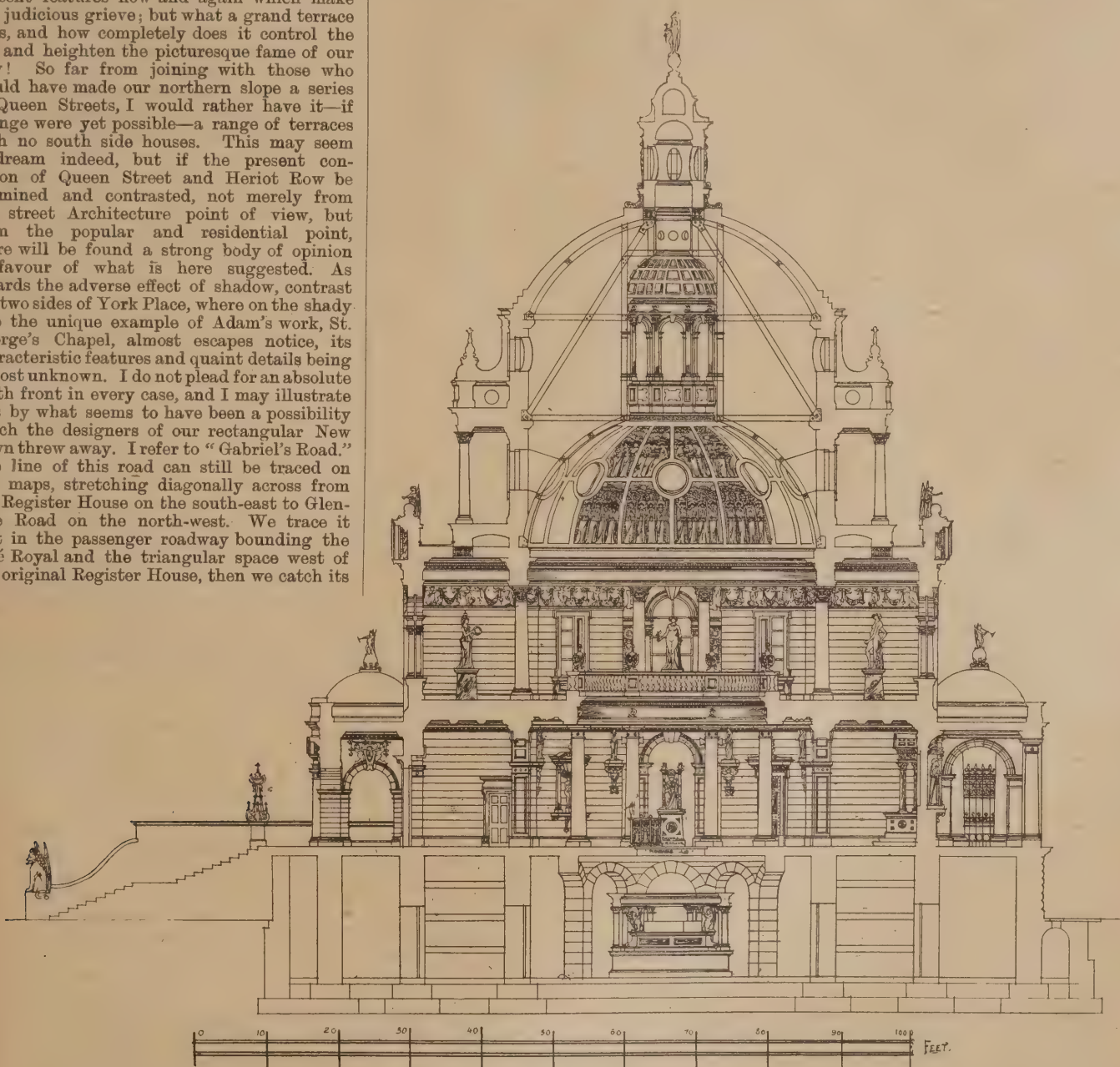
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in progress for the Scottish Equitable and the Standard Insurance Companies. I am not asking any comparison or giving any opinion on the architectural merits of these buildings. All I point to is that those with the sunny frontage fill the eye and satisfy the eye in a manner to which the opposite buildings cannot attain. In every view we can take of the question we reach the conclusion that Princes' Street—although it is, or, perhaps, because it is, as the Glasgow man said, "a street wi' yae side"—embodies the perfection of conditions for prominent town Architecture. The varied aspects of the houses there may present features now and again which make the judicious grieve; but what a grand terrace it is, and how completely does it control the life and heighten the picturesque fame of our city! So far from joining with those who would have made our northern slope a series of Queen Streets, I would rather have it—if change were yet possible—a range of terraces with no south side houses. This may seem a dream indeed, but if the present condition of Queen Street and Heriot Row be examined and contrasted, not merely from the street Architecture point of view, but from the popular and residential point, there will be found a strong body of opinion in favour of what is here suggested. As regards the adverse effect of shadow, contrast the two sides of York Place, where on the shady side the unique example of Adam's work, St. George's Chapel, almost escapes notice, its characteristic features and quaint details being almost unknown. I do not plead for an absolute south front in every case, and I may illustrate this by what seems to have been a possibility which the designers of our rectangular New Town threw away. I refer to "Gabriel's Road." The line of this road can still be traced on the maps, stretching diagonally across from the Register House on the south-east to Glenogle Road on the north-west. We trace it first in the passenger roadway bounding the Café Royal and the triangular space west of the original Register House, then we catch its

these may perhaps be pleaded in defence of building the two rows of houses. But the ground was cheap—or should have been cheap then—and the only loss would have been that Heriot's hospital might have been somewhat the poorer to-day, while there would have been the threefold advantage of a lesser death-rate—for all authorities say "show me your population per acre and I will tell your death-rate"—better gradients for our horses and our hearts!—and the possibility of saving us from the absurdly antiquated cable tramway! Might we not also, by

am dealing specially with the placing of buildings, it is with great pleasure I find, from a recent speech of the Lord Provost, that neither the Commander-in-Chief nor the War Secretary is satisfied with the latest building within the Castle. What their objection may be I know not, but mine is that, as these buildings fall into the outline as viewed from the north, they intrude upon and spoil what was formerly a most lovely and perfect contour. The Castle at that point was to my mind a kind of inspiration in form, affecting the mind with an idea of perfection just as



R.I.B.A. PRIZE AWARDS: THE TITE MEDAL AND 5 GUINEAS. DESIGN FOR A ROYAL MAUSOLEUM. CROSS SECTION. BY ALEX. M'INNES GARDNER.

memory in that right of way we have through the Royal Bank grounds, then we see it in the stunted and sloping lines of some of the back gardens in Duke Street—very probably also in that dispute as to the ground which gave Abercrombie Place its crescent shape—and so through Silver Mills to Henderson Row, where after a detour we actually pick up the name "Gabriel's Road" at its northern end. One result of the rectangular plan was to give us the steepness of Duke Street and Hanover Street and Howe Street. If the line of Gabriel's Road had been chosen rather, giving sweeping lines and easier gradients, with sunny level terraces branching off, might not our new town have been very different to-day? One advantage of the double streets we have perhaps in wide roads, and the expense of

following natural curves and getting rid of right angles, have done better with our trees, and enjoyed, to a greater extent, in our streets "the softening influence of neighbouring vegetation."

In a question of the placing of buildings, the effect of a little distance and a wider view often compensates somewhat for the absence of a well-lit frontage. This applies, of course, rather to a range of buildings than to the individual structures composing it, and perhaps the finest illustration of it the world has to show is found in that "ridgy back heaved to the sky," on which the image of Scott is so unhappily made to turn his back. We should be very jealous of any interference either with the mass, the line, or the detail of that wonderful and unique spectacle. As I

that grandly-shaped hill Craig-Dhu, as seen from Kingussie, fills the mind with a sense of beauty from its mere outline. And now comes this new structure, obtruding like a snag-tooth in the mouth of a pretty woman, or like the warts and horns on the snout of a rhinoceros. How it is to be mended I know not, unless some further building is set in between the new and the higher houses so as to restore something of that natural grace, the "dying fall" of the previously existing outline. On the direct profile from the north even the new guard-house stands apart and spoils the general effect, but as this is only seen from one point, and the spectator can get rid of the feeling by a slight shift of ground the defect is not serious, and we may be glad of the nice new structure, even with



the solecism of flanking the drawbridge with loopholed walls for defence and then providing a wide and defenceless cart entrance along-side!

#### A Case for Vigilance.

Time will not permit me to follow the details of the Old Town ridge "all the steep slope down," but I would say, let us watch every movement very narrowly, so that no more "buck-teeth" may grow up, and that no more good teeth may be broken out to spoil this grand outline. There are, or were, some fears for St. Giles' "Imperial Crown" being dimmed or dwarfed by the new buildings of the City Chambers, and the North Bridge building outlines must be jealously watched by the Association. But it is satisfactory to know that this attitude of the Architectural Association, and the higher regard in civic minds to questions of the beauty and dignity of Edinburgh, combine to give us some assurance that what is done will prove to be, as Ruskin might say, acts of virtue, and not acts of vice and shame.

#### The Ground Line.

There is just one other point in regard to the placing of buildings to which I would draw attention—that of raising them from the ground line. I find Cockburn saying of the Royal Institution that "the building, though pleasing, is not what it ought to have been. It should have been set on a higher table." Strictly speaking, Cockburn is no doubt right. But, although the building has the usual Edinburgh fault of having its front with the worst aspect—especially as it faces a slope!—and it is true that a Grecian temple has its best site upon an eminence, yet I think the Royal Institution justifies itself, even on the low "table" from which it rises, and to this result the fact that it stands high above the adjoining valley, although not high above the street, no doubt materially contributes, as probably does also the "influence of neighbouring vegetation." If the Royal Institution, and the National Gallery behind it, escape censure, this can only be because they happen to fall into a wholly unique and picturesque grouping, and that any necessity to assert their proper classic dignity is negated by their surroundings. The most fortunately placed building in Edinburgh, as regards the "table" on which it stands, is probably Heriot's Hospital, and there are so few notable sites like this that one would almost have hoped that one of them—say the Cattle Market, or St. James's Square (swept and garnished), or the disputed Castle Terrace—should have been secured for Mr. Usher's gift.

#### Advice to Architects.

What, you will say, do I propose as the conclusion of the whole matter? Well! I would almost say to an architect, study site and frontage rather than style. Our robust secretary for Scotland said the other day at Dundee that he would rather have a bad law well administered than the best law ill administered. Perhaps this has to be taken with a grain of salt, yet it has salt in itself. I would rather live in a plain house so situated that everyone coming to the front door would say "how charming this house is," than live in the most brilliant achievement of the architect, so placed that the remark would be "a nice house, but what a pity it is so badly placed;" or, "why was not the entrance at the other side?" If it is said, "how can this be applied when a design is wanted for a building on the dark side of a street?" My answer might be, "that is not my business," and the architect must see to it, and here some of the words of Morris, already quoted might be recalled, where he says "the first care . . . is the justly appropriating the design to the situation. Might it not be wise, for example, on a north front, to avoid cornices and verandahs for the sun that never comes, and to let all details be broad and grand in those elevations where lesser beauties would be thrown away? Try so to suit style to an inevitable site that no one will remark that the house is on the shady side!"

A public statue to Dr. Berry is proposed for erection in Wolverhampton.

## ORNAMENT.

By PROFESSOR BANISTER FLETCHER.

A LECTURE on "Ornament" was delivered at the Carpenters' Hall, London Wall, on February 6th, by Professor Banister Fletcher. Mr. Joseph Preston, Master of the Carpenters' Company, presided. The Professor said it was always of practical value as well as pleasing to endeavour to find out the origin of one's subject, and he thought it might safely be said that the origin of ornament was due to two causes, geometrical forms and natural foliage and flowers. Firstly to deal with the earlier cause, the geometrical; at least it was believed to be the earlier, for it was difficult to disagree with the German Professor Meyer of the School of Applied Art at Karlsruhe, who said "Geometrical ornament is the primordial or oldest of the elements of decoration. The implements of savages, and the tattooing of the Indians prove this. The seam, with the thread running slantwise from one piece to the other, may have been the original for the zigzag line; and the woven work of warp and woof (of every kind), the original for reticulated patterns; and the plaited hair that of the plaited band."

#### Geometrical Ornament.

Perhaps the most pleasing of the geometrical styles was the "Fret," which never seemed to tire the eye. Now this ornament, though apparently complicated, was in reality most simple. The next example from geometrical origin was the bead or astragal, a small semi-circular moulding, so called from its resemblance to a row of knuckle-bones placed side by side. The origin was the necklace of the woman. The next simple form of arrangement was the arrangement in squares. The formation of the apparently difficult band ornament, the "Guilloche," a series of interlaced ornaments on stone resembling network, was simplicity itself. Simply make a series of circles at equal distances and then draw diagonal lines and round them off. The speaker next treated of the wave arrangement. If it was desired to see the extent to which geometrical ornamentation might be carried, so that it decorated the entire surface of the building, one must see the Moorish buildings, and he instanced the Alhambra.

#### The Natural Style.

The Professor then passed to the second class of ornament, namely, that based on Nature, and he stated that in scarcely any instance was Nature actually copied. In Greek ornament on mouldings the outline of each enrichment in relief was ordinarily described by the same line as the profile of the moulding to which it was applied. The acanthus had been more used than any other, although it had never had any symbolic meaning. As time went on the acanthus became more and more conventional, until practically no trace of natural leaf was left. Every style of Architecture had used this plant. The vine was much less often used than the acanthus, although it had symbolic signification in connection with Bacchus.

#### The Right Use of Nature.

The Professor then considered the question: Is the architect wise in varying natural objects, or should he, like the painter, be content with copying? The ornament of the past styles had been splendid, and he thought the reason was not far to seek. Nature did not make her foliage, her fruit, her flowers in stone, nor did she place her delicate buds isolated and at great heights. The architect had to do this—to make his stone or brick building his background, and therefore make his ornament assimilate to some extent with his brick or stone surroundings. Nature had a far different background—green hills, flowing streams, and that charm which no "copying" in stone could possess; its objects were instinct with life, swaying and bending

to the wind. The architect's ornament, on the contrary, was for ever fixed—part of the building—and must be looked at in conjunction therewith.

#### Ornament in Relation to Architecture.

If the Architecture of one's building be bold and masculine then he suggested the ornament should be bold and masculine also. Think of the opposite treatment; carve the daisy or the violet on the frieze of such a building, and how incongruous, out of place, one would pronounce it. He laid some stress upon this part of his lecture, because (1) there was a school arising whose theory or opinion was that the natural treatment of ornament in Architecture is the true one; (2) because ornament must play a most important part in any new style of Architecture, and, therefore, it was most important to consider what its character should be. After quoting authorities in support of his conclusions, the Professor went on to show a few more examples of the application of ornament to the different features in the different styles of Architecture of the past.

#### The Limits of Ornamentation.

Next to proportion and grandeur of form in a building came architectural ornament, which might no doubt be used to excess. It should be confined to the decoration of the constructive parts of the fabric. The old writers said that ornament might be compared to jewels, and just as they should be sparingly used in the decoration of the person so should ornament be used in a building, but it must not be forgotten that a paucity of ornament betokened an unpleasing poverty, and a total absence deprived the building of a right to be classified as Architecture—it was mere building.

## COLOUR EFFECTS.

A SINGLE plaster cast, if it be really artistic, is far to be preferred to a piece of marble statuary poorly executed, and besides that, a person with taste can absolutely revolutionise a house by employing the right colours in the right place. Many persons seldom or ever dream of the many possibilities which can be obtained from a judicious employment of colours. There are tints and tones that are refreshing and broadening, others that absorb light and give a boxed up appearance to a room, others that make a room with a bleak northern exposure, or with no exposure at all, appear bright and cheerful; some that make a room appear warm, and some that make it cold. The thermometer seems to fall quite half a-dozen degrees when you enter a blue room; yellow is an advancing colour; therefore, a room fitted up in yellow will appear much smaller than it is. On the other hand blue of a certain shade, introduced somewhat generously, will give to a room an idea of space. Red makes no difference in regard to size, and green makes very little. If a bright sunny room gets its light from a space obtruded upon by russet coloured or yellow painted houses, or else looks out upon a stretch of green grass, it should be decorated in a colour very different from the shade chosen if the light comes from only an unbroken expanse of sky. Red brings out in a room whatever limb of green lurks in the composition of the other colours employed. Green needs sunlight to develop the yellow in it and make it seem cheerful. If olive or red brown be employed in conjunction with mahogany furniture, the effect is very different from what it would be if blue were used; as this would develop the tawny orange lurking in the mahogany. If a ceiling is to be made to appear higher, leave it light so that it may appear to recede. Deepening the colour used on the ceiling would make it seem lower, an effect desirable if the room is small and the ceiling very high. Various tones of yellow can be well employed as substitutes for sunlight. The above hints may be of use, to some of our younger readers at any rate.

W. N. B.



## FACTORY DESIGN.

By J. H. PEARSON.

A JOINT meeting of the Institution of Junior Engineers and the Discussion Section of the Architectural Association was held last Friday evening at the Westminster Palace Hotel. A year ago a meeting of a similar character was held, when the engineers were the guests of the architects. The present meeting, which was, therefore, in the nature of a return visit, was in every way a success; there was a good attendance, a capital paper, and a brisk discussion, and it is likely that in future similar joint meetings will be held at least annually. The chair was taken by the chairman of the Institution of Junior Engineers, Mr. Basil H. Joy, who in his opening remarks referred to the new departure as one which could not fail to be of great benefit both to the architects and the engineers. Members of the Institution desired information on matters outside their own particular practice, and he hoped that this meeting would inaugurate a long series of joint meetings, which might eventually develop into united meetings with other kindred societies. Mr. J. H. Pearson, M.I.E., then read a paper on "Factory Design." At the outset the author referred to the relationship between

### Architect and Engineer.

An engineer was often found doing work requiring the supervision of an architect, and *vice versa*, sometimes with unsatisfactory results. United action was necessary, and the respective duties of architect and engineer should be clearly defined, and each should be responsible for the work under his control. The procedure he suggested in the case of the building of a factory was that the architect, having all particulars of the building site, should ascertain from the engineer the kind and weight of machinery to be installed, the space required for it, and the minimum height to be allowed for floors. The architect should then prepare his sketch plans, and furnish the engineer with tracings, together with any skeleton sections likely to prove useful. The engineer should then indicate on the tracings the positions in which he proposed to fix his machinery and give a copy of it to the architect, together with particulars of any special construction or preparation necessary for the reception of the machinery.

### Choice of Site.

Mr. Pearson proceeded to point out some considerations which should govern the choice of site; preference should be given to one near a railway or canal, and in a neighbourhood likely to supply a desirable *employé*. The requirements of the London Building Act, or of local by-laws, must, of course, be considered. The design of the factory would depend upon its situation, the size of the building site, and the nature of the business to be carried on. Three types of factories were mentioned: (1) The light class, for textiles and such trades as cabinet-makers, jewellers, and box manufacturers; these were generally constructed in several floors. (2) The heavy class, suitable for engine and boiler makers, breweries, distilleries, &c.; these had only one or two floors. (3) The combination of warehouse and factory in one building; in these there were usually five or six floors. The various methods of deriving power for machinery were then explained, as these would affect the design.

### The Elevation.

Mr. Jackson was not of opinion that a factory must necessarily be ugly. The exterior should be bold in outline and designed to give the passer-by the impression of solidity and strength. A good architectural effect might be obtained by the use of parti-coloured bricks, and the entrances and any special features of the building should be emphasised. Stonework, as a rule, should be sparingly used, as it would not stand an excessive heat. Some of the patent stone compositions were cheaper, more durable, and more fire-resisting.

After describing in detail the various kinds of material it was desirable to use in factory construction, Mr. Pearson spoke of

### The Foundations.

Where great weights had to be carried, and the soil was of a soft nature, it was desirable to employ a continuous and substantial bed of concrete over the whole site, in order to obtain uniform pressure; but where the bottom was of hard sand or gravel the excavations might be confined to trenches for walls and potholes for piers and columns. In buildings near a river bank where the soil was of a soft character for a great depth piles might be used. These should be driven in groups at intervals, beds of masonry being placed on them, and brick arches turned between the piers to carry walls above, continuous iron tie-bolts being inserted all round the building for tying in the masonry and brickwork immediately above the piles. The best methods of flooring and roofing were then discussed, and the correct method of setting out a Queen post roof truss was illustrated by a diagram.

### Windows and Skylights.

It was suggested that the best form of window was that having the upper sash hinged to fall inwards or hung on pivots, allowing the fresh air to enter over the heads of the workpeople. A skylight constructed with one glazed and nearly vertical slope facing north, and the other pitched to an angle of about 35deg., boarded and covered with slates or lead, was suitable where a northern light was essential; but where more light and ventilation were required the lantern form was to be preferred. The requirements in designing chimney shafts were next dealt with, and it was pointed out that circular shafts offer the least resistance to wind; but for a small chimney of this shape it was recommended that special curved bricks should be made, so that a smooth surface might be presented, and the vertical joints might be of even thickness.

### Ventilation and Warming.

Natural ventilation should be adopted as far as possible, and was usually sufficient for warehouses or for small non-textile factories where no impure gases or dust were generated. The author was of opinion that large factories, whether textile or non-textile, could only be efficiently ventilated by artificial means; either the plenum or vacuum system might be used, or, in some cases, the two might be combined. The temperature required for factories was about 55° F., so that in cold weather some system of heating was needed. Buildings might be heated either by hot water, steam, or hot air, besides the open fireplace. Where waste steam was available, this could be economically applied for heating purposes. Steam radiators occupied less space than hot air apparatus and steam had practically the same temperature throughout the building.

### Sanitation.

All parts of the building should be lighted, where practicable, directly from the exterior, and there should be a plentiful water supply. Drainpipes should be laid in straight lines, with inspection chambers at junctions, to give facilities for inspection and cleansing. The pipes might be either of stoneware or cast iron; if the former, they should be jointed in cement and embedded in concrete, and all drains should be provided with an inlet and outlet pipe to carry a current of fresh air through the whole system of drainage. In chemical works, where it was necessary to flush the floors, provision must be made for carrying away the water. All sanitary fittings should be simple, strong, and not likely to get out of order. The best system of lighting for factories was by electricity. The lecturer concluded by explaining a number of plans and other diagrams bearing upon his subject which had been placed upon the walls.

### Points from the Discussion.

The paper was followed by a long and interesting discussion, which was opened by the reading of a communication from Mr. M.

Garbutt, and continued by speeches from Messrs. P. J. Waldram, E. Pearson, T. C. Morewood, H. H. Statham, W. W. Beaumont, T. C. Reid, H. J. Leaning, H. J. Young, E. A. Berry, Max Clarke and W. R. Beckett. In the course of the discussion a great many points of detail were touched upon, amongst others the relative values of various fire-resisting constructions. Several speakers expressed their preference for wood floors, and Mr. Statham gave the results of some fire tests made some three years ago in Germany, when the best records were obtained by a wooden floor. Are factories necessarily ugly? Some were of opinion that in buildings so essentially practical any attempt at architectural adornment would be out of place, but examples were mentioned of existing factories that were not without picturesque qualities, and Mr. Statham pointed out that in America even high chimneys were often treated in a picturesque way without any loss of their utilitarian character. As Mr. Leaning remarked, the great difficulty was to get the public to recognise that anything more was necessary than bare utility. People would say that the neighbourhood was not good enough to warrant anything in the shape of ornament, but he maintained that no neighbourhood was so bad that it could not be improved. On one point there seemed to be a consensus of opinion, viz., that a more intimate association between architects and engineers was in every way desirable. Some striking examples were given of the disastrous consequences that sometimes attended a want of co-operation between the architect and the engineer. The former would build his house apparently without any regard to the machinery that was to be put into it, and would be much annoyed when the engineer began to knock holes in it in order to fix his machinery. A case was mentioned of a metal plate works where the moulding shop was placed the whole length of the factory away from the pattern shop. This arrangement, due to the architect's desire for a symmetrical building, involved the firm in an expense of over £200 a year more for labour than would have been necessary had the two shops been placed together, as they should have been.

**Building in Aberdeen.**—At the meeting of the Plans Committee of the Aberdeen Town Council on Friday, twelve sets of plans for new buildings, and alterations on existing buildings were submitted, the total value being £18,000. The plans included those for new buildings for the Scottish Temperance Assurance Company, to be erected at 154, Union Street, at a cost of £5000; for a boot and shoe factory in Leadside Road, for Mr. Lewis Morrison; and for a bakery and dwelling-house in George Street, fronting the House of Refuge, for Mr. A. B. Hutchinson, baker, Broad Street.

**The Edinburgh Architectural Association** paid their first visit of the Session on Saturday, to Tollcross Cable Power Station, by kind permission of the Lord Provost and Magistrates. The members had shown and explained the boiler house, with its boilers with feed heaters, super-heaters, economisers, coal hoisting machinery, mode of storing coal, and feeding furnaces, chimney stalk; the engine house with its engines and rope drives, overhead travelling cranes; the mode of conducting cables to their respective routes; the c-r stables, and the auxiliary cable arrangement for taking in and out cars; the workshop and stores, the general design of the station. The leaders were Messrs. W. Newby Colam, M.I.C.E., and John Cooper, Burgh Engineer. The party then visited the Edinburgh Industrial Brigade Home, Fountainbridge, by kind permission of Hamilton Maxwell, Esq., W.S., hon. secretary. There they were shown the entrance hall, dining hall, kitchen and offices, heating chamber, laundry, bathrooms, and lavatories, large hall, dormitories, and dressing rooms, play and reading rooms, erection room, and superintendents' and matron's houses. The leader was Mr. Frank W. Simon, architect.



## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### BAKERIES.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Could you inform me of any recent work on Bakeries? or where I could get reliable information about them? Thanking you in anticipation.—Yours truly,  
Birmingham. F. W. A.

There are, we believe, no books published on Bakeries, and information on the subject seems difficult to obtain. Perhaps some of our readers could oblige.

### BOOKS ON SURVEYING AND SEWAGE TREATMENT.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—May I trouble you to kindly inform me the price of the works you mentioned in the BUILDERS' JOURNAL of January 25th, and where obtained, viz., Amstie's "Comprehensive Treatise on Surveying"; Castle's "Treatise on Land Surveying and Levelling." Also, is there any recent work on Bacterial Treatment of Sewage.—Yours faithfully,  
Isle of Wight. W. I. W.

The books mentioned above are out of print. Mill's "Practical Surveying," price 7s. 6d., published by Batsford, 94, High Holborn, can be recommended. Moore's "Sanitary Engineering," 30s. nett., gives information on the Bacterial Treatment of Sewage. Any bookseller will obtain these books to order.

### BOOKS ON DESIGN AND LAW.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—Would you kindly inform me through your Enquiry columns the best work on Architectural design for a student, dealing with buildings only? I have seen such a book, but have forgotten the name and price. Also, do you know of any digest of Law cases in a handy form for buildings and building law only, such as cases appealed under P.H.A. bye-laws, rights of light, easements, &c.?—Yours, &c.,  
Hexham. W. M.

We can recommend "Treatise on Principles of Design in Architecture," by E. L. Garbett (Lockwood: 2s. 6d.) Perhaps that is the book to which you refer. The "Architects' Compendium" publishes yearly an epitome of decisions in the courts, which, during the past year, have affected the interpretation of the various Acts relating to building. We may also refer you to "The Architects' Legal Handbook," by Messrs. Jenkins and Raymond, and "Digest of Building Cases; and addendum," by E. S. Roscoe.

### DISTRICT SURVEYORS' EXAMINATION.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—Being a subscriber of yours since the start, I trust you will, through your Enquiry columns, give me sound advice on the following: I am thinking of studying for the Exam. under R.I.B.A. for Building Surveyors (London). Could you give me an idea of the scope of the work? What books do you recommend, and how long would it take to work up? Also please give age limit and any further information. I have written to the Institute, but their information is very narrow indeed.—Yours, &c.  
Dartford.

"SURVEYOR."

Enquiries addressed to us in this column should be explicit and practical. How are we to tell you how long it will take you to qualify for any particular test? We understand you desire to take part in the examination of the

R.I.B.A., qualifying for candidature as district surveyor in London. In that case you must write to the Secretary, R.I.B.A. for his current issue of the "Kalendar" (price 2s. 6d.) and the application forms relating to the examination (free): The "Kalendar" gives a detailed epitome of the scope of the examination. A thoroughly sound knowledge is expected of examinees, such as an experienced practitioner should possess. The examination is of a practical nature, and apart from this it would be impossible to advise you as to books without knowing what your present standing or qualifications are.

### SELF-INSTRUCTION FOR SANITARY INSTITUTE EXAMINATION.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—I shall be glad if you can recommend me the most suitable books for a course of drawing by self-instruction (if you think this possible). Being out of the way of attending any classes or obtaining any lessons, your kindly help will much oblige. The idea is to take a course, say as follows: (a) Free-hand. (b) Model and sketching from nature. (c) Perspective. (d) Geometry. (e) Shadows, reflections, and projections. (f) Building construction. (g) Machine construction. Would the following be of any use: (a and b) Vere Foster's Series. (c) Swinstead's "Perspective." (d) Carroll's "Geometry." (e) ? (f) Burrell's "Building Construction." (g) Low's "Machine Construction"? Or can you recommend more suitable works? Should the order of taking the subjects be different? Is it necessary to wade all through Rivington's Course for the Building Construction to enable one to pass the Land Agency Division of the Sanitary Institute, or would Burrell's book or Dobson's "Art of Building" be sufficient?—Yours truly,  
York. STUDENT S.I.

If you are taking the course of examinations of the Surveyors' Institute, you must get the "Rules of Examination" and "Syllabus of Subjects," which suggests the books best studied in each subject, and gives samples of the papers that have been set. As you do not tell us in which division you are we cannot give you specific advice. Apply to the Secretary, Surveyors' Institute, Savoy Street, Victoria Embankment, London, W.C. "Building Construction" (Rivington) is a standard book, and, being progressive, is suited to all students. We strongly advise you to strictly follow the course laid down by the S.I. as you are a student of the Institute. As for the books you mention, you should not use the Vere Foster Series. Read Ruskin's little book on "Drawing," practise freehand from casts of sculptured ornament in buildings, and sketch natural objects. Copy nothing from books. You may, however, learn much by examining the methods of accomplished draughtsmen.

Two new Rembrandts have been added to the collection at the National Gallery. They now hang on either side of the great Van Dyck in the principal Dutch Room. They are numbered 1672 and 1673, and are portraits respectively of an old man and an old woman. They are fine examples of the painter's later style. They were purchased for the nation from Lady de Saumarez, under a special grant of money from the Treasury.

Memorial to Sir John Millais.—At a meeting of the Millais Memorial Committee, held last Wednesday at Marlborough House, it was decided that a statue be placed at the Tate Gallery, as the first proposal to place the monument in St. Paul's Cathedral has been found impracticable. It was further resolved immediately to invite contributions for carrying this object into effect. It is calculated that the amount required is from £1500 to £2000. Subscriptions may be sent to the Bank of England, Western Branch, Burlington Gardens, W., to the account of the Millais Memorial Fund; or to the honorary treasurer, Mr. James Knowles, Queen Anne's Lodge, Westminster.

## Correspondence.

### A PROPOSED TECHNICAL COURT.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—The present state of the law with regard to matters of light and air in building operations is one of great uncertainty, and productive of much waste of time and money, and frequently seriously impedes the building enterprises of those wishing to improve or rebuild their premises; and it is very often a question whether it is not worth while to pay a sum of money as blackmail rather than have the progress of the work stopped by an injunction and risk the heavy expenses incurred in fighting an action often based on trivial or even imaginary rights.

How to deal with this question so as not to interfere with vested interests and rights, and yet at the same time facilitate building operations, may be a difficult problem, but it is not by any means an impossible one.

In Scotland these matters are dealt with by the Court of the Dean of Guild, and it ought to be possible to adopt some similar means here. It has been suggested that a technical court should be established, and every building owner, where any question of light, air, or other easement arises, should be able to appeal to this court and cite before it all respondents who may be interested. Plans could be deposited to which all interested parties could have access, and the court would then proceed to hear the objectors and the building owner, and decide the limit to which the building could be carried without interfering with the lights and easements of the objectors. By this means no injury would be done to the rights of either party, and the decision obtained before the building owner is pledged to his contract with the builder would most certainly prove of invaluable service to those contemplating building, and prevent blackmailing or useless actions.

The technical court would be composed of professional men, who would not require expensive expert evidence to be brought before them to determine the issue, and who would visit the premises and see for themselves. The nucleus of such a court is to be found in the Tribunal of Appeal under the London Building Act of 1894; its numbers could be increased, and additional powers given to it to charge the necessary fees for maintenance, and the whole cost of deciding between the parties would be a mere fraction of the present unsatisfactory and wasteful course of fighting a light and air action. There could, of course, be an appeal to the divisional court, if thought necessary, and also the building owner, if he exceeded the limits laid down by the court without first settling with his neighbours, would be proceeded against by the court, who should have the power of enforcing their own decisions.

To this end the Society of Architects, in November last, approached the Lord Chancellor with a petition praying that a Parliamentary Committee might be appointed to enquire into the present law with regard to ancient lights with a view to saving the large amount of moneys being expended in determining the rights of owners with regard to same, when his Lordship intimated that he would give the matter his careful attention.

It is hoped that the hearty co-operation of the leaders of the professions, both architects, surveyors, and lawyers, will be given to obtaining an Act of Parliament to deal with this subject, and thus enable us at least to be on an equal footing with Scotland. The present new Municipal Government Bill should give a good opportunity for forming the necessary court under the central authority, the London County Council.

C. McARTHUR BUTLER,  
Secretary of the Society of Architects,  
St. James's Hall, Piccadilly, W.

Blackrock Presbyterian Church, Dublin, in Mount Merrion Avenue, has just been opened.



## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,  
February 15th, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### The Complete Architect.

OUR columns this week bear rather remarkable testimony to the many-sided character of the equipment needed by the architect who aspires to be a master in his profession. In the discussion which followed Mr. Whall's admirable lecture before the Architectural Association on "Stained Glass," some little demur was made to the lecturer's suggestion that the architect ought to have at least a certain degree of practical knowledge of every craft, including stained-glass work, which he has to direct. On the face of it the demand might appear excessive, but in reality—and we are glad to see that most of the speakers recognised this—it is eminently reasonable. Of course, no man could be a master of every craft concerned in the erection of a cathedral or a factory, but this is one of the cases in which a little knowledge is infinitely less dangerous than no knowledge at all.

### Architect and Engineer.

BUT there is another direction in which the architect needs sometimes to widen his sympathies a little. The joint meeting of the Junior Engineers and the Discussion Section of the Architectural Association, held last Friday, was, we hope, an outward and visible sign of a rapprochement that is not by any means confined to the members of these two institutions. Some of the stories told at the meeting of the woeful consequences of architect and engineer working on independent lines revealed a state of affairs that would scarcely be credible if the speakers had not been relating their actual experiences. Here it is not so much, perhaps, a practical knowledge of engineering that is needed, as a sympathy with the engineer and his aims, and a willingness to work in parallel rather than in series, as an engineer might say. On the other hand, there is often need on the part of the engineer of a juster appreciation of the æsthetic ideals of the architect. Such a friendly gathering as that of last Friday is a step in the right direction.

### Taste in Architecture.

THE advancement of architecture and of all other arts depends not alone on the practitioners of those arts. Beautiful objects are not required in an age which is insensible to beauty. We welcome, therefore, every effort that is made to cultivate something approximating to artistic taste in the masses of the people who have been wont to trouble themselves very little about art matters. The writer of the art notes in the "New Age" makes a laudable attempt in his last week's article to interest his readers in the development of architecture. He defines architecture as "the sense of beauty produced by the building-up of a structure in the fittest possible way, having regard to the country and period in which such edifices are required."

**An Opportunity.** THE writer sees signs of progress as compared with the days when the streets near Cavendish Square and Gower Street were built—"a time," he says, "when Architecture was forgotten, when the only thing required was internal comfort and convenience." It is pointed out that a great opportunity for further progress will be presented by the London County Council's new street from Holborn to the Strand. This street, says the writer, "will give an unsurpassed opportunity for architectural effect. It can be pictured in the imagination as one of the finest streets in Europe, if only genuine artistic power is brought to bear, and if, instead of being treated in a piecemeal way, an effort is made to keep a general unity of purpose in the designs." It is an encouraging sign of the times that the non-technical press should begin to concern itself with architectural matters.

### Covent Garden Theatre.

A POST not dissimilar to that held by the late Charles Garnier on the Paris Opera House, has now been created at Covent Garden, inasmuch as the Grand Opera Syndicate has just appointed Mr. Edwin O. Sachs, the well-known architect, to be its general technical adviser on all matters architectural and mechanical. Mr. Sachs, whose monumental work, "Modern Opera Houses and Theatres," was reviewed in our columns a few weeks ago, is—if we understand rightly—not only to have charge of the building or engineering operations at Covent Garden, but will supervise the installation and working of the stage as far as its mechanism is concerned. This, no doubt, practically means that Covent Garden will soon have a model stage worked mechanically, for Mr. Sachs' successful substitution of electricity for manual labour at Drury Lane plainly shows that he favours the application of modern methods in stageland. The appointment augurs well for the coming Opera Season, and Earl de Grey and Mr. Higgins are to be congratulated on its creation.

### An Architects' Outing.

THE first spring visit of the Architectural Association took place last Saturday to the new Carlton Hotel, Pall Mall. Generally speaking, these visits are organised to enable the members to make a study of the interior of buildings in course of erection, which in most cases would be inaccessible after they are occupied, and for this reason alone upon these occasions the exterior detail is not taken into so much account. Since a visit was made to Her Majesty's Theatre in 1897, prior to the opening of that building to the public, the development of the scheme for completing the whole corner block facing Pall Mall and the Haymarket has been followed with much interest. The present work is being carried out under the supervision of Messrs. Isaacs and Florence, to whom the members were indebted for the visit, Mr. Florence conducting the party over the building. Fortunately for the general scheme, the continuation of the façade, as designed by the late Mr. Phipps, has been carried out with an effect which would have been lost if any alteration in the design had been followed.

### A Palatial Hotel.

THE main features of the ground floor, which is arranged and will be completed with all the sumptuousness and dignity usual in a modern hotel, are the *salle à manger* and palm court and lounge. The latter occupies the whole area of the courtyard in the centre of the block, and is covered with a glazed dome at the entresol level, the main approach being from Pall Mall. The *salle à manger* extends the whole depth of the site on the north side from the Haymarket to the Arcade, and has one side open to the court. There are two main entrances, from Pall Mall and the Haymarket. The Pall Mall entrance is in the centre of the block and leads directly into the palm court and lounge, and although the building is at present in quite an unfinished state, judging by

the openings and disposition of the approach, an excellent effect will be obtained upon entering the building from this side; this effect will be enhanced by the natural slope of the site necessitating a change of level which has been taken full advantage of by arranging a terrace about 4ft. high adjoining and in conjunction with the *salle à manger*. It may be interesting to record that the original scheme arranged for this large apartment to be over 30ft. high, and the iron construction and floors were worked accordingly, but latterly this height being deemed unnecessary, an additional entresol floor has been introduced, slung down from the ironwork, which had already been placed in position, and as the walls and partitions had not been rendered, the members were enabled to study the unusual construction of the ironwork. The upper part of the building, which extends up to seven stories above the ground floor, is planned to meet the varied requirements of a large hotel. The contractor for the work is Mr. Henry Lovatt, of Wolverhampton.

### Aberdeen's Byron Statue.

AT a meeting of the Byron Statue Sub-Committee on the 4th inst., Mr. Pittendrigh Macgillivray reported that the amount subscribed does not exceed £1500, and the statue must be of bronze and the pedestal of granite if the work is to endure. If marble is adopted for an open-air site, it will inevitably be required to be put under cover at no very distant date; but not, probably, until it has sustained obvious change from weathering. If a suitable site can be found under cover, marble may be adopted, in which case the statue need not be of such colossal proportions as one destined for a site in the open, and will therefore cost less. If the subscriptions should reach the amount of £3000 or thereby, some combination of Architecture and sculpture might be adopted, in which case the statue, being under cover, might be of marble or gilt bronze, and of reduced proportions. It is often objected to our public statues in bronze that they get dull and black. This condition is simply due to neglect. They need not be allowed to oxidise to such an extent if coated with wax, as a preservative of the surface. If cleaned annually, and the wax renewed, they will keep their original colour as long as may be desired. A motion was then carried that the proposed memorial should, if funds permit, take the form of a statue in bronze on a granite pedestal, and it was decided that the questions of sculpture and site should be deferred till a meeting on Friday, March 3rd.

### Belfast's New Cathedral.

GOOD progress is being made with the bold project of erecting a cathedral in Belfast. The sum collected up to the present amounts to more than £15,000. This is sufficient for the first section of the work, which it is expected will shortly be put in hand. The architect, Mr. Thomas Drew, F.R.I.B.A., in a recent letter thus refers to the proposed designs:—"The plans seem to me to be working out hopefully. I have had the advice of several English architects who are showing wide interest in the adaptation of a Basilican idea of church for modern needs as a movement of progress in church architecture. There is a general approval of the idea that the architectural treatment might best receive suggestions from the examples of early churches of the South of France, whose Byzantine feeling is harmonious with their Basilican plans. It is possible to adopt some of the general suggestions of these very noble churches without following out details which are archaic or grotesque. Mr. Mallows, an artist most familiar with this architecture, has shown particular interest in the project. At his request I have given him sketches, from which he will make an interior. Unanimous opinion is expressed that a special feature should be an imposing central western portal, and the state approach to such an interior should be central and on a grand scale. The duplicated entrances which I last sketched do not satisfy my critics, and I shall at least try to produce an arrangement which will be more acceptable."



### More Cathedral Restoration.

YORK MINSTER, which, as the author of the handbook on York in Bell's Cathedral series quaintly puts it, has already "suffered two serious fires and a restoration," is apparently to "suffer" still further restoration. The Dean of York has issued an appeal for funds to effect much-needed repairs to the building. It is the condition of the external stonework which makes the present appeal necessary. This is in such a state of decay as to threaten not only to impair the beauty of the fabric, but to affect its stability. From the report of the architect, Mr. G. F. Bodley, A.R.A., it would appear that there is enough work to keep a dozen men busy for fourteen or fifteen years, and some £2000 a year would be needed. It is proposed to raise a capital sum of £50,000, the interest of which, added to the amount available from the Cathedral fabric fund, would furnish the necessary expense.

### Aspirations after Beauty.

THE members of the Glasgow Ruskin Society are laudably concerned for the beauty of their native city. They lately addressed to the Town Council a letter which pointed out that "while much had been done by the Corporation in recent years in public works in the city, yet much still remained to do in attaining to the ideal of beauty." We can quite believe it, and we could name other cities of which the same remark might be made. The letter proceeded to urge that it was important that the ideal of beauty should be kept prominently in view not less than utility in the growth of the city; and called upon the Corporation to avoid every violation of this ideal in works promoted by themselves, and resolutely to resist it in those promoted by others. But there have been known town councillors whose "ideal of beauty" is defective; what would the Ruskinians do in such a case? We are glad to see that the letter contained one practical suggestion, viz., that a well equipped department of design should be added to the resources of the municipality.

### Strand Improvements.

THE widening of the Strand by the demolition of Holywell Street was authorised by an Act passed in 1897, but the actual work has not yet begun. A report presented to the County Council by the Improvements Committee suggests the reason for the delay. The Council's Improvements Bill now before Parliament seeks to make provision for the acquisition of property on the north side of Holywell Street. "If the block of buildings," says the report, "between the Strand and Holywell Street be removed before the Council proceeds with the purchase of the property on the north side of Holywell Street, we are advised that that property will become very considerably enhanced in value, and the cost of the new street from Holborn to the Strand will accordingly be much increased. This being so, we are strongly of opinion that it is best not to arrange for the demolition of the block of buildings until the Council's Improvements Bill receives the sanction of Parliament, which will probably be about next July. In the meantime, we are pressing forward the negotiations for the acquisition of all the interests in the property in question."

### Hideous Advertisements.

PROFESSOR BODINGTON, in the course of a recent address to the students of the Scarborough School of Art, made a strong protest against the present mode of public advertising with sky-signs by day and illuminated signboards by night, which make the streets of our towns so hideous. Nor is it the town alone which is disfigured. As the Professor said, it is impossible to go into the country without having the eye offended by appalling schemes of colour—deliberately appalling in order to attract notice for the sake of recommending somebody's liver pills or some nostrum against a sick headache. One may hope that if the Schools of Art throughout the country do their work well, a future generation will refuse to tolerate the sights which daily offend our eyes in this commercial age. For what is the function of an Art

School? It is, as Professor Bodington admirably said, "to deliver the nation from the prevailing insensibility to beauty, which is something of a degradation." One wonders what an Athenian citizen of the time of Pericles would have thought—and said—of our gilded sky signs and gaudy advertisement hoardings.

### Photographic Records.

In Paris the Minister of Fine Arts makes arrangements for the measuring and photographing of houses of architectural or historic interest that are about to be pulled down. As there is no public authority in London charged with duties of this sort, it is satisfactory to know that private enterprise is to some extent supplying the deficiency. Sir Benjamin Stone, M.P., who has been making efforts to secure for the British Museum a National Photographic Record Collection, intends, we learn, to convene a gathering of some of those who are interested in the ancient and decaying buildings in and around London, with a view to informally discussing the possibilities and best methods of securing photographic records of interesting buildings in order to add them to the British Museum collection.

### The Thames Embankment.

It has been known for a long time that the Thames Embankment is about as bad a road as could be found in London. But as it is in ordinary times but little used for vehicular traffic no great outcry has been raised against a state of things which in some European capitals would be regarded as a disgrace. Now, however, that Parliament Street is partially closed, and a large number of omnibuses and other heavy vehicles have daily to plough their way through the thick mud, public attention is being drawn to the matter. At the meeting of the County Council last week Mr. J. Williams Benn, the Chairman of the Highways Committee, stated that some drastic remedy was imperative. It was proposed to relay the roadway with wood blocks on a concrete foundation. This, of course, would be an expensive matter, but anything is better than allowing London's finest thoroughfare to remain the Slough of Despond it now is in wet weather.

### A Veteran Architect.

By the death of Mr. Thomas Chambers Hine, F.S.A., which took place at Nottingham on February 6th, the profession of architecture has lost a distinguished and experienced member. Mr. Hine was born in 1813, and in 1834 he became partner to Mr. Patterson, with whom he had been articled. In his early days Mr. Hine became a diligent student of the Gothic style of architecture. His first work after starting practice for himself was the Bentinck Memorial erected at Mansfield. Later he devoted himself chiefly to ecclesiastical architecture. He was responsible as architect for the building and restoring of a large number of churches in Notts. and the surrounding counties. Mr. Hine retired from active work in 1890, but since then he had been busily engaged, almost up to the time of his death, in artistic and antiquarian studies.

### Artist or Craftsman.

MR. VERESTCHAGIN, the famous Russian artist, in the course of a rather curious article in the "Westminster Gazette" discusses the essential characteristics of the artist, and shows wherein they differ from those of the mere craftsman. "I insist," he says, "on the fact that it is unjust to call a craft only the so-called 'day's work,' and unjust to find art only in painters, sculptors, writers, musicians, actors, down to photographic improvers inclusive; it is unjust to think that only the representatives of these professions are artists; well it is that they themselves should be assured of this, when often amongst them are some less real artists than are to be found, for instance, amongst peasant handicraftsmen, creating cunning little things out of their own brains and with their own rough fingers. All persons putting into their work not only

talent but creative power are certainly artists in their work, and this in all spheres of intelligent labour—everywhere natures endowed with the artistic fibre direct the work, infuse into it movement and life, while businesslike natures manage routine work, crafts."

### Birmingham Art School.

THE Municipal School of Art at Birmingham is one of the largest and most successful Art Schools in the kingdom. The Central School and its branches have now some 4000 individual students, drawn from all classes of the citizens, and interested in nearly every department of local industry. The fourteenth exhibition of students' work was opened last week, and some 1100 works were exhibited. The exhibits include some fine drawings in building construction and architectural design. The Chamberlain Medal is awarded to William Haywood for a design for a country house; the same exhibitor takes a prize of £5 for a design for a town house. Harry Phibbs is the winner of the prize for architectural measured drawings.

### Sir W. B. Richmond on Ruskin.

THE prizes were distributed last Friday by Sir W. B. Richmond, who in the course of his address referred to the loss sustained by art in the death of some of its great leaders, primarily Lord Leighton, who first began to remove the somewhat insular prejudice, which was natural to the country, that a work of art must necessarily be an oil picture. There remained with them, however, a great teacher in John Ruskin. It was impossible to estimate what he had done for the arts of the country. Notwithstanding the kind of reversion of feeling which had taken place in the new direction they called Impressionism, the great man still survived, and still interested them. The first thing Ruskin did was to call the attention of the English people to the beauties of nature; he also enlisted their interest in earlier forms of Italian art, and he led them in a pure direction. Naturally a reaction came, and they found themselves, after the extraordinary era of Purism, suddenly launched into the French atmosphere, which now went under the name of Impressionism. But he (the speaker) saw considerable signs of the malady abating, because, until it was abated, the arts of design would not have a fair chance. He regarded the crafts as essential to the welfare of the art of England.

### The Greyfriars' Church Dispute.

THE Greyfriars' Church question has entered a new phase. At the Town Council Mr. Gordon, Town Clerk, read a letter which he had received from Messrs. Menzies, Black, and Menzies, Edinburgh, to the effect that since they last communicated with him on the subject of Greyfriars' Church, negotiations had been going on between their clients and the other parties interested, which seemed to hold out a prospect of an early settlement of the difficulties. In consequence of this their clients had not been pressing the matter in the meantime. By the decision of the Town Council on the 16th ult. these negotiations had been brought to a fruitless end. The delay had caused, and was causing, great inconvenience in connection with the parish work. Their clients were agreeable to have had the church restored on its present site, but as this was not to be done they had instructed the firm to press energetically for fulfilment of the second section of the agreement, schedule 2, the Aberdeen University Buildings Extension Act, 1893, by the erection of a new church on the site stated in the agreement. The firm would be obliged if the town clerk would submit the letter to the first meeting of the Council, when they hoped to learn that arrangements were made for progress in getting the agreement carried out, as failing satisfactory arrangements being immediately made their instructions were to raise an action for implement of the agreement. It was agreed that the matter should be considered by the Council in committee.



## Keystones.

**A Ruskin Hall** is to be formed at Liverpool.

**A Public Library** is to be erected at Weston-super-Mare.

**St. James-the-Less Church, Ancoats**, is to be repaired and decorated at a cost of £600.

**A proposed new theatre** for Stoke-on-Trent, at a cost of £15,000, has just been granted a license.

**The restoration of the Bradford Parish Church** is expected to be complete within about two months.

**A stained glass window** in memory of Mr. Gladstone is to be added to the Cleckheaton Liberal Club.

**Birtley**.—The foundation stone has been laid at Birtley of a new Primitive Methodist chapel, which is to cost £2800.

**A Gladstone Statue** is proposed for erection in Glasgow, and the Lord Provost will hold a meeting of citizens to-day.

**Malin Bridge, Sheffield**.—A site for a new Methodist New Connexion chapel has been secured at Malin Bridge, near Sheffield.

**A New Parish Hall** in connection with St. Cuthbert's Church has been opened in Framwellgate, Durham. The mission room has cost £700.

**A Memorial Window** has been added to Park Church, Glasgow. It is a light and traceried window, and has been stained glass erected by Messrs. Stephen Adam and Son.

**Skeen Square, Aberdeen**, is to be widened on its west side, under an arrangement with Mr. George Watt, architect, who owns property there.

**A new organ** has been presented to Drum-banagher Church, Down. The instrument was built by the Messrs. Telford and Telford, St. Stephen's Green, Dublin.

**An Art School** and Technical Institute over the Butter Market, Chichester, is proposed for erection, and a Local Government inquiry was held last Tuesday week.

**New Schools at St. Werburgh's, Derby**, are to be shortly erected, and towards their cost Mr. Alton has promise to give £1000. The Bishop of Derby is giving a site in Uttoxeter New Road.

**The rebuilt Colston Hall, Bristol**, is to be provided with an organ, by Sir William Henry Wills, M.P., to be built by Henry Willis, at a cost of £5000 to take the place of the fine instrument entirely lost in the fire.

**A new west window** has been added to St. Peter's, Newlyn. The window contains memorial lancets to Bishop Philpotts, of Exeter, and Archbishop Benson, the first Bishop of Truro.

**Plans of a Model Lodging-house** at Sheffield are to be submitted to the Local Government Board for approval. They will be two or three-story buildings, rather than the barrack-like kind erected in London and many other large cities.

**The Belfast Maternity Hospital** is to be rebuilt, the present accommodation being quite inadequate. The new building is expected to cost about £7000, and a committee has been appointed to raise the necessary funds.

**A Good Bargain**.—Mr. Benton, the contractor who purchased Christ Church, Birmingham, for a £5 note, because it had to be pulled down immediately, expects to clear £2000 by the transaction. The bell alone has changed hands for £80.

**A handsome memorial** of the late Mr. Henry F. Begg, Lochnagar, has been erected in Allenvale Cemetery, Aberdeen. It is of white Kemnay granite, and is in the form of a very elaborate tablet, 11ft. wide by 10ft. high, with three moulded bases, a massive inscription block, surmounted by a finely designed moulded pediment cap. The design of the memorial is by Mr. A. Marshall Mackenzie, A.R.S.A., and the work has been carried out by Baillie Taggart, Great Western Road,

**The New School of Art, Wordsley**, was opened last Monday week. Mr. T. Robinson is the architect, and Mr. G. Meanley the builder. The cost has been about £1300, but it should be stated that a number of gifts of terra-cotta and other work have been made.

**A Pastel Exhibition**, the first that has been held in London for eleven years, is now open at the Royal Institute. This art has been more popular in France than in this country, and some of the best things in the present Exhibition have been sent over from Paris.

**The aerial graphoscope** formed the subject of an interesting lecture delivered by Mr. Eric St. Bruce, M.A., under the auspices of the Leeds Institute of Art, Science, and Literature on Wednesday. The instrument gives photographic projections without the aid of a screen.

**Pendleton's Dominican Church** of St. Sebastian is now in course of erection in the Gerald Road, Pendleton. A priory, to accommodate a larger number of fathers, will soon be built according to the designs of Messrs. Sinnott, Sinnott, and Powell, the architects of the new church.

**A Public Hall for Larbert, Scotland**, is to be given by Major Dobbie, of the firm of Messrs. Dobbie and Forbes, ironfounders, Larbert. The hall the Major proposes to erect is to cost from £7000 to £8000, and will be capable of holding from 1000 to 1200 people. A free site is also in the gift.

**A New Educational Association** has been formed, having for its object the banding together of managers and governors of schools with a view to effecting various improvements in the prevailing systems of general and technical education. Mr. C. E. Luard, of Seven-oaks, is the hon. secretary.

**The Aberdeen Harbour Board** have under consideration a scheme by Mr. R. Gordon Nicol, harbour engineer, for the proposed extension of the Fish Market along Palmerston Quay. The cost of the alterations is estimated at £3760, and the time required for carrying them out at about five months.

**The Nave of Truro Cathedral** is to be completed as a memorial to the late Archbishop Benson. At a recent meeting of the Cathedral Committee it was decided to invite tenders from six firms recommended by the architect, Mr. Pearson, and from such other firms—not exceeding six—as the Executive Committee might select.

**Bermondsey Abbey**.—The Rev. W. F. Brown points out that the Tower Bridge southern approach, at present in course of formation, will run right across the site of Bermondsey Abbey and the Abbey Church, and he expresses the hope that any relics or remains that may be discovered will be carefully and reverentially treated.

**The Ironmongers' Almshouses**, in the Kingsland Road, are threatened with destruction. The vestry of Shoreditch wants the site on which they stand for the erection of an electric light station, and is appealing to the County Council to ask for powers of compulsory purchase in their next General Powers Bill. It is to be hoped the Council will reject the appeal.

**A Church for Sale**.—The following curious advertisement appeared recently in the "Liverpool Post":—"On sale, St. John's Church, Liverpool, comprising four bells, clock in steeple, pews, timber, slates, flags, stone, bricks, doors, windows, copper plates, lead, heating apparatus, safe, forms, tables, gas fixtures, tiles, &c.—Apply, H. Hindley, Leigh, Lancashire.

**New Buildings at Greenock**.—The following plans have been passed for erection in Greenock:—Messrs. Scott and Co., to erect new sawmill premises at their east shipbuilding yard. The Board of Police to erect in Hunter Place a power-house and generating station for electricity. The plans show a building of three stories in height and plain in design. The building, which will be of brick, will consist of boiler-house, office, generating departments, &c. The estimated cost is £5000,

**Mr. Goscomb John, A.R.A.**, one of the four artists recommended to the committee by the President of the Royal Academy, has been commissioned to execute a statue of the late Duke of Devonshire, which is to be erected at a cost of 1000 guineas, probably at the seaward end of Devonshire Place, Eastbourne. The statue, which is to be in bronze, will have a height of 9ft., and will have a granite base.

**A bronze statue** to ex-Provost Peter Reid has been erected at Forfar, and was unveiled last Saturday week. The figure is life and a quarter size, and is seated in a chair, placed on the top of a polished granite pedestal. Mr. George Webster, of Edinburgh, is the sculptor, and the bronze is by Messrs. J. W. Singer and Son, of Frome. The statue was set up by Mr. James Maclean, builder.

**New Hospital for Scarborough**.—The Local Government Board have held an inquiry at Scarborough with reference to the application of the Corporation for power to borrow £15,000 for the erection of a new infectious diseases hospital. It will contain thirty-two beds, and provision is made for the reception of cases of scarlet fever, enteric fever, diphtheria, measles, &c. Ample provision is made for enlargement if necessary.

**The Damming of the Nile**.—On Sunday, the Duke of Connaught laid the foundation-stone of the first of the two huge dams which are being constructed across the Nile by the Egyptian Government through the agency of Messrs. John Aird and Co. The work of building the dam is expected to occupy ten months. The dam will be a mile and a quarter in length, 80ft. wide at the base, and 80ft. high. It will raise the level of the Nile for a distance of 140 miles.

**The Birmingham City Council** last Tuesday week approved of the plans for the erection of the proposed new cattle market in Montague Street, at an estimated cost of £9957 and £750 for Architect's commission, and also the plans for the new asylum at Hollymoor, at a cost of from £120,000 to £150,000. A number of memorials praying for the establishment of a natural history museum for Birmingham were referred to the General Purposes Committee.

**Acetylene Gas for Hawes**.—At a representative meeting of tradesmen and others interested in securing a better light for the town of Hawes, Mr. G. S. Beckett gave an exhibition of acetylene gas, and made a statement of its advantages as an illuminant. It was decided to form a small company for the purpose of lighting the town with this gas. A committee was appointed to arrange for the formation of a company to obtain the permission of the Rural District Council to lay mains.

**Glasgow Fine Arts Institute**.—The thirty-eighth annual exhibition of pictures and sculpture held by the Royal Glasgow Institute of the Fine Arts was opened last week. There are many meritorious works, though few of outstanding interest, and the hanging arrangements are not of the most satisfactory kind. One of the most striking among the architectural subjects, is a drawing by T. M. Cappon, F.R.I.B.A., of the Church and Presbytery for St. Patrick's, Dundee.

**An Irish Light Railway**.—A scheme is on foot for constructing a light railway from Newry to Keady. The project has excited throughout the district very considerable popular interest. The executive committee have taken steps with a view to securing returns as to the traffic which would be obtained from the different districts through which the line will pass. They have also conferred with the directors of the Clogher Valley Railway, who are heartily in favour of the scheme.

**Liverpool Post Office**.—By permission of Mr. W. H. Preece, C.B., F.R.S., members of the Liverpool Engineering Society last Wednesday inspected the new Liverpool post office fittings and machinery. Mr. Preece, himself was present. The new building covers nearly two acres of ground, while there is provision for future extension towards Whitechapel. The cost can at present only be roughly estimated, but it will not including, site, be less than £350,000.



## Professional Practice.

**Aberdeen.**—The plans of the following new buildings have been sanctioned by the Plans Committee of the Aberdeen Town Council:— Dwelling-house on the north side of Queen's Road, for Mr. Archibald Coutts, engineer, per Mr. George Coutts, architect; two dwelling-houses on the west side of Wallfield Crescent, for Mr. Leslie Smith, builder, per Mr. R. G. Wilson, architect; alterations and additions in connection with No. 16, King Street, for Mr. John E. Esslemont, merchant, per Mr. R. G. Wilson, architect; two dwelling-houses on the south side of Brown Street, Woodside, for Mr. Charles Lamont, Brown Street; stone-polishing mill, sheds, and offices on the north side of Regent Walk, for Mr. Robert Lawrence, stone-cutter, per Mr. William Smith, architect; shed on the west side of Hardgate, for Mr. William Anderson, gardener.

**Dundee.**—The drawings lodged in this session's competition of the Dundee Institute of Architecture are as follows:—In Class I. five sketch books were sent in, and the first place is adjudged to Mr. David Harvey, 2, Southfield, St. Andrews, whose "sketches" show more of the painstaking endeavour to sketch something which will be of future use; and that submitted by Mr. James Marshall, Langlands Street, Dundee, is highly commended. In Class II. four sets of measured drawings were submitted, the first place being awarded to Mr. David Nivison, Guardbridge, Fife, for his drawings of Leuchars Church. The others are Murroes Church, by Mr. James Nicoll; Dairsie Church, by Mr. F. C. Webster; and St. Serf Church, Dysart, by Mr. John Keddie. In Class III. only one work was sent in, viz., a memorial tablet by Mr. G. T. Mitchell, to whom an honorarium was awarded. In Class V. the works are one study of an external doorway, three studies of wall drinking fountain, and four studies of iron gates and railings. The first place is awarded to Mr. James Marshall for his exterior doorway; while Mr. John A. Myles is highly commended for his two works under the mottoes *Scotia* and *Caledonia*. The judges were Messrs. T. M. Cappon, F.R.I.B.A.; James Hutton, George Jamieson, R. Blackadder, and J. J. Henderson, and they considered that the works sent in compare favourably with those submitted in previous years. At the same time there is still room for more competitors and better work.

**Harrogate.**—The result of the competition for the erection of a new Pump Room is as follows: First premium, £50, Mr. F. Anderson, 18, Adam Street, Adelphi, London, W.C.; second premium, £30, Mr. Arthur A. Gibson, architect, Harrogate; third premium, £20, Messrs. Eade and Johns, architects, Ipswich. By the conditions of the competition, the cost of the building was not to exceed £8000. As an alternative, designs were invited for the enlargement of the present Royal Pump Room, and in this competition also Mr. Anderson takes the first premium, £30. The second premium, £20, is awarded to Mr. E. Jenkin Williams, architect, Cardiff; and the third, £10, to Messrs. Hunt and Shield, 3, New Inn, Strand, London, W.C.

**Lowestoft.**—The new Baptist chapel, Lowestoft, was opened for worship on Thursday. The new church has seating room for upwards of 700 persons. The pulpit is of Caen stone, with green marble shafts. The general scheme of the church is a central nave with lofts, open-timbered ceiling, and a range of three-light windows in a clerestory on each side over the lean-to aisle roofs. The whole internal arrangements are well carried out. Externally the front of the church consists of a bold central gable, containing three windows on the ground floor, and a large five-light traceried window above, all flanked by octagonal pinnacles on each side, and beyond rises a handsome square tower containing the main entrance doorways, above which are triple windows. The whole of the work has

been carried out by Mr. John Ashby, builder and contractor, South Lowestoft, from the designs and under the superintendence of Mr. George Baines, F.R.I.B.A., 5, Clement's Inn, London.

**Sheffield.**—The Gleadless Road Board Schools, Heeley, have been extended by the addition of a new Girls' Department. The architect, Mr. C. J. Innocent, has provided what is a new departure—large separate rooms for cookery and manual instruction. These rooms are in the basement, and are lofty and well lighted. They are provided with separate entrances. The new building accommodates 390 girls, at a cost of about £11 14s. 2d. per head. The contractor was Mr. John Lister, of Aston. Messrs. J. C. and J. S. Ellis have put in the heating apparatus.

**Southwark.**—The new Passmore Edwards public library, which has just been erected in the Borough Road by the Library Commissioners of the Parish of St. George the Martyr, Southwark, was formally opened on Wednesday. The new building, which is situated close to the Borough Polytechnic, has been constructed in red brick and terra-cotta from the designs of Mr. A. B. Jackson, and contains lending and reference libraries, news, magazine, and boys' rooms, and a residence for the librarian.

**Tottenham.**—An action (*Tyler v. Renad*) in the Queen's Bench Division, on last Monday week, was brought by Mr. Robert Emeric Tyler, architect, carrying on business in the City, against Mr. Charles Renad and Mr. Frederick Renad, the well-known acrobats, to recover £300 in respect of fees for preparing the plans and drawings for a theatre at Tottenham. Defendants denied liability.—Mr. Maloney appeared for the plaintiff, while Mr. Parkyn represented the defendants.—Plaintiff stated that on January 25th, 1897, he was introduced to Mr. Frederick Renad, who informed him that he and his brother proposed to build a theatre at Tottenham, and asked whether he would act as architect. He agreed to do so, and, in accordance with instructions which he received from Mr. F. Renad, he prepared the necessary plans and drawings, which had to be submitted to the District Council at Tottenham and the Middlesex County Council. The plans were passed by these authorities, quantities were taken out, and builders were invited to tender for the erection of the theatre; but eventually the scheme fell through owing to the fact that the necessary money was not forthcoming. He now contended that he was entitled to recover from the defendants his fees at the rate of three per cent. on the lowest tender submitted.—The defendants denied that they instructed the plaintiff to prepare the plans and drawings in question, and contended that, if he prepared them at all, he did so at the request of the Albert Theatre Syndicate (Limited), which was formed for the purpose of purchasing the freehold of the Tottenham Public Hall and adjoining land, and erecting a theatre on the site. They further said that the plaintiff was a member of the syndicate, and that his remuneration was dependent on the success of the scheme.—Plaintiff, in reply, said there was no ground for the suggestion that he prepared the plans and drawings on behalf of the syndicate. As a matter of fact he did not hear anything about the syndicate until some time had elapsed.—The jury found a verdict for the plaintiff, and assessed the damages at £258 13s., and judgment was given accordingly.

**The New Town Hall for Cardiff.**—The Mayor of Cardiff has undertaken to invite members of the Royal House to visit Cardiff in connection with the forthcoming National Eisteddfod, to take place in July next. It has also been resolved that, subject to the architects being able to make arrangements, a request to lay the foundation stone of the new Town Hall and Law Courts be embodied in the invitation to Royalty to visit Cardiff in July.

## Under Discussion.

### HINTS ON SHORING.

At a recent meeting of the Glasgow Architectural Association, Mr. W. H. Baxter read a paper entitled, "Some Hints on Shoring." The paper dealt with the difficulties commonly met with in the carrying out of such work, and especially in regard to needle and to raking shores and their foundations. In connection with the former, whilst the use of the screw jack was advocated, the danger of leaving them to carry all the weight was pointed out and blocking up under the needle was suggested. The use of cast-iron needles was condemned especially in conjunction with screw jacks, owing to the unreliability of the materials. Steel rolled beams were better, owing to their elasticity. The calculation of the weight to be borne by these was touched upon, and it was pointed out that in the era of fireproof construction which lay before us, the added weight of these would require to be allowed for. Common joisted floors, which weighed 12lb. and 14lb. per square foot, were now replaced by patent systems weighing up to 60lb. and 70lb. per square foot. Improved methods of bracing openings and supporting internal and area walls were demonstrated. Raking shoring was taken up, and some of the English methods were shown by drawings, and the peculiarities of shoring for brickwork were exhibited. The mechanics of raking and flying shores, and the calculations necessary before their erection, closed the practical side of the paper. In his conclusion, the lecturer blamed the present day method of describing such work in specification as the cause of so much inferior and insecure work being in evidence in Glasgow, and gave it as his opinion that if architects were to take a closer personal interest in the work and control it to a greater extent than at present, the system of doing such work would be improved. The paper evoked a good deal of discussion, and the lecturer was awarded a vote of thanks at the close.

### BRITISH ARCHÆOLOGICAL SOCIETY.

At the meeting of this Association, held at the rooms in Sackville Street, Piccadilly, on the 1st inst., Dr. Winstone in the chair, Mr. Joseph K. Aston exhibited, through Mr. Bloshill (honorary treasurer), a number of objects found in excavating for the foundations of new additions to the Bounty Office, Dean Street, Westminster. The new building fronts on Great Smith Street, and the site is probably on the margin of Thorney Island, on which Westminster Abbey was founded. The objects exhibited included a perfect specimen of a Bellarmine bottle or "Greybeard," and fragments of English and Dutch pottery with eighteenth century china. Several copper coins of George II. indicate the age of the stratum through which the excavations were carried. Three Nuremberg tokens of the sixteenth century were also found. Amongst numbers of bones of animals that were met with were several skulls of the wild boar and bones of the ox, possibly of the wild ox. Mr. Could exhibited the rim of a vase found at Chigwell, Essex, interesting as showing the survival of ornament of the Bronze age. Mr. Earl Way brought for exhibition a collection of Roman pottery from Southwark, consisting of Samian and Upchurch ware of the best period, also some small glass bottles and a bone needle, with coins of M. Agrippa, Claudius, and Nero, and a Roman lady's hairpin of bone, nicely carved and terminating with a crown. He also submitted a Greek coin of Alexander the Great in fine condition, and a rosary of polished stone beads from Burmah. The Roman remains were found on the site of a pile dwelling near Southwark Street, at the depth of 14ft. from the surface, the hairpin at the depth of 9ft. The paper of the evening was by Mr. C. H. Compton, V.P., and formed the second part of a paper on the Welsh Marshes, read by him on Dec. 7 last. Before the meeting separated,



a vote of congratulation to the Mayor and Corporation of Southampton upon the preservation of the Bar Gate was unanimously passed, and directed to be transmitted to the Town Clerk by the hon. secretary.

#### SOCIETY OF ENGINEERS.

The first ordinary meeting of the Society of Engineers for the present year was held on Monday, February 6th, at the Royal United Service Institution, Whitehall. Mr. William Worby Beaumont, the President for 1898, occupied the chair, and presented the premiums awarded for papers read during that year, viz.: The President's Gold Medal to Mr. Fox, the Bessemer Premium to Mr. Sherard O. Cowper-Coles, the Rawlinson Premium to Dr. J. C. Thresh, and a Society's Premium to Mr. George Thudichum. Mr. Beaumont then introduced the President for the present year, Mr. John Corry Fell, to the meeting, and retired from the chair, receiving a hearty and unanimous vote of thanks for his services during the past year. Mr. Fell then delivered his inaugural address, in the course of which he discussed the question of the protection of inventions by patent in engineering practice, and pointed out the curious fact that civil engineers availed themselves less than any other members of the Profession of the privileges accorded to inventors by patent, designs, or copyright protection. This, he said, was perhaps due to the circumstance that civil constructive engineers took a higher professional standpoint, and considered that the credit attached to their designs, however useful or beautiful, was a sufficient reward without seeking to retain a monopoly in them by patents, even for a time. This view, he said, did not extend to the mechanical branches of the Profession, where every little detail improvement in machinery was protected, and a commercial end thus served. He did not, however, see why the same principle should not be observed by the civil engineer in regard to bridges, roofs, girders, and the like constructive details. With regard to successful invention, the President observed that the conditions should be the result of analysis or synthesis, not mere chance dashes into an unknown field. The method of analysis may be defined to be first an appreciation of a want to be met, with which the inventor is familiar, and then by a laborious selection from what is known, the development, by successive efforts, of a combination of suitable means to meet the want. The President then proceeded to give a short summary of the advances made of late years in various departments of engineering, in which he first referred to the increase in horsepower in engines which was obtained from a minimum of dead weight of material, and he explained the way in which it had been effected. In steam boilers, too, great advances had been made by the development of the water-tube system. He then referred to the progress made in electric lighting and in the application of electricity to the driving of machinery, especially in its use on railways. In this latter connection he described the recent development of the electric railway system in the metropolis. Improvements in gas lighting and the progress of acetylene as an illuminant were then discussed, and, finally, the latest phases of naval construction, including submarine torpedo boats, were considered.

#### SHOP FRONTS.

At a meeting of the Glasgow Architectural Association on February 7th, Mr. George S. Hill, A.R.I.B.A. in the chair, a paper was read by Mr. John Lochhead, A.R.I.B.A., entitled "Shop Fronts." The essayist shortly described the shops of the seventeenth and eighteenth century, and quoted several enactments passed about those times regulating the projection of stall board, resulting in the flat bow window which was still a common feature of English shops. With the introduction of plate glass the necessity for numerous astragals had been done away with, and, with the possibilities of having large windows in single sheets, the desires of tenants had increased, and shops to please them

must have the whole front practically one sheet of glass. It was almost always the desire of the tenant of a corner site to carry his windows unbroken round the corner, and this caused a great loss of appearance to the whole building, as all idea of strength at the corner was gone when the corner butt was dispensed with. The idea of recessing the shop front and carrying along a colonnade was good, as it afforded not only protection to the windows, but also to the public while examining the goods on view. The interesting series of shops called the "Row" at Chester was referred to, where the first floor was also devoted to shops, access being obtained by means of a gallery running along at that level. The speaker advocated greater individuality being given to shops occupied by tenants carrying on different trades, and showed by means of photos and sketches the different treatment which could be accorded with pleasing effect to provision shops, public-houses, &c. In this connection also a large number of drawings were shown illustrating the treatment which the upper portion of a show window could have, either by dividing the pane by vertical or radiating astragals, or by the uses of etched lines, &c., round the panes. As only a height of 7ft. to 8ft. was required for the show case in the window, the treatment thus given did not detract from the showing of goods, while at the same time giving a most pleasing effect to the whole window. At the close of his paper the meeting accorded a cordial vote of thanks to Mr. Lochhead.

#### ELECTRIC TRACTION IN TOWNS.

At a meeting of the Birmingham Association of Mechanical Engineers, last Saturday week, Mr. J. Cox presiding, Mr. G. Conaty, of the Birmingham and Midland Tramways Company, read a paper on "Electric Traction, its Application in large Towns." After a brief reference to the historical side of the subject, and an expression of opinion in favour of the municipalisation of tramways in large self-contained towns, he proceeded to compare the relative value and utility of the systems now before the public from the standpoint of cost and of mechanical efficiency. The open conduit system, he said, seemed to meet with most approval from local authorities, but the only advantage claimed was that poles and overhead wires were not required. The cost of the system was, however, exceedingly high, and unless the traffic was enormous, a tramway based on that system could not possibly pay. In England the cost would amount to from £10,800 to £12,000 per mile of single track. The prolonged obstruction of the streets during construction was another serious disadvantage of the system, while there was also a danger in having a slot in the centre of the track. The closed conduit system had not, up to the present, received many supporters, it having barely passed the experimental stage. The cost was said to be much less than the open conduit system, but to mechanical engineers the difficulties attendant upon keeping the delicate switching parts in satisfactory order must be apparent. The accumulator system he dismissed with a reference to Birmingham's experience, and the statement that many improvements must be made before it could receive attention. The special advantages of the overhead system were cheapness, a minimum amount of inconvenience and delay during construction and repairs, and little interference with the surface of the streets. The principal objection to the system was, he said, its appearance. Turning to the practical details of overhead traction, he dealt first with the method of laying the track, advocating as the more permanent method the laying of the rails on longitudinal sleepers of pitch pine. It was, he continued, the method of suspending the trolley-wires which was responsible for most of the prejudice existing against the overhead system, but objection could hardly be raised to the appearance of the ornamental bracket centre poles used for traction and lighting purposes, which had been generally adopted

in English towns where the system was in use. The objection could only be raised in the case of towns with narrow streets, or where there was insufficient space between the two sets of rails to allow for centre poles. He had come to the conclusion that the Dickinson side contact system was the most suitable to meet that difficulty, and that its general adoption would remove all objection to overhead wires. In that system it was not necessary that the trolley-wire should follow the curvature of the track, and therefore the sidearms of the poles could be kept comparatively short. The trolley-pole formed a continuous bridge between the wire and the car. To accomplish that the apparatus had a vertical and horizontal radial movement, and would accommodate itself to the varying distances of the wire from the track to any position within its reach. Concerning the location of the power-station he expressed opinions unfavourable to the utilisation of the heat from refuse destructors for the production of "power." The construction of the other items of the plant, such as engines, generators, rolling stock, motors, brakes, and life protectors, were also reviewed. The working cost, under everyday conditions of electrically equipped tramways in Leeds was about 8.62d. per car mile.

#### ELECTRICITY IN THE POST OFFICE.

Mr. W. H. Preece, C.B., engineer-in-chief of the Post Office, and president of the Institute of Civil Engineers, on Wednesday evening, at the Royal Institution, Liverpool, read before the Liverpool Engineering Society a paper on "Electricity in the Post Office." Mr. J. A. Brodie presided. Mr. Preece said that the length of telegraph wires in this country had increased, while under Post Office administration, from 60,000 to 300,000 miles, telegraph business had increased four times as fast, and the fact that four times as much work was now done by the same length of wire was due to improvements made by officers of the postal service. He said it was possible now to transmit at 600 words a minute. There were 158,997 telephones at work in this country. As to trunks, the Post Office in 1897 took over 29,000 miles of wire. The length had since been increased to 56,000 miles, and the receipts had doubled. Mr. Preece went on to refer to cabling by telephone, as to the development of which over very long distances he took a sanguine view. He also dealt with the economies effected in the use of electricity for telegraphic purposes. The Post Office now produced its own electricity at 1d. per Board of Trade unit, and were replacing the old primary cell batteries, which cost 6s. per Board of Trade unit, by accumulators. The use of copper in electricity as compared with iron, was an improvement which he claimed had been introduced by the Post Office of this country. It was the use of copper which allowed of long-distance telephoning. Referring, in conclusion, to wireless telegraphy, he pointed out that it was already in use between forts at Laverock, on the Glamorgan coast, and Flat Holme, an island in the Bristol Channel. It had never been known to fail, and was independent of daylight or darkness, dry weather or wet, fog or clear air. He considered that wireless telegraphy had a great future.

**Birmingham Church Building.**—The trustees under the Birmingham Churches Act have, with the sanction of the Lord Bishop of Worcester, decided to make, out of the funds arising from the sale of Christ Church, the following grants for church building in the rural deaneries of Birmingham, Aston, and Northfield:—St. Luke's, £4000; Aston St. James, £500; Stechford £500; St. Barnabas Balsall Heath, £1000; for a new church at King's Heath, £1000; and for a new church at The Cotteridge, £2500. A sum has been reserved for the site of a second new church, which it is hoped will be built shortly, in the parish of Sparkbrook.



## CURRENT PRICES.

## OILS AND PAINTS.

Castor, French	per cwt.	1 7 6	1 10 0
Colza, Foreign	per ton	24 0 0	—
Do. English	per cwt.	1 2 6	—
Copras	per ton	2 0 0	—
Kerosine, water white	per cwt.	1 5 0	1 15 0
Lard	per ton	28 10 0	32 10 0
Linseed	per cwt.	0 17 10 1/2	—
Neatsfoot	per gal.	0 2 6	0 4 0
Paraffin	per cwt.	0 10 0	0 19 0
Pitch	per cwt.	0 8 0	0 9 0
Tallow, Town	per cwt.	1 1 6	—
Tar, Stockholm	per barrel	1 5 6	1 6 0
Turpentine	per cwt.	1 11 6	—

## METALS.

Copper, sheet, strong	per ton	81 0 0	83 0 0
Iron, bar, Staffs. in London	do.	6 5 0	7 10 0
Do. Galvanised Corrugated sheet	do.	11 0 0	11 10 0
Lead, pig, Spanish	do.	14 7 6	—
Do. English common brands	do.	14 15 0	—
Do. sheet, English, 6lb. per sq. ft. and upwards	do.	16 10 0	—
Do. pipe	do.	17 5 0	—
Nails, cut clasp, 3in. to 6in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Straits	do.	108 5 0	—
Do. English ingots	do.	117 0 0	113 0 0
Zinc, sheets, English	do.	27 10 0	28 10 0
Do. Veille Montaigne	do.	30 0 0	—
Do. Spelter	do.	27 0 0	27 10 0

## TIMBER.

## SOFT WOODS.

Fir, Dantzic and Memel	per ld.	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Laths, log, Dantzic	per ft.	4 10 0	5 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Deals, Archangel 2nd & 1st per P. Std.	do.	9 15 0	10 5 0
do. do. 4th & 3rd.	do.	10 0 0	11 0 0
do. do. unsorted	do.	7 5 0	8 5 0
do. Riga	do.	8 5 0	9 5 0
do. Petersburg 1st Yellow	do.	14 0 0	14 15 0
do. do. 2nd	do.	8 0 0	9 0 0
do. do. Unsorted	do.	8 0 0	9 5 0
do. do. White	do.	7 15 0	8 15 0
Do. Swedish	do.	9 15 0	12 10 0
Do. White Sea	do.	10 15 0	18 0 0
Do. Quebec Pine, 1st	do.	17 16 0	20 10 0
Do. do. 2nd	do.	11 10 0	—
Do. do. 3rd & 4th	do.	6 0 0	7 10 0
Do. Canadian Spruce, 1st	do.	8 15 0	9 0 0
Do. do. 3rd & 2nd	do.	7 10 0	7 15 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	do.	6 7 6	8 5 0
Flooring Boards, 1 in.	per square	0 11 3	—
Do. prepared, 1st	do.	0 10 6	—
Do. 2nd	do.	0 10 6	—
Do. 3rd & 4th	do.	0 9 9	—

## HARD WOODS.

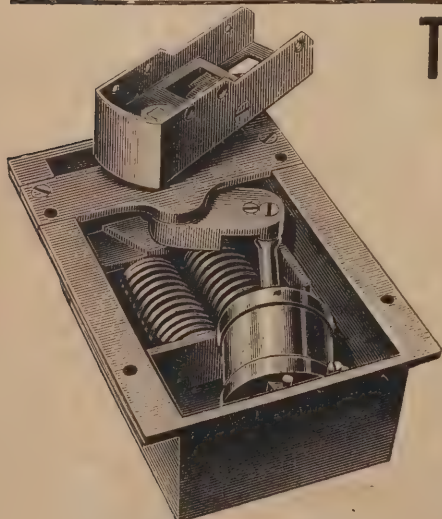
Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 0 0	5 0 0
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, lin. Cuba	per ft. sup.	0 0 4	0 0 4 1/2
Do. Honduras	do.	0 0 4 9 16	—
Do. Tobasco	do.	0 0 4 1/2	0 0 4 1/2
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 5 1/8	—
Do. African	do.	0 0 3 11 16	—
Do. St. Domingo	do.	0 0 4 15 16	—
Do. Tobasco	do.	0 0 5 31 32	—
Oak, Dantzic and Memel	per load	3 5 0	3 15 0
Do. Quebec	do.	4 5 0	5 10 0
Teak, Rangoon, Planks	do.	10 5 0	5 15 0
Wainscot, Riga (Baulk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub. ft.	0 2 9	0 4 3

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## COMING EVENTS.

## Wednesday, February 15.

BRITISH ARCHEOLOGICAL ASSOCIATION. — Prof. McKenny Hughes on "The Fens." 8 p.m.

BUILDERS' FOREMAN AND CLERK OF WORKS INSTITUTION.—Ordinary meeting of members at 8 p.m.

EDINBURGH ARCHITECTURAL SOCIETY.—J. Connell on "Some Legal Points affecting Architects." 8 p.m.

MANCHESTER ARTS AND CRAFTS LECTURES.—H. A. Prothero, M.A., F.R.I.B.A., on "English Church Architecture." 8 p.m.

SOCIETY OF ARTS. The Rev. J. M. Bacon on "The Balloon as an Instrument of Scientific Research."

## Thursday, February 16.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY (Hotel Victoria, Northumberland-avenue, S.W.).—Mr. Holroyd Smith on "Electric Tramways," 7.30.

INSTITUTION OF CIVIL ENGINEERS.—Student's visit to the New Vauxhall Bridge Works, at 2.30 p.m.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—T. R. Spence on "The Elements of Design in Painting." G. C. Haite, R.B.A., F.L.S., in the Chair.

SOCIETY OF ANTIQUARIES.—Meeting at 8.30 p.m.

## Friday, February 17.

ARCHITECTURAL ASSOCIATION.—Cole A. Adams on "Colour Decoration." 7.30 p.m.

GLASGOW AND WEST OF SCOTLAND TECHNICAL COLLEGE ARCHITECTURAL SOCIETY.—Robert W. Horn, A.R.I.B.A., and Alex. Davis on "Notes on Building Materials."

## Saturday, February 18.

ARCHITECTURAL ASSOCIATION.—Second Spring Visit to the Roman Catholic Cathedral, Ashley Gardens, Victoria-street, Westminster. J. F. Bentley, architect. 3 p.m.

PERTH ARCHITECTURAL ASSOCIATION.—Visit to Wilson U.P. Church, New Scott-street. 2.30 p.m.

ROYAL INSTITUTION.—Lord Rayleigh on "The Mechanical Properties of Bodies." II. 3 p.m.

SOUTH KENSINGTON MUSEUM (Lecture Theatre).—J. H. Pollen, M.A., on "Furniture." II. 3.30 p.m.

## Monday, February 20.

CARPENTERS' HALL LECTURES.—Professor Roger Smith, F.R.I.B.A., on "Terra-Cotta: Its nature, history, and use in former times, and at the present day." Lantern illustrations and specimens. Walter Crane, A.R.W.S., in the chair. 8 p.m.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY. Prof. Godman, M.I.C.E., M.I.M.E., on "Steel Construction in Buildings." 6.30 p.m.

LIVERPOOL ARCHITECTURAL SOCIETY. Prof. Simpson on "Some Burgundian Churches."

ROYAL INSTITUTE OF BRITISH ARCHITECTS. J. M. Brydon, F.R.I.B.A., and F. J. Burgoyne, on "Municipal and Public Libraries." 8 p.m.

SANITARY INSTITUTE. Introductory Lecture to Sanitary Officers, by Prof. W. H. Corfield, M.A., M.D. 8 p.m.

VICTORIA INSTITUTE. Prof. Lionel S. Beale, M.D., F.R.S., on "The Nature of Life." 4.30 p.m.

## Tuesday, February 21.

SOCIETY OF DESIGNERS. Members meeting at 7.30.

SOCIETY OF ARTS. Meeting of the Applied Arts Section at 8 p.m.

## Wednesday, February 22.

SOCIETY OF ARTS.—Philip Dawson on "Electric Traction and its Application to Railway Work."

## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

BANBURY.—For reconstructing the public swimming-baths, for the Town Council. Mr. N. H. Dawson, C.E., Town Hall, Banbury:—  
J. S. Kimberley ... £1,478 Orchard and Son, Banbury\* ... £1,393

\*Accepted.

BISHOP'S STORTFORD.—For the erection of a pair of houses, for Mr. Thos. Swatheridge. Alfred Brett, architect. Bishop's Stortford:—  
J. H. Staines ... £500 0 0 F. Cannon ... £439 10

Chas. Martin ... 457 11 6 D. Robinson ... 429 0 0  
CARDIFF.—For extensions to electric lighting station, Eldon-road, for the Corporation. Mr. W. Harper, M.Inst. C.E. Borough Engineer, Town Hall, Cardiff. Quantities by the Engineer:—  
Jones Bros. ... £4,924 T. Maggs ... £4,442

J. Allan ... 4,880 Rees and Thomas ... 4,363  
W. H. Ingleson ... 4,879 E. Turner and Sons ... 4,288

Thomas and Co. ... 4,700 Latley and Co. ... 4,287  
W. Symonds and Co. ... 4,640 J. L. Chubb and Co.\* ... 4,084

[All of Cardiff.]

\*Accepted.

CHELTEMHAM.—For the reconstruction of No. 3, reservoir, Hewletts, for the Corporation. Mr. Joseph Hall, Borough Surveyor, Municipal Offices, Cheltenham:—  
C. H. Cannon and Son £2,690 C. Malvern and Sons, W. L. Meredith ... 2,435 Cheltenham\* ... £1,834

Collins and Godfrey ... 1,993  
CHERTSEY.—For the erection of four villas for Messrs. Paine and Brettell. Mr. Charles Welch, architect:—  
Watson ... £3,564 0 Martin ... £3,175

Grey ... 3,191 0 Hunt ... 2,894 0  
Greenfield ... 3,177 19 Buckeridge ... 2,879 0

FAREHAM.—For the extension of County Asylum, Fareham, Hants. Mr. W. J. Taylor, County Surveyor, architect:—  
C. Ford ... £16,396 J. H. Cooke ... £15,200

Stephens, Bastow and ... 15,966 Cooke and Co. ... 14,830  
Co. ... 15,966 Jenkins and Son, Light and Son ... 15,793 Bournemouth\* ... 14,344

\*Accepted.

LONDON.—For No. 1a and No. 1, Belgrave-square, S.W., for Mr. Wm. Tebb. Mr. Philip A. Todd, architect:—

	New House and Alterations to Stables.	Alterations and Decorative Works, and Alterations to Stables.	Total.
	£ s. d.	£ s. d.	£ s. d.
T. Stevens	6,378 0 0	4,860 0 0	11,238 0 0
T. Gregory & Co.	5,987 0 0	5,097 0 0	11,084 0 0
W. H. Lascelles & Co.	6,111 0 0	4,723 0 0	10,834 0 0
J. Cannon	6,053 6 9	4,601 11 5	10,654 18 2
W. H. T. Kelland	5,995 0 0	4,234 0 0	10,229 0 0
Spiers and Son	5,795 0 0	4,173 0 0	9,968 0 0
Edwards & Medway	5,479 0 0	4,171 0 0	9,650 0 0
R. S. Buckeridge	5,225 0 0	3,750 0 0	8,975 0 0

LONDON.—For the construction of pipe sewers, for the Ealing Urban District Council. Mr. C. Jones, C.E., Public-buildings, Ealing, W.:—  
F. Adams ... £6,972 0 0 C. Ford ... £6,480 0 0

J. Macklin ... 6,890 0 0 R. Ballard ... 6,374 0 0  
Nowell & Co. ... 6,677 3 4 Neave & Son ... 6,221 0 0

Wilkinson ... 6,000 0 0 H. M. Morecroft, Wimpey & Co. ... 6,543 0 0 Acton Green\* ... 5,996 0 0

\*Accepted.

LONDON.—For the erection of cottages on Plot 2 of the Brook-street, Limehouse, scheme, for the London County Council:—  
W. Downs ... £5,980 J. Brown, Son, and F. & F. J. Wood ... 5,250 Blomfield ... £5,029

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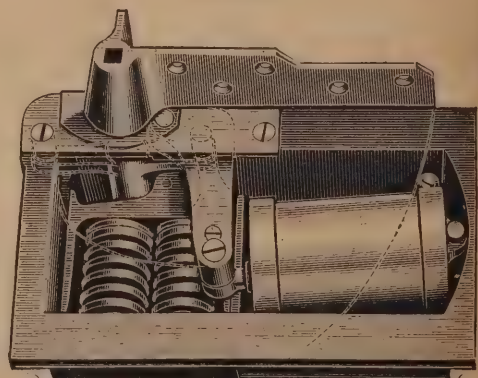
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LONDON.—For alterations and additions to the "Woodberry Hotel," South Tottenham. Messrs. Eadie and Meyers, architects:—  
Beer and Gash ... £6,850  
S. Goodall ... 6,293  
F. Valler ... 6,051  
W. Shurmer ... 5,997  
Patman & Fothering-ham ... 5,928

LONDON.—For erection of factory at Stour-road, Old Ford. Messrs. Mark W. King and Sons, architects:—  
E. Lawrence and Son £13,335  
J. Chessman and Son 12,899  
H. L. Holloway ... 12,743  
Perry and Co. ... 12,650  
Ashby and Horner ... 12,572

LONDON.—For the erection of shops, stores, &c., John-street and Foyle-road. Mr. R. H. M'Elwee, architect, 9, Carlisle-road, Londonderry:—  
Jas. Fulton, Fountain-street ... £1,275

LONDON.—For pulling down and rebuilding the "British Queen," Old Kent-road:—  
W. Shurmer ... £2,352  
W. Rowe ... 2,253  
G. Barker ... 2,060

LONDON.—For the erection of a Public Reading Room at Kensal Rise, N.W. Messrs. Done, Hunter & Co., architects and surveyors, Cricklewood, N.W.:—  
H. C. Clifton ... £1,425  
Marchand & Hirst ... 1,415  
Godson & Sons ... 1,330  
J. Christie ... 1,320  
General Builders ... 1,150

J. Anley and Son ... £5,790  
W. H. Lascelles and Co. ... 5,785  
Deering and Son ... 5,735  
Edwards and Medway ... 5,677

LONDON.—For re-building "Feathers" Restaurant, Great Chapel-street, Westminster. Messrs. Shoebridge and Rising, architects:—

Leslie and Co. Limited ... £10,877  
E. Mark ... 10,847  
Adamson and Son ... 10,759  
Ashby and Horner ... 10,750  
Kilby and Gayford ... 10,726  
J. Carmichael ... 10,675  
W. Shurmer ... 10,650  
O. Deering and Son ... 10,435  
Lascelles and Co. ... 10,300  
Anley and Son ... 10,080  
Edwards and Medway ... 9,997

REDHILL.—For the superstructure of business premises for Messrs. Nicol and Son, at corner of High-street and Station-road on the Market Hall Estate. Mr. A. Broad, architect, 22, George-street, Croydon. Quantities by the architect:—

Pink and Moon ... £5,568  
T. Bushby and Son ... 5,335  
J. Longley and Co. ... 5,260  
C. Nightingale & Sons ... 5,230  
C. Parsons ... 5,170  
S. J. Jerrard and Sons ... 5,135  
Buckland and Waters ... 5,100  
W. H. Lorden and Sons ... 5,093

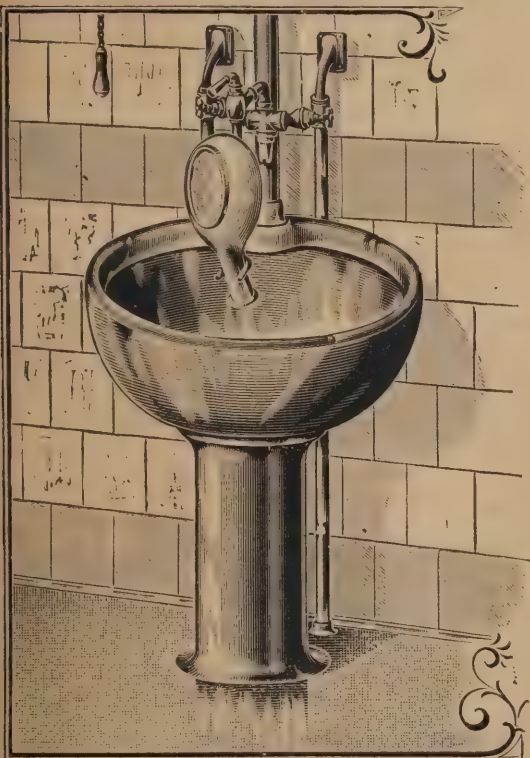
Terra Cotta Dressings.  
Gibbs and Canning ... £507 0  
\*Accepted.  
ROGERSTONE (Near Newport).—For the erection of fourteen houses, Rogerstone, near Newport, Mon., for Mr.

Darcus, Swallow and Creighton, architects and surveyors, Steam Packet Chambers, Dock-street, Newport, Mon.:—

Estimate		Estimate	
A		B	
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£	s. d.	£	s. d.

W. C. Forward, Newport	4,900	0	0	5,085	9	4
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Newman & James, Cardiff	4,865	12	0	4,779	12	0
D. Jones, Newport	4,965	0	0	4,781	12	0
D. Lewis, Llanhilleth	4,500	0	0	4,769	0	0
W. Sier, Newport	4,500	0	0	4,700	0	0
Thomas and Son, Newport	4,500	0	0	4,680	0	0
C. H. Reed, do.	4,450	0	0	4,250	0	0
A. S. Morgan & Co., do.	4,450	0	0	4,750	0	0
D. J. Davies, do.	4,436	6	0	4,570	0	0
A. Lawson and Co. do.	4,390	0	0	4,310	0	0
D. Jenkins do.	4,180	9	9	4,343	0	0
J. Moore do.	4,176	13	9	4,333	14	0
Banbury do.	3,795	0	0	3,950	0	0
Baglow do.	3,780	0	0	3,850	0	0
J. Dartridge do.	3,700	0	0	3,950	0	0
J. Leadbeter do.	3,650	0	0	3,865	0	0
G. Martin and Son do.	3,577	0	0	3,695	0	0
Pritchard, Pontymister	3,549	0	0	3,669	0	0
J. Lewis, do.	3,557	0	0	3,297	0	0
*Smith Bros., Newport, Mon.	3,070	0	0	3,220	0	0
*Accepted.						

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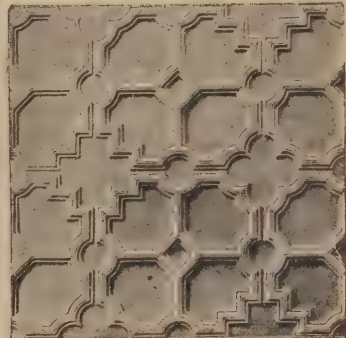
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**WEYBRIDGE.**—For the erection of house and laundry, for Mr. J. W. Brooker. Mr. W. Mann, architect, Weybridge:—  
 Horsell ... .. £2,312 Lucas ... .. £2,050  
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The Guardians are desirous of receiving TENDERS for the ERECTION of a NEW INFIRMARY at the Workhouse, Arclid, near Sandbach.

Plans and specifications can be seen at the Office of the Master of the Workhouse at Arclid.

Bills of quantities can be obtained from the Architect, Mr. ALFRED PRICE, Elworth, Sandbach, on depositing One Guinea, which amount will be returned on receipt of a bona-fide Tender.

Sealed Tenders must reach the undersigned not later than WEDNESDAY, MARCH 1st next, endorsed "Tender for New Infirmary."

The Guardians do not bind themselves to accept the lowest or any Tender.

Security will be required for the due performance of the contract.

By order,

HARRY FERRAND,

Clerk to the Guardians.

Union Offices,  
Sandbach,

February 8th, 1899.

### TO PAINTERS and DECORATORS.

The Trustees of the Grand Stand, Ascot, invite TENDERS for PAINTING and DECORATING the GRAND STAND and other buildings, at Ascot, Berks.

Quantities, and all information, may be obtained upon application to Mr. WILLIAM MENZIES, F.S.I., Englefield Green, Surrey.

The Trustees of the Grand Stand do not bind themselves to accept the lowest or any Tender.

January 31st, 1899.

### COUNTY COUNCIL of NOTTINGHAM-SHIRE. HIGHWAYS, BRIDGES, AND COUNTY BUILDINGS COMMITTEE.

The above Council are desirous of receiving TENDERS for the supply and delivery of GRANITE, SLAG, and LIMESTONE to Railway Stations and Wharves in Nottingham, on or before SEPTEMBER 29th, 1899.

The lowest or any Tender not necessarily accepted. Full information may be obtained from the undersigned on or after FEBRUARY 17th, 1899.

Tenders to be returned not later than first post on FEBRUARY 27th, 1899, to

E. PUENELL HOOLEY,  
Shire Hall, Nottingham.

### COUNTY BOROUGH of SOUTHAMPTON. TO BUILDERS AND CONTRACTORS. ARTISANS' DWELLINGS.

The Council are prepared to receive TENDERS for the ERECTION of a block of ARTISANS' DWELLINGS on the area recently cleared by them under the Housing of the Working Classes Act, 1890, with frontages to Sannel-street and Pepper-alley.

Bills of quantities and form of Tender may be obtained at the Municipal Offices, Southampton, between the hours of TEN a.m. and FOUR p.m. (Saturdays excepted), upon payment of a deposit of a £5 Bank of England Note with the Borough Accountant (which will be refunded upon receipt of a bona-fide Tender).

Copies of the drawings and specification may be seen at the Municipal Offices, 18, French-street, during the same hours.

Sealed tenders on the form supplied, accompanied by fully priced bills of quantities, to be sent to me not later than NOON on MONDAY, FEBRUARY 20th, next, endorsed "Tender for Artisans' Dwellings."

The contractor will be required to pay not less than the minimum standard rate of wages for the time being in each branch of the trade at the date of the contract.

The Council do not bind themselves to accept the lowest or any Tender, and the Contractor, whose Tender is accepted, shall enter into a formal agreement, under seal, with sufficient securities for the due fulfilment of the Contract.

By order,

GEORGE B. NALDER,

Town Clerk.

Municipal Offices,  
Southampton,

February 2nd, 1899.

### TO BUILDERS.

The Commissioners of Her Majesty's Works, &c., are prepared to receive TENDERS for the EXECUTION of ORDINARY WORKS and REPAIRS to BUILDINGS in the London District for Three Years, from April 1st, 1899.

The printed schedule, with form of Tender, may be obtained at Her Majesty's Office of Works, Storey's Gate, Westminster, between the hours of ELEVEN a.m. and FIVE p.m. upon payment of One Pound.

The sums so paid will be returned to those persons who send in Tenders in conformity with the conditions specified.

The Tenders are to be delivered at Her Majesty's Office of Works before TWELVE o'clock (noon) on SATURDAY, FEBRUARY 25th.

The Commissioners do not bind themselves to accept the lowest or any Tender.

REGINALD B. BRETT,

Secretary.

H.M. Office of Works,  
Storey's Gate,  
London, S.W.,

February 1st, 1899.

## COMPETITIONS.

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The Leeds Corporation offer premiums of £150, £100, and £50, for first, second, and third best DESIGNS respectively, for MARKET HALL and MARKET SHOPS on a site of 4560 square yards in area, which forms part of the present Kirkgate Market.

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Designs must be sent in to the Town Clerk, Town Hall, Leeds, not later than JUNE 1st.

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Clerk to the Guardians.

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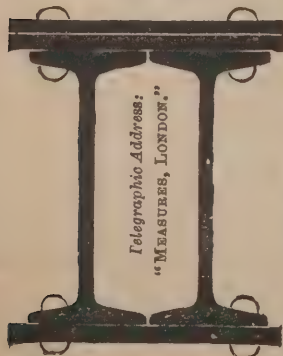
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## STRAINS IN BEAMS.

BY CHARLES W. TOMLINSON.

IT is proposed within the limits of a short article to show the method of obtaining the amount of stress produced by a given load in such a manner as to simplify somewhat the formulæ given in the text-books. In the first place, a few preliminary definitions are necessary.

**Load or Weight.**—The total amount of weight carried by a beam.

**Safe Load.**—The amount of weight the said beam is expected to actually carry when in position, sometimes called the working load.

**Breaking Weight.**—The amount of load that is just sufficient to produce fracture in a beam.

**Factor of Safety.**—The ratio or proportion the breaking load bears to the safe load. This is usually, but not always, taken at four, that is, the beam is not expected to be loaded with more than one-quarter of the weight which would actually break it.

**Distributed Load.**—The weight distributed along the whole length of a beam.

**Concentrated Load.**—The said load when concentrated at any point in the length of a beam. A concentrated load is usually taken as producing double the amount of stress produced by a distributed load of the same weight. Thus a concentrated load can easily be reduced to its equivalent as a distributed load and vice versa.

**Span.**—The clear span is the distance between the supports. The effective span is from the centre of gravity of the supported part at one end, to a similar point at the other

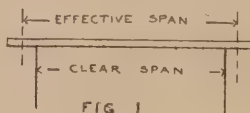


FIG 1

end. (See Fig. 1.) In questions set on this subject the effective span is usually implied and understood.

The first problem which requires any calculation is to ascertain how much of the weight is transmitted to each point of support. Should the load be an evenly distributed one, or concentrated in the centre, it is scarcely necessary to say that just one-half is borne by each abutment. When the weight is not in the centre, the portion transmitted to each abutment is in direct proportion to the distance

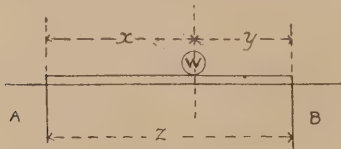


FIG 2

of the load from the other abutment, and is found by the following method. (Fig. 2.)

$$\text{Portion of load borne at A} = \frac{w \times y}{l}$$

$$\text{Do. } B = \frac{w \times x}{l}$$

The two answers added together give, of course, the total weight.

Should there be more than one weight, each must be worked out separately, and the two added together to obtain the total weight carried at each support.

Should there be a distributed load over a small part of the beam, as Fig. 3, this would be worked out as a concentrated load of five tons, exactly in the centre of the weighted portion,



FIG 3

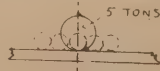


FIG 4

as Fig. 4. These results are termed the reactions of the abutments.

The next thing is to find the amount of stress produced, or bending moment as it is

termed, at any point in the beam. This is really a problem in applied mechanics. An

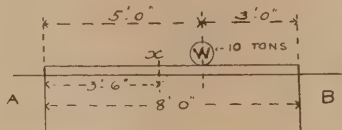


FIG 5

example (Fig. 5) will best show the method.

The amount of stress is wanted at point X, distant 3' 6" from A.

(I.) Find reactions—

$$\text{At A} = 10 \times 3 \div 8 = 3.75 \text{ tons.}$$

$$\text{At B} = 10 \times 5 \div 8 = 6.25 \text{ tons.}$$

(II.) Stress at X =  $R_a$  (or reaction at A)  $\times$  distance to the point required; thus  $3.75 \times 3.5 = 13.125$  tons.

This answer may be proved by working from the other end (B) to the same point. It will be noticed that the whole problem hinges on the theory of the lever,  $R_b \times$  distance from B to X (length of leverage) and in this case, the  $W \times$  distance from W to X, the latter being a negative. Thus  $R_b \times 4.5 \text{ ft.} - W \times 1.5 \text{ ft.}$ , or  $6.25 \times 4.5 - 10 \times 1.5 = 28.125 - 15 = 13.125$  tons.

It will doubtless be observed that it is the reaction which produces the stress, work from which end you will.

This is the rule. When there are a number of weights, or forces, on the beam, multiply each force on one side of the point selected by its distance from that point, and add together all these moments, first those pushing up (reactions), second, those pushing down (weights). The former are positive and the latter negative, and the latter must be subtracted from the former. The remainder will be the amount of stress at the given point.

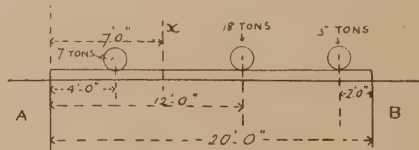


FIG 6

To conclude, a more elaborate example will be shown. (Fig. 6.)

In a beam loaded as in Fig. 6, the amount of stress is wanted at X, a point 7' 0" from A.

(I.) Find re-actions:

$$\text{At A: } \frac{7 \times 16}{20} + \frac{8 \times 18}{20} + \frac{5 \times 2}{20} = \frac{266}{20} = 13.3 \text{ tons.}$$

$$\text{At B: } \frac{4 \times 7}{20} + \frac{12 \times 18}{20} + \frac{18 \times 5}{20} = \frac{336}{20} = 16.7 \text{ tons.}$$

(II.) Find stress at X:

$$13.3 \times 7 - 7 \times 3 = 93.1 - 21 = 72.1 \text{ tons.}$$

This may be proved by working from B.

$$16.7 \times 13.0 - (18 \times 5 + 5 \times 11) = 217.1 - (90 + 55) = 217.1 - 145 = 72.1 \text{ tons.}$$

**Mr. Demish H. Barry, F.S.I.**, has been appointed by the Benchers as Surveyor to the Honourable Society of Lincoln's Inn.

**Dorchester Sewerage Scheme.**—The Town Council of Dorchester have been informed by the borough surveyor that he has completed the plans of the new sewerage scheme, and has forwarded them to Mr. Lomax, the Council's consulting engineer.

**Sheffield Improvements.**—The Improvement Committee of the Sheffield Corporation propose to make application to the Local Government Board for sanction to borrow £4800 for street widening improvements, the total cost of which will be about £8500.

**At Heaton Norris** an inquiry was held on Thursday by the Local Government Board, touching the Council's application to borrow £6407 for works of sewage and sewage disposal and other sums for private street works. The scheme is to include the sewerage of Burnage, and the provision of precipitation work, &c. The opposition was mainly against the erection of a destructor, which it appeared was not at present intended.

## THE FORMATION OF SOILS.

BY GUY CADOGAN ROTHERY.

MODERN geologists mostly accept the theory that the earth was at one time either wholly or partially molten, the outer surface being hardened by the cooling effects of radiation and of atmospheric pressure into a crust—the igneous rocks. These primitive rocks form one important group; though as we see them they have undergone metamorphism, they are very uniform in composition and are rich in the minerals, aluminium, silicon, carbon, calcium, magnesium, chlorine, phosphorus, potassium, and sodium. A sub-group of the igneous rocks is due to volcanic action, a manifestation of heat energy from the interior, or from below the immediate hard crust of the earth. These volcanic rocks have been either belched forth in a molten state, as red hot scoria, or come bubbling up in vast seething pools or lakes, and flooding the country cooled down in dense masses. The volcanic rocks have much in common with the plutonic igneous rocks, but are somewhat less uniform in composition, and are often found in well marked strata, due to successive layers of molten matter cooling down, and sometimes receiving a layer of transported soil, or volcanic ashes, before another eruption had sent forth a fresh layer of liquid lava.

The second great group of rocks is the sedimentary, due to deposition of matter by water. Some of the sedimentary rocks are remarkably uniform for great depths—this is especially so with regard to the chalk and limestone—others are deposited in well-marked strata. The sedimentary rocks are, of course, derived from matter eroded from the primitive igneous rocks, and deposited by water. Many of them, therefore, contain precisely the same elements, but owing to the mechanical selective agency of water, and the chemical action of the atmosphere as well as the rain water, sedimentary rocks differ widely both as regards chemical and physical characteristics. Some sedimentary rocks have undergone considerable transformation by the action of subterranean heat or volcanic eruption, the rocks being partly melted, and their chemical and physical peculiarities more or less considerably modified. Metamorphism, or rock transformation is, indeed, a universal and continuous process. It may be brought about by various agencies: internal heat, volcanic action, the atmosphere, the pressure due to the enormous weight of superincumbent masses of rock, the mere contact of two different strata, molecular attraction; electric and magnetic phenomena being no doubt connected with the last two phases.

**NATURAL HEAT.**—Whether the interior of the earth is in a molten condition, or is hollow filled with gases, and a molten film clings to the inner surface of the earth's crust, the fact that there is an intense internal heat cannot be doubted. We have evidence of this in mining operations, for we find the deeper we go the greater becomes the heat. Sir Archibald Geikie says, "according to present knowledge the average rate of increase of the temperature amounts to one degree Fahrenheit for every 50 or 60 ft. descent, and this rise is found whether the boring be made at the sea level or on elevated ground." But there is some difference in the increase in various strata. Professor Everett, in *Nature* for Oct., 1881, states that the greatest increase yet observed was in shale in a boring near Glasgow 450 ft. deep, the ratio being one degree in 30 ft.; the lowest rate was observed in a mine in Bohemia, the rock being quartz, the boring 1900 ft. deep, and the ratio only one degree in 135 ft. Mr. Josiah Thomas found one degree in 98 ft. in a mine at Dolcoath. Possibly, at very great depths, the ratio of increase may be higher. At all events, this internal heat is enough to melt rock, the igneous rocks break through strata in molten masses, and, in doing so, change the nature of the rock at the rupture, and also the strata above and below. These intrusive igneous rocks are very curious, and they are powerful agents of metamorphism. Granite is produced by heat and enormous pressure, but



without complete melting, so that granites must have originated at very great depths, with probably an immense number of strata above them. These granites must have been upheaved, and the covering strata worn away. Volcanic action is not so powerful a metamorphising agent, at least its immediate influence is not so widely felt, for volcanic lava flows only change the surface of the rocks over which they lie, and to comparatively slight depths. On the other hand, volcanic action, whether violent or slow and continuous, causes upheavals and subsidences in the earth's crust, thus exposing rock surfaces to the action of air and water, or depressing others below the sea level, and often breaking horizontal strata, leaving great fissures, and heaping them up at great angles.

Atmospheric metamorphism is mainly brought about by disintegration and the quickening of chemical, molecular, and electrical action. These changes are very great. Delesse says "the study of metamorphism of clayey rocks has shown that when crystallisation is developed, felspar, quartz, and micas may be formed. Now, gneiss is the resultant of the association of these three metals, and so its metamorphic origin is shown to be probable." For a gain of knowledge in one direction enables us to apply it in another. The elements and the more complex minerals are diffused more or less evenly throughout the most elementary rocks, but the action of heat, molecular attraction, etc., tends to draw them together; thus we have in mineral veins sure sign of high metamorphism. Metals are usually found in marshes, tertiary, secondary, and primary rocks in a non-crystalline form, but in amorphous layers. These metals undergo change, and we find in semi-crystallised veins, changes are brought about by heat, general metamorphism, and pressure. Under pressure the metaliferous veins are strangulated, and form ovals or appear in the form of ganglins. The strangulation may go still further, and the metal veins be separated into independent lenticular forms. A still more interesting and instructive change is the transformation of the nature of the metal. Iron, for instance, will appear in one vein quite transformed at different points, being for some length of a sparry or calcareous description (siderite), but will tail off to the right into a protoxide, and to the left of the siderite into an oxide. Some veins are anhydrous, others hydrated, and in this latter case the metals have a tendency to disperse again, transforming the character of adjacent strata and the matrix in which they are imbedded. Metaliferous veins when exposed to the atmosphere, or through water reaching them by way of flaws and fissures, may completely disappear, dispersing in the rocks in the form of oxides and hydrated metals, in which form they may be dissolved by water and give rise to mineral springs.

Mr. E. W. Fox held that veins were due to the filling up of crevices by the electro-magnetic action on minerals. He says: "As mineral veins exist in rocks abounding with organic remains, which are to be seen even in the cheeks and walls of the veins, no doubt can be reasonably entertained of their having been originally cracks, fissures, or openings in the strata in which mineral substances have been deposited." His theory, which certainly seems to be borne out by observations, was that these crevices were very deep, and contained more or less saline water, which, owing to differences of temperature, was kept continually circulating, thus inducing and intensifying chemico-electro-magnetic action in the rocks, attracting the metals which were deposited in the crevices. There is much to be said in favour of this subterranean electric force as an agent in this phase of metamorphism. Instances of curious separation and depositing of metals have been recorded which tend to show that electro-magnetic agencies are at work.

Coal, as we know, is metamorphosed vegetable matter. It has been held that anthracite is merely metamorphosed coal, the change being brought about by combined heat and pressure, which caused the volatile and tarry matter to disperse. Sir Charles Lyell has shown that in America the volatile matters in

the carboniferous beds disappear gradually the nearer the mountains are approached. Anthracite is metamorphosed into graphite, in which form we find all traces of vegetable texture to have disappeared, the carbon appearing in a crystalline form. During these changes the volatile matters may be merely displaced, collecting in caverns, fissures in porous strata in the form of "natural gases," or mineral oils, or they may be split up and dispersed in more elemental forms. We might prolong this section indefinitely by tracing the changes of certain strata into granites, the disintegration of granites into sands and clays and the transformation of sands and sandstones, and clays into slate. The important matter is to bear in mind that metamorphism is a universal and continuous agency for transforming rocks and soils, causing endless combinations which may prove of great moment to man and his surroundings.

(To be continued.)

## THE CEMENT FAMINE.

FOR the past few months there has been a striking increase in the activity of the cement industry. Some four or five years previous to last June this trade had been in a very depressed state, some of the firms engaged in it even working at a loss. Prior to June the cost of production at the makers' works varied from 21s. 6d. to 22s. per ton. At the close of 1898 cement was fetching on the average 30s. per ton, and in some instances as much as 32s. 6d. There has, however, been an increase of 10 per cent. in the cost of manufacture owing to the rise in the price of coal and coke. This welcome revival in the works on the Thames, the Medway, the Tyne, in the Midlands, and other centres of the industry is due to the great demand for cement consequent on the activity in the building trade, the construction of new docks, harbours, drainage works, underground railways, and engineering works generally.

The present demand for cement is unprecedented, and nearly all of it produced in England is consumed by our own requirements. The German manufacturers have taken the opportunity to step in and practically secure the great bulk of the foreign trade.

It has been stated that the Works Department of the London County Council, failing to obtain Portland cement from English makers, have sent to Belgian makers for their cement, to be paid for by London ratepayers. Two cargoes of 300 tons each were received; and when the first cargo arrived a test was taken by the Council's engineers, who found it to be only half the strength of English cement; that it could not be returned to the makers, as it would have been if such stuff had been sent by English makers, and that a larger quantity of it had therefore to be used to make up for the deficiency in strength; and that the building of two large blocks of dwellings at Boundary Street, Shoreditch, was delayed quite two months for this cement, at great expense to the ratepayers. In reference to these statements, the Clerk to the Council wrote to "The Daily Mail" stating that in consequence of the great difficulty experienced in obtaining cement from English manufacturers, owing presumably to the great demand for cement required for large contracts in Egypt and elsewhere, it was found necessary in September last, in order to prevent delay in the erection of artisans' dwellings in course of construction by the Council at Boundary Street, Shoreditch, to obtain a consignment of cement from Belgium. No delay had been caused in the erection of the dwellings by the non-supply of cement, and only one order for that material has been placed in Belgium.

Mr. L. Sommerfeld, of 2, Fowkes Buildings, Great Tower Street, who supplied the Belgian cement to the County Council, states that the cement was sold to the County Council with a guarantee that it would stand a tensile strain of not less than 400lb. per square inch after seven days' immersion in water. The Council's engineers reported that the first consignment

showed a breaking weight (or tensile strain) of only 273lb. Mr. Sommerfeld was not prepared to admit the accuracy of the test made by the Council's engineers, however, and a second test was made by them. This gave a breaking weight of 334lb. Still another test was made by them, which gave a breaking weight of 275lb. He still declined to accept these tests, and it was agreed that the cement should be referred to Messrs. Henry Faija and Co., of 41, Old Queen Street, Westminster, S.W., who reported that it bore a tensile strain of 482lb. per square inch, a strain considerably above the guarantee. To further satisfy himself he sent on his own account a sample of the cement to Messrs. David Kirkaldy and Son, of 99, Southwark Street, S.E., and their report also showed that the breaking weight of the cement was 414lb., or considerably over what was guaranteed.

## Masters and Men.

**The Aberdeen Joiners** who went out on strike on the 1st inst. returned to work on the 7th. The men demanded an immediate rise of a halfpenny per hour, and the masters have agreed to give a farthing increase in April, and another farthing five months afterwards.

**The Plasterers' Dispute.**—The ballot taken by the Plasterers' Union on the question whether foremen should be compelled to become members of the Union has resulted in a decision against the proposal by 1552 votes to 729. This removes the original cause of dispute, and the question now is whether the masters will insist upon the remaining points of their ultimatum. If they do, there will necessarily be an extensive lock-out. But as neither side seems to desire a fight just now, it seems likely that a compromise will be arrived at. At the works of the Veronese Company—one of the three firms against whom the strike was directed—work was resumed on Monday morning on the old lines.

**Bath Master Builders.**—The annual dinner of the Bath Master Builders' Association took place on the 7th, the chair being occupied by Mr. Howard, the president. Responding to the toast of the National Association, Mr. A. Krauss referred to the demands made by the Plasterers' Society, and said they were unbearable and cruel. The National Federation had given notice to the Plasterers' Society to submit to their rules. If they did not give a satisfactory answer by next Wednesday, he believed there was some danger of a lock-out all over the country, not only in the plastering trade, but in the whole of the building trade. The masters did not wish for strikes, but they could not stand it any longer. Something must be done for the welfare of the country, and to stop these obnoxious clauses.

**Trade Union Federation.**—The Parliamentary Committee of the Trade Union Congress has decided to resolve itself into a provisional committee for the formation of the new Trade Union Federation decided upon by the congress at Manchester last month. The committee elected the following officers: Chairman, Mr. Davis; vice-chairman, Mr. Wilkie; treasurer, Mr. Inskip; secretary, Mr. S. Woods, M.P.; trustees, Messrs. C. W. Bowerman, F. Chandler, and W. Thorn. The rules were carefully gone into and approved, and it was decided to circularise every trade union in the country inviting affiliation with the new federation. The committee will meet again in May, to make arrangements for placing the Federation on a permanent basis. Not all the Unions will seek affiliation, but it is tolerably certain that, amongst others, the Amalgamated Society of Engineers and the Carpenters' and Joiners' Society will do so.

**An Eight Hours' Working Day and its Results.**—At the eighth annual festival of the Thames Ironworks Federated Clubs, which was held at the Town Hall, Canning Town, on



February 6th, Mr. A. F. Hills gave some remarkable details, showing that in the case of his firm, at any rate, the eight hours' day had proved an unqualified success. In 1892 it was decided that everybody should have an interest in the work that he did, by means of a good-fellowship dividend, which should depend upon the realised profits of the firm. In 1892 the amount distributed was £4804, and in 1898 it was £15,890. During the seven years 1892-8 it amounted to £42,519. This was in addition to the highest wages in the trade in this or any other country for an eight hours' day. In 1894 Mr. Hills decided to introduce an eight hours' day. In seven years there had been an increase of wages paid of 145 per cent., which was a very remarkable testimony to the working of the eight hours' day, and showed that the work done was becoming more profitable. He had taken out the net cash per ton of five vessels built for the Government before the eight hour day had been introduced, and the cost for two Japanese battleships and a cruiser for the British Government after, and he found that the latter were built at a cost per ton of seventeen or eighteen per cent. less than the former. And during the past two months the Thames Ironworks had, in open competition, secured work at the price which was the lowest put in by any firm. So greatly had their business increased that they had taken a yard over the river, to which they intended to transfer the eight hours' flag, which had brought nothing but blessing on them since it had been adopted. It had proved good for the men, good for the work, and good for the shareholders.

**Nottingham Master Builders.**—The annual dinner of the Nottingham Master Builders' Association took place last Friday. Mr. Enoch Hind presided. The speeches dealt largely with the relations between employers and employed. The Chairman said that during the past year the membership of the Association had increased by 31. They had had 140 meetings during the twelve months, and the members on the books to-day were 99. There had been some differences with the architects and with the men during the year. At its beginning there was a strike with the labourers, and, of course, the old song again—the bricklayers were in sympathy with them. There was only one thing—the Association had to give way to it because work was good; but he was sure that so long as they remained banded together they would go on progressing.—Mr. George Fish observed that, although the Association had had several difficulties to contend with, they had been amicably overcome. They had met the bricklayers on several occasions, and the latter had met the masters in a fair spirit, and it was sincerely hoped that the plasterers' matter would eventually be settled without any deleterious issue.—Mr. Thomas Greenwood observed that the strength of the labour organisations was well known to all of them. If that strength were used for just and righteous purposes, for the improvement of the conditions of the working classes, without injustice to the rest of the community, they would wish them success. But when they saw those combinations not satisfied with their rights, and striving to injure the community in general, it was absolutely necessary for the welfare of the country that those who had the capital should combine. He referred more particularly to the advisability of unity in consideration of the action being taken in respect to the limitation of apprentices. The result would be they would be unable to get workmen, and the nation would suffer consequently.—Alderman Bowen, speaking of the work of the National Federation and the Midland Federation, over which he presided, remarked that they had not felt it to be their duty to carry on aggressive work against trade societies; they had aimed at greater things, such as obtaining proper forms of contract and better provisions generally. To protect their interests the Master Builders' Associations must take united action, and co-operate heartily one with another.

## Builders' Notes.

**Jarrah Blocks.**—The Poplar Board of Works have accepted the Tender of the Jarrahdale Jarrah Forests and Railways Ltd., for their contract for 1,300,000 Jarrah Blocks.

**Ventilators for Public Halls.**—In the erection of the Girls' Club Hall, Ferguslie, Paisley, in connection with the works of Messrs. J. and P. Coats Limited (architect, Mr. T. G. Abercrombie, of Paisley), great attention has been paid to the efficiency of the Ventilation, "Cousland's Improved Climax" Patent Continuous Exhaust Ventilators being used, supplied by the Climax Ventilating and Heating Company, 93, Hope Street, Glasgow.

**A Scaffolding Accident,** resulting in two deaths, occurred on Wednesday, in Lawnmarket, Edinburgh. Three slaters were engaged in repairing a chimney head, when the scaffolding slipped. Two of the men were precipitated into a court, 60ft. or 70ft. below, one being killed outright, while the second died whilst being conveyed to the Infirmary. The third man had a marvellous escape, falling on to a ledge a few feet below the scaffolding, and sustaining only slight injuries. The accident is believed to be due to a large copestone falling upon a "needle" used in supporting the scaffold.

**New Vauxhall Bridge.**—Messrs. Francis and Co., cement merchants and manufacturers, of Cliffe, Kent, and Vauxhall, have sought to recover the sum of £40,000 from the London County Council for the loss of business, stock, &c., by reason of the compulsory seizure of their premises, the Nine Elms Cement Wharf, for the New Vauxhall Bridge. The claimants estimated their annual profits at £8800 per annum, and claimed for three years' loss of trade. The special jury at the Sheriff's Court, Red Lion Square, assessed the damages at £24,126, being £13,563 for the leasehold premises, £9643 for damages to business, and £920 for fixtures, &c. Judgment was given accordingly, with costs.

**Christ Church, Birmingham,** was the scene of a terrible accident last week, resulting in one man being killed and six other men severely injured. The church is being demolished, and the work of removing the huge pointed steeple had been going on for several days past; a number of workmen were engaged on Wednesday in unroofing the edifice, when, about two o'clock in the afternoon, one of the main timber girders, weighing about 3 tons, suddenly gave way, and fell into the body of the building, crashing through the ceiling into the nave, a distance of 35ft. The force with which the beam descended was sufficient to break through the floor of the church into the catacombs underneath.

**Workmen's Compensation.**—Messrs. Waring and Gillow Ltd. write:—In view of the numerous discussions that have taken place as to the effect of the new Act on large employers of labour, it may be of interest to give our experience for the six months from July 1st to December 31st, 1898. The premium asked by the insurance companies was £2500 per annum. We considered this excessive, and decided to take our own risk. In the six months ending December 31st, although the accidents were more numerous than in any previous half-year, we only paid £93 as compensation, and have therefore £2407, plus interest, in hand for the following six months. We may mention that all the accidents occurred during the summer months, and that the worst one happened on July 1st, the day the Act came in force. Although we are employing a larger number of workmen than usual, we have not had a single claim since October.

**Memorial Hospital at Bulawayo.**—A correspondent of "South Africa" gives

some particulars of the progress of the work of extending the front of the Memorial Hospital at Bulawayo. The outside, it appears, is now practically completed. The rooms are bright, airy, and well ventilated, the ventilation being by means of Boyle's ventilating air pumps. Along the whole of the front under the roof and above the ceiling a main ventilating shaft will run on the top of which—on the roof—six of the patent air pumps are to be placed, three on the old, and three on the new front, respectively. From those rooms that are not directly ventilated by the main shaft a connecting shaft will be run to the former. Another special feature introduced by Messrs. Benzie and Doble in the ventilation line is the provision of an opening two inches wide all round the building between the roof and the brickwork, the opening being protected from the weather by eaves which project about a foot. The general ward is a very fine room 83ft. long, 24ft. wide, 14ft. to the ceiling, and another 13ft. to the pitch of roof. It is splendidly lighted and ventilated, and affords 1500 cubic feet of air space to each patient. The architect considers that the ward is equal to any to be found in the best hospitals at home.

**Border Counties Master Painters' Association.**—The Annual Apprentices' Competition and Exhibition, under the auspices of the Border Counties Master Painters' Association, was held in the Burns Hall, Galashiels, last Saturday week. The competition was conducted on entirely new lines, the competitors being put to a thorough test of their merits in the hall under the superintendence of Mr. Brown, Dundee, President of the Master Painters' Association of Scotland; they were divided into three grades, the first being for fifth and sixth year, the second for third and fourth year, and the third for first and second year apprentices. The theoretical test was first applied, after which the practical work was carried through, the tests being oak graining, plain, raised, and shaded letters, two hours being allowed for each subject. The annual business meeting of the Association was held in the Douglas Hotel in the afternoon, Mr. T. C. Russel, Kelso, presiding. The treasurer's report showed a favourable balance of £9 10s. 3d. Office-bearers were elected for the ensuing year as follows:—President, Mr. H. M. Tait, Galashiels; vice-president, Mr. J. M. Bell, Galashiels; secretary and treasurer, ex-Bailie Laidlaw, Hawick. The next annual meeting and competition was fixed to be held at Galashiels.

**A Dispute about Mortar.**—On Wednesday, the 1st inst., in the Queen's Bench Division of the High Court of Justice, the case of Smith v. Johnson, which was an action to recover damages for breach of contract, was decided by Justice Bruce. The plaintiff, a lodging-house keeper in Whitechapel, was building a dormitory to one of his lodging-houses, and contracted with the defendant, a builder and contractor, to supply the mortar. The mortar was supplied, and the building erected. After the building had been erected the plaintiff was served with a notice from the County Council to pull down and rebuild, on the ground that the mortar was not in accordance with the requirements of the Building Act, 1894, which requires one part of lime to three parts of grit or sand. The plaintiff sought to recover from the defendant the whole cost of pulling down and rebuilding, and also the loss of ground rent. It was proved that the mortar was defective, and the learned Judge found that it was so supplied by the defendant. The plaintiff also proved that in a wet state the inferior quality of the mortar could not be detected.—Counsel for the defendant argued that the damages were too remote. If the defendant supplied bad mortar, the plaintiff should have rejected it. (9 Q.B.D., 582.)—Counsel for the plaintiff contended that the test was whether the defective quality of the mortar could have been detected before being used.—Mr. Justice Bruce held that the question was whether the plaintiff, by reasonable diligence, could have discovered the defects in the mortar before using it.—Judgment was given for the plaintiff for £101.



Engineering Notes.

**The Bristol Tramways Company** have been urged to extend their light railway to Hanham.

**Electric Traction for Greenock.**—The plans of the power-house prepared by Mr. Fedden, the engineer, to be erected at Hunter Place, have been approved.

**The Dundee Institute of Engineers** held their monthly meeting on Thursday in Lamb's Hotel. Mr. J. R. Henderson occupied the chair, and there was a fair attendance. Mr. David Peat delivered a lecture on "The Consumption of Coal for Steam-Raising Purposes."

**Birmingham Tramways.**—At a meeting of the Public Works Committee of the Birmingham Corporation on Thursday, it was decided to recommend to the Council the municipalisation of the tramways. The question of the method of traction has not yet been decided. At present electricity by the accumulator system is only used on one of the eight routes, the cable system on another, and steam on the remainder.

**The Channel Tunnel.**—In the absence of Sir Edward Watkin (the chairman) Baron d'Erlanger presided on January 30th at the half-yearly meeting of the Channel Tunnel Company, and in moving the adoption of the report said it would be taking up their time uselessly to set forth the reasons why they had not been able to make progress with their scheme. They hoped, however, that times would change, and that public opinion would enable them to get that which alone would enable them to carry out the work, viz., an Act of Parliament.

Surveying and Sanitary Notes.

**A Sewage Improvement Scheme at Evesham** is proposed at an expenditure of about £2500.

**Wood-paving for Brighton Front** is under consideration by the Works Committee of the Corporation.

**Morecambe District Council** proposes to borrow £4100 for the purposes of street improvements, and a Local Government Board inquiry was held last Thursday.

**Sewage Scheme at Barnsley.**—The Local Government Board have held an inquiry at Barnsley into a proposal to construct sewerage and sewage disposal works for the township at a cost of £3900, in accordance with a scheme of sewerage and treatment prepared by Messrs. Lomas, Bolton.

**Edinburgh Improvements.**—It is proposed to improve the Portobello promenade and sea beach at Edinburgh. The total estimate for the improvements is £90,000, of which £40,000 is required for widening the promenade to admit of the formation of a carriage drive as well as a pedestrian promenade along the sea frontage; £13,000 for the interception of the sewage at present discharged at various points along the beach, carrying it eastwards beyond Portobello, and discharging it into the sea; £7000 for the extension of the promenade; and £30,000 for the construction of a harbour for yachts. The cost of such a scheme, the burgh engineer regarded as prohibitive, but the widening of the promenade in the way indicated would

completely remove all complaints as to the fouling of the bathing beach.

**Who Owns the Subsoil?**—In the Court of Appeal on January 30th, the case of the Vestry of St. Mary, Battersea, v. the County of London and Brush Provincial Electric Lighting Company, was argued before the Master of the Rolls and Lords Justices Rigby and Vaughan Williams. This was an appeal against a decision of Sir F. Jeune, President of the Probate Division. The defendants had opened and broken up the footpath in Trinity Road, Battersea, within the plaintiffs' district, for the purpose of laying their cables at a depth of about 2ft. It was at first denied by the defendants that they had acted wrongfully in breaking up the footpath, but they ultimately admitted that they had, and the only question remaining was whether, the work having been completed, the plaintiffs were entitled to a mandatory injunction. This depended upon whether, by reason of their wires being in the subsoil, the defendants were trespassers upon an interest of the plaintiffs. This raised the question whether the plaintiffs had any property in the subsoil of the street, whether their property extended beyond the surface, and so much below it, as was necessary to the maintenance of the street as a street. The learned President held that the plaintiffs were entitled to a mandatory injunction, and against this decision the defendants appealed.—After hearing the arguments of counsel, the Master of the Rolls said he was bound to come to the conclusion that the plaintiffs had not made out that any right of theirs would be interfered with by the continuance of the defendants' pipes and wires where they were.—Lord Justice Rigby and Lord Justice Vaughan Williams concurred.—The Court accordingly allowed the appeal, and dissolved the mandatory injunction, but gave no costs of the appeal.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—			
Feb. 17	Darlington—Additions, &c., to Baths	Baths Committee	Borough Surveyor, Town Hall, Darlington.
" 17	Easingwold, Yorks.—Vagrant Cells, &c.	Union Guardians	F. J. H. Robinson, Clerk, Easingwold.
" 17	Hales Owen—Police-Station Buildings	Worcestershire County Council, &c.	H. Rowe, County Surveyor, Worcester.
" 17	Leeds—Gardener's Cottage		City Engineer, Municipal-buildings, Leeds.
" 17	Nottingham—Construction of Churchyard Wall	Improvement Committee	A. Brown, City Engineer, Guildhall, Nottingham.
" 17	Rathdrum, Ireland—Labourer's Cottage, &c.	Guardians	— Little, Engineer, Rathdrum.
" 17	Stanley, Durham—Public Convenience	Urban District Council	J. Routledge, Surveyor, Council Offices, Stanley.
" 17	Leyton, Essex—Billiard Room, Concert Hall, &c.	Progressive Club	The Club House, Pioneer Lodge, Church-road, Leyton.
" 17	Sutton, Surrey—Twelve Houses, &c.		Morgan, Baines, and Clark, Sutton, Surrey.
" 17	Wadebridge—Erection of Vicarage		Egloschayle Vicarage, near Wadebridge.
" 18	Bradshaw, near Halifax—Detached Villa	J. Patchett	W. C. Williams, 29, Southgate, Halifax.
" 18	Charlbury—Classroom, &c., at Infants' School	School Board	G. Castle, Architect, Woodstock.
" 18	Helmley, Yorks.—Additions to Police Stations		W. Stead, County Surveyor, Northallerton.
" 18	Kilbarchan, Scotland—Church Works	Joint Committee	W. H. Howie, 131, West Regent-street, Glasgow.
" 18	Manchester—Church		Greaves and Burbridge, 1, Harrington-street, Liverpool.
" 18	Liverpool—Wesleyan Church	Trustees	R. W. Greaves, 1, Harrington-street, Liverpool.
" 20	Chartham, near Canterbury—Chapel, &c.	Parish Council	A. Bromley, Architect, The Cathedral Precincts, Canterbury.
" 20	Southampton—Artisans' Dwellings	Council	G. B. Nalder, Town Clerk, Municipal Offices, Southampton.
" 20	Tenby—Staircases & Balconies to Workmen's Dwellings	C. J. Williams	H. T. Morley, Architect, Tenby.
" 20	Ipswich—Erection of Conveniences, &c.	Burial Board	H. J. Wright, 4, Museum-street, Ipswich.
" 20	Stockton-on-Tees—Cottage Homes	Union Guardians	J. Rodham, 16, Finkle-street, Stockton-on-Tees.
" 21	Haverfordwest—Additions, &c., to Schools	School Board	D. E. Thomas, Architect, Victoria-place, Haverfordwest.
" 21	Neath—School Buildings	County School Governors	D. M. Jenkins, Architect, Gwyn Hall, Neath.
" 21	Walton, Suffolk—Two Cottages	Foresters' Court	G. Finch, Chapel Villa, Walton.
" 21	Kinloss, Scotland—Mason Work, &c., to Cemetery		—, 147, High-street, Elgin.
" 21	Dover—Construction of Conveniences, &c.	Town Council	H. E. Stilgoe, Engineer, Town Hall, Dover.
" 21	West Kensington, W.—Foundations for Bank	H.M. Commissioners of Works	The Secretary, Office of Works, Storey's Gate, S.W.
" 22	Halifax—Warehouse		C. F. L. Horsfall and Son, Lord-street-chambers, Halifax.
" 22	Workington—Hospital Block	Corporation	W. Eaglesfield, Borough Surveyor, Town Hall, Workington.
" 22	Gorton, Lancs.—Alterations, &c.	Urban District Council	C. J. Lomax, 37, Cross-street, Manchester.
" 23	Canterbury—Repairs, &c., to Hospital		A. Bromley, Architect, The Cathedral Precincts, Canterbury.
" 23	Uxbridge—Erection of Bathrooms, &c.	Guardians	W. L. Eves, 54, High-street, Uxbridge.
" 24	Hipperholme—Erection of Three Houses		R. Berry, Architect, Arcade-chbrs., Commercial-st., Halifax.
" 24	Fletton, Peterborough—Erection of Shops, &c.	Equitable & Industrial Co-op. Soc. Ltd.	Townsend & Fordham, Architects, Cross-st., Peterborough.
" 25	Hebden Bridge—Erection of Hotel	Brewery Company	W. C. Williams, 29, Southgate, Halifax.
" 25	London, W.—Erection of School	Aske's Haberdashers' Schools' Managers	H. Stock, 9, Denham-street, London Bridge, S.E.
" 25	Warminster—Vagrant Wards	Workhouse Guardians	Master of Workhouse, Warminster.
" 25	Westport, Ireland—Post Office	Public Works Department	H. Williams, Secretary, Office of Public Works, Dublin.
" 25	Tipton, Staffs.—Laying-out Park	Urban District Council	W. H. Jukes, Council's Surveyor, Owen-street, Tipton.
" 25	London—Works and Repairs	H.M. Commissioners of Works	Office, Storey's Gate, Westminster.
" 27	Llantwit Major—Repaving Church		G. E. Halliday, Architect, Cardiff.
" 27	Wolverhampton—Extension of Electric Light Station..	Lighting Committee	J. W. Bradley, Town Hall, Wolverhampton.
" 28	St. Erth, Cornwall—Two Cottages	Great Western Railway	Engineer, G.W.Rly. Station, Plymouth.
" 28	Woolwich—Stabling, &c.	Local Board of Health	J. A. Cook, 1A, Eleanor-road, Woolwich.
" 28	London, S.W.—Two Cottages..	County Council	Engineer's Department, County Hall, Spring-gardens, S.W.
March 1	Ulverston—Church, &c.		J. Wills, Architect, St. Peter's Churchyard, Derby.
" 1	Archid, near Sandbach—Infirmary at Workhouse	Congleton Union Guardians	A. Price, Architect, Elworth, Sandbach.
" 2	Hampton Court, Kew, and Richmond—Repairs &c., to Public Buildings	Commissioners of H.M. Works	R. B. Brett, Sec., H.M. Office of Works, Storey's-gate, S.W.
" 3	Sowerby Bridge, Yorks—Erection of Schools	School Board	C. F. L. Horsfall and Son, Lord-street-chambers, Halifax.
" 4	Knaresborough—School Buildings	King James's Gram. School Governors	W. Gill, Secretary to Governors, Knaresborough.
" 6	Clayton-le-Dale, Lancs.—Bridge Works	County Council	County Bridgemaster's Office, County Offices, Preston.
" 7	Aberwynd, Wales—School Alterations, &c.	Glyncorrwg Board School..	O. P. Lambert, Architect, Bridgend.
" 15	Glasgow—Exhibition Buildings	Glasgow International Exhibition	F. A. Healey, 141, Buchanan-street, Glasgow.
No date.	Morecambe—Alterations, &c., to Schools		Marshall Bros., Architects, Back-crescent, Morecambe.



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—</b>			
Feb. 17	Southampton—Electric Lighting, &c.	Corporation	Municipal Offices, Southampton.
" 18	Edinburgh—Construction of Railways	Glasgow & Renfrew District Railway Co.	Wharrie and Colledge, 109, Bath-street, Glasgow.
" 20	Manchester—Electric Trams	Corporation	J. M. M'Elroy, Secretary, Town Hall, Manchester.
" 20	Edinburgh—Overhead Crane, &c.	Magistrates and Council	Resident Engineer, Dewar-place, Edinburgh.
" 20	Pontypool—Storage Tank, &c.	W. Monmouthshire Schools Governors	G. H. Daniel, Engineer, Clarence-street, Pontypool.
" 20	Eastbourne—Pier Improvements	Pier Co. Ltd.	M. N. Ridley, 11, Dartmouth-street, Queen Anne's-gate, S.W.
" 21	Smethwick—Coke-handling Plant	Gas Committee	B. W. Smith, Gasworks, Rabone-lane, Smethwick.
" 22	Langodock, Carmarthen—Bridge	Rural District Council	M. W. Davies, Engineer, Gloucester-place, Swansea.
" 22	Gorton, Lancs.—Sludge Pressing Machinery	Urban District Council	C. J. Lomax, 37, Cross-street, Manchester.
" 23	Belfast—Boilers, &c.	Electric Committee	V. A. H. McCowen, City Electrical Engineer, Belfast.
" 26	Christiana—Porcelain Telegraph, &c., Insulators	Norwegian State Telegraph Administration	Commercial Department, Foreign Office, S.W.
" 27	Merthyr Tydfil—Reservoirs, &c.	Urban District Council	T. F. Harvey, Engineer, Town Hall, Merthyr Tydfil.
" 28	Oldham—Two Boilers	Corporation Electric Light Committee	Prof. Kennedy, 17, Victoria-street, Westminster.
" 28	Gloucester—Condensers, Air Pumps, &c.	Electricity Supply Committee	R. Hammond, 64, Victoria-street, Westminster.
" 28	Wakefield—Waterworks	Corporation	C. C. Smith, Engineer, Townhall, Wakefield.
" 28	Rhos, Denbighshire—Construction of Railway	Great Western Railway Company	Engineer, Paddington Station, London.
March 1	Llanidloes—Reservoir	Town Council	A. Davies, Town Clerk, Llanidloes.
" 2	Cairo—Iron Canal Bridge	Public Works Department	The Inspector, Second Circle of Irrigation, Cairo.
" 3	Edinburgh—Aqueduct, Bridges, &c.	Water Trustees	J. Wilson, 72a, George-street, Edinburgh.
<b>IRON AND STEEL—</b>			
Feb. 17	Shipley—Cast-iron Pipes	Urban District Council	J. S. Rhodes, Clerk, Manor House, Shipley.
" 17	Dublin—Chain Cable	Commissioners of Irish Lights	R. Armstrong, Secretary, Irish Lights Office, Dublin.
" 20	Brighton—Iron and Steel Work	Marine Palace and Pier Works	R. S. G. Moore, 17, Victoria-street, S.W.
" 20	Pontypool—Ironwork for Canal Bridges	Rural District Council	E. Rees, Surveyor, Council Offices, Pontypool.
" 21	Bradford—Steel Girder Rails, &c.	Corporation	J. H. Cox, City Engineer, Town Hall, Bradford.
" 21	India Office, S.W.—Railway Lines, &c.		Director-General of Stores, India Office, Whitehall, S.W.
" 22	Burnley—Cast-iron Pipes	Gas Committee	J. F. Leather, Gas Engineer, Gasworks, Burnley.
" 22	Torquay—Supply of Cast-iron Pipes, &c.	Water Committee	W. Ingram, Water Engineer, Torquay.
" 24	London, S.W.—Steel Cylinder, &c. for Bridge Piers	Uganda Railway Committee	Crown Agents for the Colonies, Downing-street, S.W.
" 25	London, S.W.—Gas Fitters' Work	H.M. Commissioners of Works	Office, Storey's Gate, Westminster.
<b>PAINTING AND PLUMBING—</b>			
Feb. 20	Prestwich, Manchester—Painting Work	Committee of Visitors	Superintendent, County Asylum, Prestwich.
No date.	Ascot—Painting Grand Stand, &c.	Trustees of Grand Stand	W. Menzies, F.S.I., Englefield Green, Surrey.
"	New Wortley, Leeds—Cleaning, &c., Church		W. B. Armitage, 50, Eighteenth-av., New Wortley, Leeds.
"	Thornaby—Painting and Decorating Chapel		G. Hewlett, 1, Derby-street, Thornaby.
<b>ROADS AND CARTAGE—</b>			
Feb. 17	London, N.—Materials and Works	St. Mary's Vestry, Stoke Newington	R. Brown, Vestry Surveyor, 126, Church-street, N.
" 17	Nelson—Construction of Footpaths	Market and Parks Committee	B. Ball, Borough Surveyor, Town Hall, Nelson.
" 17	Putney—Graveling Paths	Burial Board	F. Pain, Clerk, 153, High-street, Putney.
" 17	Bexhill, Sussex—Street Works	Urban District Council	G. Ball, Surveyor, Town Hall, Bexhill.
" 18	Bootle, Lancs.—Team Labour and Cartage	Corporation	T. L. Edwards, County Surveyor, Town Hall, Bootle.
" 18	Bridgend—Materials and Haulage	Glamorgan County Council	G. Coombs, Clerk for Highway Purposes, New-st., Oundle.
" 18	Oundle, Northants—Slag and Graite	Rural District Council	Borough Surveyor, Municipal Offices, Rawtenstall.
" 18	Rawtenstall, Lancs.—Materials	Corporation	T. A. Busbridge, District Surveyor, Spilsby.
" 18	Spilsby, Lincs.—Broken Granite and Slag	Rural District Council	Borough Surveyor, Town Hall, Spilsby.
" 20	Darlington—Supply of Materials	Streets Committee	J. Paton, Borough Engineer, Municipal Offices, Plymouth.
" 20	Plymouth—Goods and Materials		T. Henry, Surveyor, Retford.
" 20	East Retford—Road Materials	Rural District Council	Surveyor to Vestry, Westminster.
" 20	London, S.W.—Works and Materials	St. James's Vestry, Westminster	J. Cartwright, Borough Engineer, Corporation Offices, Bury.
" 21	Bury, Lancashire—Flags, Kerbs, and Setts	Sewering, Paving, & Streets Committee	D. W. Morrice, District Surveyor, Hounston.
" 21	Salisbury—Stones and Gravel	Rural District Council	J. T. Pidditch, Vestry Hall, Lavender Hill, S.W.
" 21	Battersea, S.W.—Works and Services	Vestry	J. Lovegrove, Townhall, Hackney, N.E.
" 22	London, N.E.—Works and Materials	Hackney Vestry	C. Bolterill, Town Hall, Walham Green, S.W.
" 22	London, S.W.—Road Making and Paving	Fulham Vestry	A. Dodgeon, Council Offices, Clayton-le-Moors.
" 22	Clayton-le-Moors—Granite Setts	Urban District Council	A. C. Turley, Borough Surveyor, Town Hall, Eccles.
" 23	Eccles, Lancashire—Materials, &c.	Highways Committee	H. C. Johnson, Deputy Clerk, Sessions House, Boston.
" 23	Boston, Leicestershire—Broken Granite, &c.	Holland County Council	Vestry Hall, Upper-street, N.
" 23	London, N.—Works and Materials	Islington Vestry	J. Eastwood, Surveyor, Luddenhall.
" 24	Warley, Near Halifax—Quarrying Setts	Urban Council	J. Sheldon, Chief Surveyor, Duke-street, Chelmsford.
" 25	Chelmsford—Team Labour	Essex County Council	J. E. Chatterton, Clerk, Horncastle.
" 25	Horncastle, Lincolnshire—Road Material	Rural District Council	F. J. Wood, County Surveyor, County Hall, Lewes.
" 25	Lewes—Materials, &c.	East Sussex County Council	W. C. Leete, Town Hall, Kensington High-street, W.
" 27	London, W.—Materials	St. Mary Abbots' Vestry, Kensington	C. F. Wike, City Surveyor, Town Hall, Sheffield.
" 27	Sheffield—Works and Materials	Highway and Sewerage Committee	Burgh Surveyor, Town Hall, Motherwell.
" 27	Motherwell, Scotland—Road Metal	Commissioners	E. W. Knoch, Town Clerk, Castle Hill House, Dover.
" 28	Dover—Supply of Broken Flints	Town Council	Rev. A. G. Tweedale, The Vicarage, Selby.
" 28	Selby—Asphalte or Tar Macadam	National Schools Managers	G. R. Norrish, Surveyor, Emerson-street, Banskide, S.E.
March 1	London, S.E.—Materials	St. Saviour's Board of Works	T. M. Reed, Clerk, Workhouse, Bridgewater.
" 4	Bridgewater—Haulage, &c.	Rural District Council	
<b>SANITARY—</b>			
Feb. 18	Banchory, Aberdeen—Sewers		Jenkins and Marr, 19, Bridge-street, Aberdeen.
" 18	Evesham—Pipe Sewers, &c.	Rural District Council	H. S. Harvey, Albert-road, Evesham.
" 18	Coalville, near Leicester—Sewers, &c.	Urban District Council	J. B. Everard, 6, Millstone-lane, Leicester.
" 20	Tipton—Removal of Light Soil	Urban District Council	C. H. Clifton, Sanitary Inspector, Public Offices, Tipton.
" 21	Dunham Massey—Cheshire—Sewers, &c.	Bucklow Rural District Council	J. M'D. McKenzie, 7 Market-street, Altrincham.
" 21	Epsom—Sewerage Works	Urban District Council	Surveyor, East-street, Epsom.
" 21	Staines—Sewage Disposal Works	Urban District Council	J. C. Mellis, 264, Gresham House, Old Broad-street, E.C.
" 22	Ramsbottom, Lancs.—Sewering Roads	Urban District Council	J. W. Barlow, Clerk, Market-place, Ramsbottom.
" 25	St. Anne's-on-Sea—Sewers, &c.	Urban District Council	H. Bancroft, 88, Mosley-street, Manchester.
May 12	Johannesburg—Sewerage Scheme		Town Engineer, Johannesburg.
<b>TIMBER—</b>			
Feb. 17	London, S.W.—Kindling Wood	War Office	Assistant Adjutant-General, War Office, S.W.
" 17	Epping, Essex—Wood Hurdles	Essex Agricultural Society	H. B. Yerburgh, Hon. Secretary, Frampton, Epping.
" 18	Bootle, Lancs.—Timber	Corporation	Borough Surveyor, Town Hall, Bootle.
" 20	London, W.—Carriage Timber	Great Western Railway	Secretary, Paddington Station, London, W.
" 28	London, W.—Creosoted Sleepers, &c.	Great Western Railway	Secretary, Paddington Station, London, W.

## COMPETITIONS.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
Feb. 24	Northwich—Two Story Dwelling House	£20, £10, £5	Northwich Salt Compensation Board, Wimmington-street.
" 28	Knutsford—Laying-out Cemetery, &c.	£20, £10	W. J. Downes, Surveyor, Urban District Council, Knutsford.
" 28	London, S.W.—Covered Sanitary Dust-cart	£25	Clerk, London County Council, Spring Gardens, S.W.
March 1	Northwich—Dwelling-house on Land Liable to Subsidence	£20, £10, £5	Salt Compensation Board, Northwich.
" 4	Beverley—School Buildings	£25, £10	Beverley Grammar School.
" 22	London, E.C.—Additions to Town Hall	£50, £25	Shoreditch Vestry.
" 30	Doncaster—Design for Master's House	£50, £25	Doncaster Grammar School Trustees.
" 31	Ramsgate—Concert Hall, Reading Room, &c.	£50, £20, £10	T. G. Taylor, Surveyor to Corporation, Broad-st., Ramsgate.
" 31	Forfar—Isolation Hospital	£31 10s., £21, £15 15s.	Dundee and Forfar District Committees.
April 14	Bradford—Cartwright Memorial Hall and Art Gallery	£150, £100, £50	City Surveyor, Bradford.
June 1	Leeds—Market Hall and Shops	£150, £100, £50	Corporation.
No date	Hexham—Vagrant Wards at Workhouse	£20	J. H. Nicholson, Clerk, Midland Bank-chambers, Hexham.
"	London, S.W.—Design for Board Room, Offices, &c.	£100, £60, £40	Wandsworth and Clapham Union Guardians.



# Property and Land Sales.

## PERIODICAL SALES.

ESTABLISHED 1843.

**MESSRS. H. E. FOSTER & CRANFIELD** (successors to Marsh, Miller, and Co.) conduct PERIODICAL SALES of

REVERSIONS (Absolute and Contingent),  
LIFE INTERESTS and ANNUITIES,  
LIFE POLICIES,  
Shares and Debentures,  
Mortgage Debts and Bonds, and  
Kindred Interests,

on the FIRST and THIRD THURSDAYS in each month throughout the year, at the MART, Tokenhouse-yard, E.C.

The following are the appointments fixed for 1899:—

February 16th	June 1st	September 21st
March 2nd	June 15th	October 5th
March 16th	July 6th	October 19th
April 6th	July 20th	November 2nd
April 20th	August 3rd	November 16th
May 4th	August 17th	December 7th
May 18th	September 7th	December 21st

Offices, 6, Poultry, London, E.C. Telephone No. 999 Bank.

**SURREY.—CHOICE BUILDING ESTATE.**—In a charming district, two miles from Horley station (L.B. and S.C. Rly.) under one hour from London and adjoining a village where are church, shops, and post-office; two miles from Roman Catholic Church.

FOR SALE, a compact and valuable FREEHOLD PROPERTY of 53 acres, with a frontage to the main Brighton road of 2000ft., and perfectly ripe for development, with residences of a good class. Prettily timbered. Gas and water mains along the frontage. Would be divided.

Plans and full particulars of the owner's agents, Messrs. GREEN and SIMES, Auctioneers and Estate Agents, Blenheim Mansions, Queen Anne's-gate, London, S.W.; or Mr. W. M. LEACH, Auctioneer and Estate Agent, Crawley, Sussex.

**FAIRMILE PARK**, near Cobham, Surrey.—A FREEHOLD BUILDING ESTATE of about 40 acres, with possession.

**MESSRS. DRIVER and CO.** have received instructions to offer to AUCTION at the MART, Tokenhouse-yard, Lothbury, NEXT SPRING (unless previously sold by private contract), the above property, situate in a favourite residential district, about a quarter of an hour's walk from the Oxshott and Fairmile Station, and about a mile and a half from Cobham Station. The estate comprises Building Land, ripe for development, the higher portion (sloping to the south) possessing charming views over the intervening country to Epsom Downs; and a Residence known as "South Lodge," with stabling and garden; Eight small Villas, some Cottages, and the "Griffin" Beerhouse. On a portion of the estate brickearth is being worked, and will be included in the sale as a "going concern."

Particulars and plans, when ready, can be obtained of CHARLES JUPP, Esq., Solicitor, 48, Lime-street, E.C.; and of Messrs. DRIVER and Co., 23, Pall Mall, S.W.

By order of Trustees.—Preliminary Advertisement.—Freehold Building Estate, Streatham, near West Norwood Railway Station.

**MESSRS. FIELD and SONS**, and Messrs. WALFORD and WILSHIN, who are jointly concerned, will SELL by AUCTION, at the MART, at an early date, a valuable FREEHOLD BUILDING ESTATE, known as High View Park, comprising 16a. 1r. 10p., lying immediately at the rear of and with approach from Leigham Court-road; also a contiguous Freehold Building Site of 2a. and 5p. in a new road intended to connect Canterbury-grove with Thurlby-road.

Particulars and plan, in due course, of Messrs. KINGSFORD, DORMAN, and Co., Solicitors, 23, Essex-street, Strand; of Messrs. WALFORD and WILSHIN, Auctioneers, Anerley, S.E.; and of Messrs. FIELD and SONS, as above.

**LEA VALLEY, PONDERS END**, and **BROXBOURNE**.—Freehold Wharf and Building Land, the latter with possession, some of which has been included in the schedule of the land required by the East London Waterworks Company.

**MESSRS. NORTON, TRIST, and GILBERT** will SELL by AUCTION, at the MART, Tokenhouse-yard, London, E.C., on TUESDAY, FEBRUARY 28th, 1899.

LOT 1.—8 acres 0 rods 11 perches of Land, with a frontage of 500ft. to the Lea and Stort Navigation Canal, also bounded on the north and east sides by the stream. This land is situate immediately opposite the Corticine Floor Covering Works, Ponders End, and is a fine site for the erection of a factory requiring waterside accommodation. It is in the occupation of Mr. Ives. This land has been scheduled to be acquired for the New Reservoir for which the East London Waterworks Company are applying for Parliamentary powers.

LOT 2.—14½ Acres of Freehold Building Land, with a frontage of 1080ft. to the road, close to Dobbs Weir, and within one and a half miles of Broxbourne Town and Station, now ripe for building purposes, possession of which can be given on completion of the purchase.

Particulars and conditions of Sale may be obtained from the Senior Official Receiver in Bankruptcy; of Messrs. CLARKE, RAWLINS, and Co., 66, Gresham House, London, E.C.; at the MART; and of the AUCTIONEERS, 70, Queen-street Cheapside, London, E.C.

To Land Syndicates, Building Societies, Capitalists, and others.

**PINNER**.—Important Freehold Building Estate of over 47 acres, with residence, known as Barrow Point, occupying a beautiful position close to the quaint old village of Pinner, within five minutes from the railway station on the Metropolitan line, and extending to within about ½ of a mile of Pinner Station on the London and North-Western Railway, having easy access from the West-end and City. The whole ripe for immediate building operation, and admirably adapted for villa residences of a superior class.

**MESSRS. FAREBROTHER, ELLIS, EGERTON, BREACH, GALSORTHY**, and CO. beg to announce that the above valuable PROPERTY, which they recently offered for Sale by Auction, may now be treated for privately.

No. 29, Fleet Street, Temple Bar, and 18, Old Broad Street, E.C.

**TO CONTRACTORS, CAPITALISTS, and OTHERS**.—Valuable Quarry, Light Railway, and Mines, situate in South Wales, to be sold as a whole.—For further particulars apply to J. W. DAVIDSON, COOKSON, and Co., 6, Castle Street, Liverpool. 2

## THE SANITARY INSTITUTE.

LECTURES AND DEMONSTRATIONS FOR SANITARY OFFICERS.

The TWENTY-SEVENTH COURSE OF LECTURES will be held at the Parkes Museum, Margaret-street, W., on MONDAYS and THURSDAYS, commencing FEBRUARY 20th.

The course includes, in addition to the lectures, a number of Practical Demonstrations and Inspections at Places illustrative of Sanitary Practice and Administration.

Full particulars can be obtained at the Offices of the Institute, Margaret-street, W. 1

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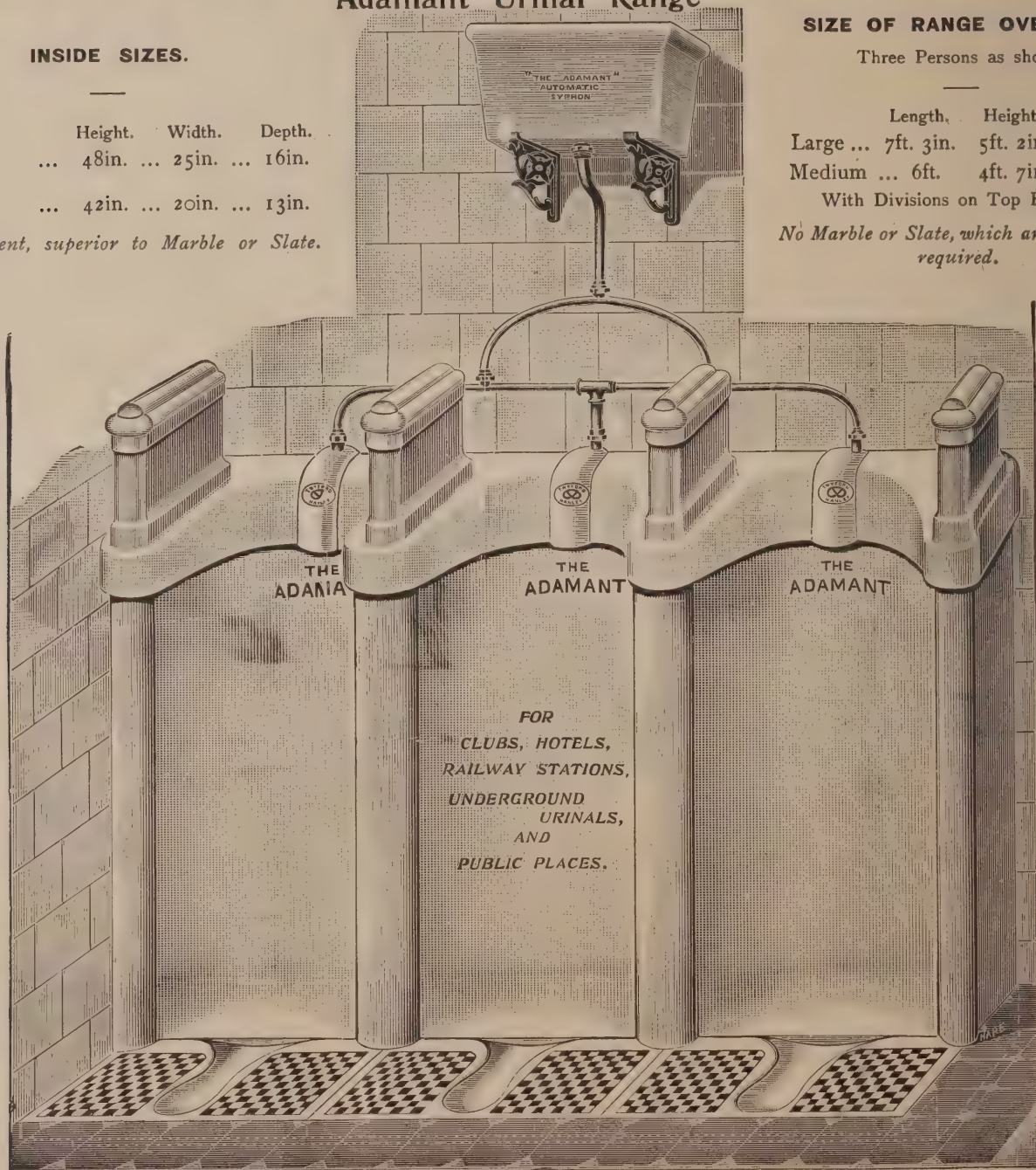
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## An Architectural Causerie.

Vistas.

As the accompanying illustration is typical it has been selected out of a number which might appropriately accompany this short paper. There has already appeared in this journal an article entitled "Church Restoration in Norfolk," which referred in particular to what they want to have done at Worstead. I said among other things that I thought it of more importance to restore the congregation to the church than the church in its original state to a mere handful of regular attendants whose numbers may be estimated roughly by considering that the entire population of Worstead consists of scarcely 800 people, and it was in my mind to add that part at least of the sum raised should be spent in clearing the space roundabout in order that we may be able to see of the church as much as our fathers saw; and this, being pure restoration, is less likely to be objected to than the architect's designs on the structure. Let us turn from Worstead to London, and consider what, to this end, we are doing; for here within the last year or two nearly the whole *entourage* of the Abbey has been cleared, with the result that the revelation of its loveliness becomes more complete, and in fact there is hardly a building "hallowed by Time" that is not being, or likely to be restored, as to its aspect, in this lordly and generous way. If only for health's sake the furnishing of more and more open spaces is seen to be necessary, and whensoever it appears to be possible to effect a clearance round really beautiful buildings there is in the fact that we love them an additional reason for action. On the other side is the great question which cannot be entered on here, of better lodging for as many as must be ousted. I have headed this article "Vistas," and illustrated it by showing what faces the Market Place in the sweet and dear little town of Aylesham in Norfolk. Now at Worstead there is in the Parish Church an equally handsome porch, which is entirely hidden from sight by insignificant buildings that to serve some temporary purpose have gathered about it. If you think to enjoy the south view of this church you must traverse a narrow lane that runs alongside, and between this lane and the church are these unsightly erections. There be two thousand pounds wanted here. Let the congregation be restored; the money will come sure enough, and there will at the same time be rekindled something like a municipal sense of devotion to the most appealingly beautiful thing in the place. "Cabined, cribbed, and confined" as we are here in London, the disposition to dream of open spaces, vistas, and avenues becomes general—so general indeed that no one expresses surprise when an architect talks in his sleep of what would delight our eyes were a full view of the British Museum to be obtained from Waterloo Bridge, nor when the gifted author of a popular book on architecture diverts his readers with tales of a day in the distant past when from his own front door in Gower Street he looked without let or hindrance on the mainpots of Hampstead Heath. E. R.

ANYBODY who is acquainted with the furniture gallery at South Kensington Art Museum will remember the collection of English chairs arranged in the North-West Corridor. Here are to be found Jacobean chairs, chairs in the Dutch manner, and, arranged chronologically, Queen Anne chairs, then Frenchified chairs, then Chippendale's Gothic and Japanese chairs, then chairs by Sheraton, then others by Hepplewhite and Adams, then a chair labelled "English chair, early nineteenth century," then—nothing.

present century. For the benefit of those who have not remarked the chair in question, one will attempt a brief description. It assumes to be mahogany, and perhaps it is—you are requested not to touch it. The back is composed of a waved strip of wood of an equal elliptic section, which springs out in continuation of one back leg, shoots up and round in a frantic wriggling loop, and dives into the other. The intervening space is apparently laced across; and is stuffed and upholstered to match the seat. The front legs have a meaningless curve of contrary flexure, and suggest weakness and knock-knees. The lines of the seat, which is upholstered



SOUTH PORCH, AYLSEHAM PARISH CHURCH.

After 1801 classification apparently breaks down, chairs, to all appearances, ceased after the year 1801, and upon the evidence of this last particular specimen they ceased very soon after that date. This example acts as a tail-piece to the history of chairs as exemplified at South Kensington Museum. It at once explains and justifies the discretion of the Museum authorities in pursuing the subject no further, and would seem to have been set in the gallery merely to suggest to the student the nature of the calamity that befell furniture during the first half of the

in some patterned velvety fabric, are also waved curves. The design expresses no comfortable utility, and no beauty. All its lines recall the scrawled curves of the lightning caricaturist. It looks as if it had been made against time for a wager, and it has no individuality beyond the insufferable nineteenth century quality of "gentility." It would group well with a stuffed lap-dog in a glass case; it seems to pine for an antimacassar; it recalls that atmosphere of prosperous-domesticity which Dickens has typified in the inimitable phrase "Saddle-of-mutton



vapour bath." That is all. Now, there must be a substantial reason why in an interval of only some thirty years popular taste should have ceased to favour chairs of thoughtful and beautiful design, and accepted a pattern of furniture which is recommended by no qualities either of usefulness or comeliness; and this is a particularly interesting speculation, because, although we may reasonably hope that our great-grandchildren will find the history of chairs revived again in our museums with examples dating from about the year 1900, we have as yet not emerged from the decadent epoch which flourished in the mid-century. Mr. Frederic Harrison, in his "Studies in Early Victorian Literature," has shown that the century will always be distinguished for its scientific and sociological progress almost to the exclusion of its purely literary and artistic achievements, and in this materialistic quality of the age we may find also the reason for the derogatory impulses from which we are only now beginning to recover. Steam power has been the chief factor in producing this condition. The invention of machinery, the whirl of commercial activity it induced, the huge fortunes made by the ingenuity of mechanics and the enterprise of capitalists, the resultant hurry, the fever, and the desperate competition in cheapness plying the public with showy imitations, demoralised and betrayed the arts and the handicrafts. In "Aratra Pentilici" Mr. Ruskin refers to a letter he once received from the owner of a large mason's yard, inviting him to visit the mason's establishment, and satisfy himself how much better and more quickly stone could be "roughed out" for the carver by machinery than by manual labour. The author's characteristic comment is that he would as soon go to see the Oxford and Cambridge Boat Race rowed by automata. For all this a positive degeneration in the Art ideals of the nation, though it may find a certain apology in the birth of steam, is not excused thereby. Although the parts of a piece of furniture are prepared by aid of machinery, that is no reason why the piece should not be thoughtfully designed; nor why it should not be properly and strongly constructed; nor why its lines should not be beautiful. Steam power and its accessories wrought the decay of craftsmanship and the popular discernment of the beautiful, rather by the overwhelming commercial activity and vulgar money-getting instincts it engendered, than by any direct essential of the new tool. If Thackeray had been born thirty years later than he was it would have been the snobbery of wealth rather than the snobbery of rank that would have prompted his satire. The tyranny of steam and machinery has effected such a radical change in the popular taste that it may be said to have bred a new aesthetic sense with the general public. This dictates that whatever thing, or part of a thing, assumes to be square must be die square if it is to be commended; or if circular it must clearly be the circle as turned with compasses; a tool-mark is by these considered a flaw; the turned legs of a table, or a pair of any two things, must be indistinguishable to pass muster; and we may observe in the work of the ordinary sign-writer a natural aptitude, and a practiced skill, which prompts him to emulate the hard mechanical curve, which is achievable with simple mathematical appliances, and to secure a rigidity and equality in his parts which shall defy test by scale and dividers. H. B. C.

**The Vandyck Tercentenary** is to be celebrated at Antwerp in August next. In connection with this event 1,000,000 special postage stamps will be issued, which will bear as part of an elegant design a portrait of the great painter.

## On Reflection.

### The Leighton Bequest.

THE ROYAL ACADEMY has at last decided to spend the income derived from the fund bequeathed to the Academy by Lord Leighton on his death to acquiring or commissioning works of decorative painting, sculpture, and Architecture. The steadfast attitude of conservatism which characterises the Academy in matters pertaining to Art has rarely expanded to such a vigorous initiative as that indicated by its late decision. It is decided by the Academy that Lord Leighton's bequest shall be applied to the decoration and beautifying of public property, and this is an influential step towards restoring Art to its true place as a factor in beautifying and ameliorating the familiar life of the people. In England hitherto Art has been a thing associated with picture galleries and museums, and has come to be regarded as an extraneous product of civilisation, instead of an essential privilege of mankind whereby the harsh and prosaic routine of life may be crowned with grace and nobility. Thus it has come about that in our metropolis we have ludicrous anomalies and contradictions pressed together. We find the Elgin marbles and Tottenham Court Road furniture stored cheek by jowl, and it would be difficult to say which calls for the greater admiration. People will live a month surrounded with execrating vulgarities of taste, visit a picture gallery, and return again with perfect equanimity to their wool mats, chandeliers, and steam-turned ornaments. By the usage of galleries and museums, the test and noblest prerogatives of both painting and sculpture—namely, to decorate and give complete expression to noble buildings—are almost entirely overlooked. Lord Leighton's bequest will provide some £300 per annum, which is to be expended upon lamp posts, fountains, sculptures, and paintings, decoration of public and national sites and buildings. There is surely no more direct or plausible method of educating the public taste to the full significance of Art, than to apply it to the beautifying of the common surroundings of their daily life.

### The Irresponsible Councillor Again.

MR. GEORGE H. WILLOUGHBY, F.R.I.B.A., deserves the thanks of the Profession for his action in calling public attention to the Architectural competition lately advertised by the Knutsford Urban District Council, by the letter of protest which lately appeared above his name in the "Manchester Courier." "Surely," says Mr. Willoughby, "throughout the history of Architectural competitions no competition has ever been issued more grotesque or ludicrous," and though, in view of the irresponsible junkettings of Urban and Municipal councillors, which characterise the conduct of most competitions, this is a daring statement to make, we think it cannot be far from true. The subject is the Knutsford Cemetery Chapel, to cost £4000. Mr. Willoughby makes no mention of any premiums being offered, and we assume there are none. No professional assessor to assist the Council is promised. The Council reserve the right to exclude any design which seems to them too costly or to be otherwise unsuitable. In order to raise up competitors from the heavy dejection occasioned by this depressing statement, the Council, however, promises, in the event of no design being considered suitable, to make amends by having another competition; and, we presume, upon the same conditions! The 5 per cent. commission paid to the appointed architect is to include the quantity surveyor's fees. Finally, although hitherto

we have all considered strict anonymity, or an assumption of it, to be the one essential of a "competition," the Knutsford Urban District Council have taken it upon themselves to change all that, and have made it a condition that all plans must be sent in *with the author's name attached!* It will be seen from these facts that the Council has exempted itself from all essential obligations; and has stultified, in its "conditions," the fundamental principles which constitute a competitive test of any sort.

### A Useful Society. for Checking the Abuses of Public Advertising.

THE National Society, to whose activity is due the circulation and presentation of the late memorial to the L.C.C., has for many years been doing a quantity of useful work in a quiet, unostentatious way. In many instances it has succeeded, by appeals and representations, in impressing advertisers with the offensiveness of their methods, and has thus succeeded in modifying or averting some of the more extravagant contrivances which have threatened to deform the metropolis of late years; it has, further, by calling general attention to notorious trespasses upon public decency and rights of citizenship; and by judiciously exploiting the views of persons of culture upon the subject of advertisements, kept alive the distaste with which the encroachments of advertisers were originally regarded, and has thus prevented the usage from finding general acceptance as one of the essential conditions of life in the present age. The Society has acted with praiseworthy discretion in refraining hitherto from hastening to extreme measures which might alienate the general public from sympathy with its motives, but it is now time for a decisive action to be taken, and it will be strange if the moderate and reasonable suggestions set forth in the memorial do not effect some substantial addition to the laws governing public advertisements. Previous to his investiture with the honours of the Laureateship Mr. Alfred Austin was president of the Society, and used to contribute verses ridiculing the assumptions and vulgarity of modern advertising tradesmen and manufacturers. In Mr. Waterhouse the Society has a no less influential and enthusiastic president.

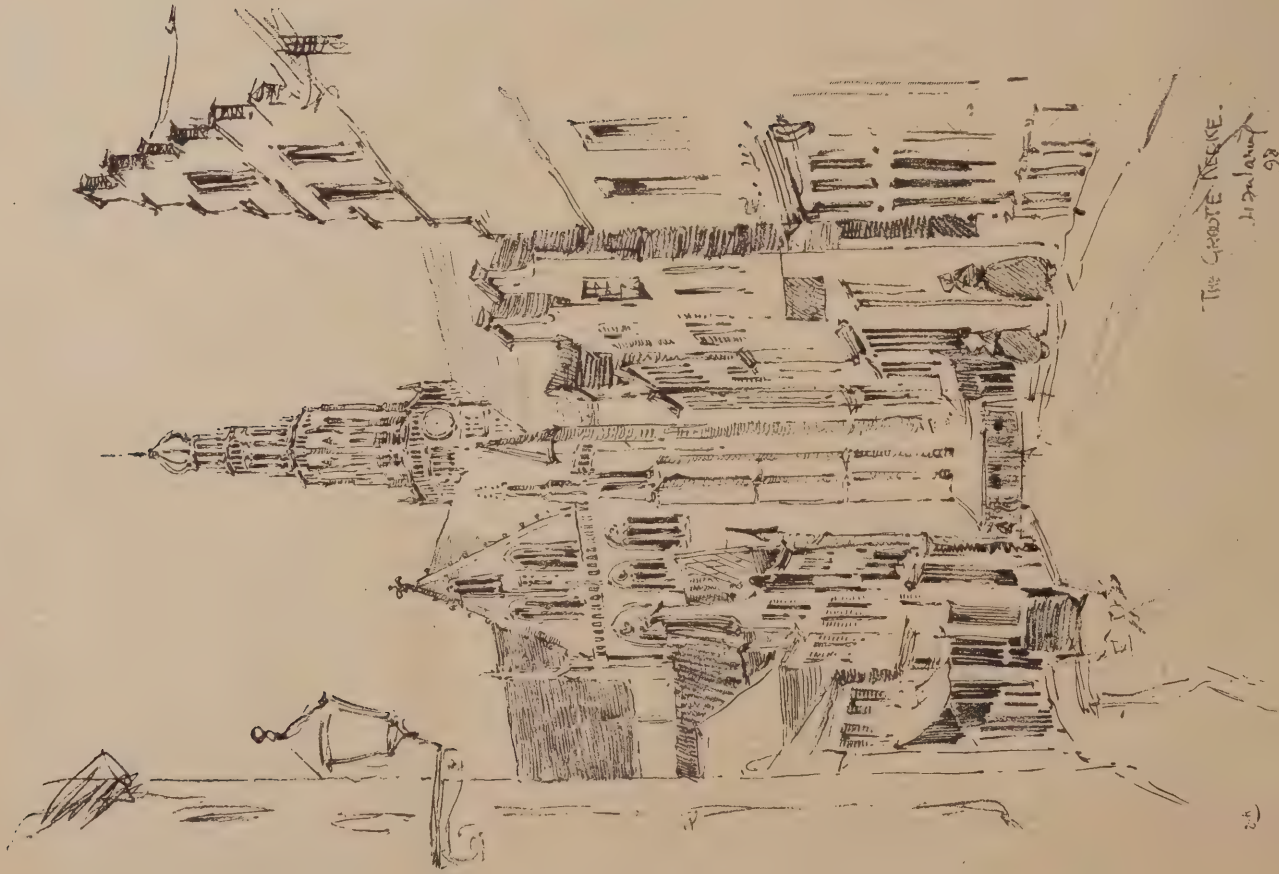
### School Board Economies.

WE referred some weeks ago to the "Conditions" of the competition organised by the Dartford School Board. It will be remembered that monstrous as the requirements of these "Conditions" were, would-be competitors had to pay a guinea per copy for them. The proposed schools were to cost about £14,000, but the total sum offered by way of premiums was £42, or less than one quarter the amount usually offered for designs of this value. We have now learned that thirty-six intending competitors tendered their guineas, for the "Conditions" in spite of the warning published in this and other journals. Our readers will observe that the amount thus received by the Board nearly equals what it proposes to pay away in premiums! It is true that the Board undertakes to return the guinea in each case where a *bona fide* design is submitted. In this instance, however, the terms of the conditions make such a monstrous imposition upon the competitors that a small percentage of them only could be expected to submit designs. The comparatively small number of thirty-six applicants is no doubt due to the conspicuous warnings published in the professional journals. But for these warnings there can be little doubt that many more would have applied for the conditions, so that the competitors would have paid the premiums out of their own pockets.



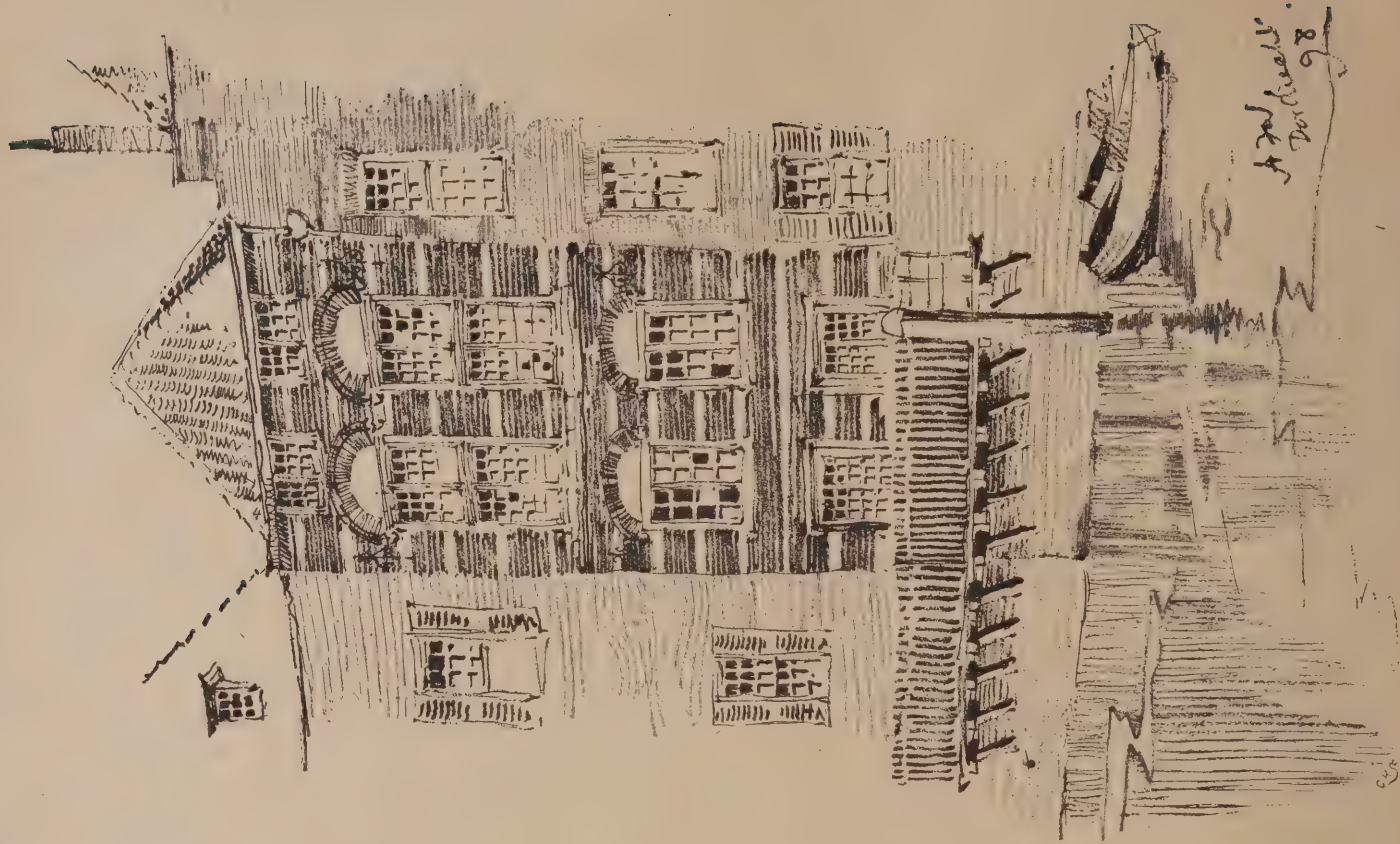






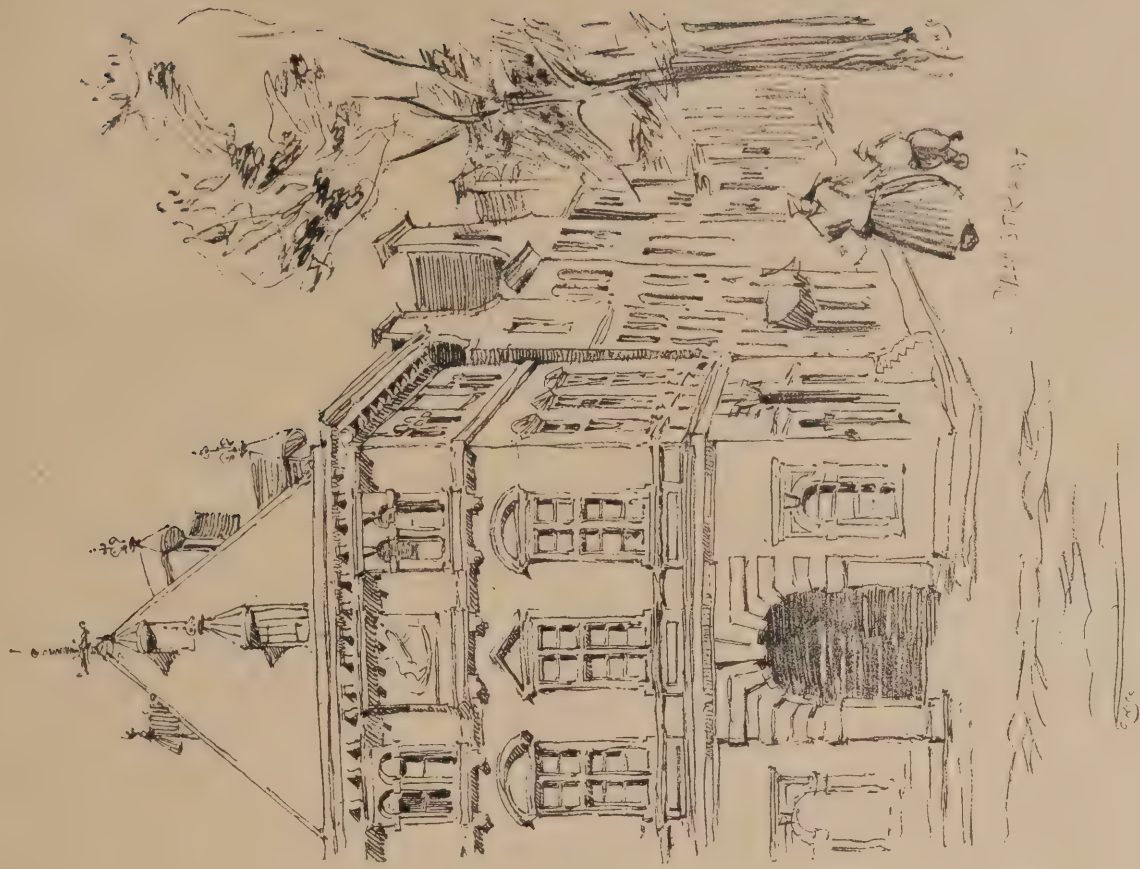
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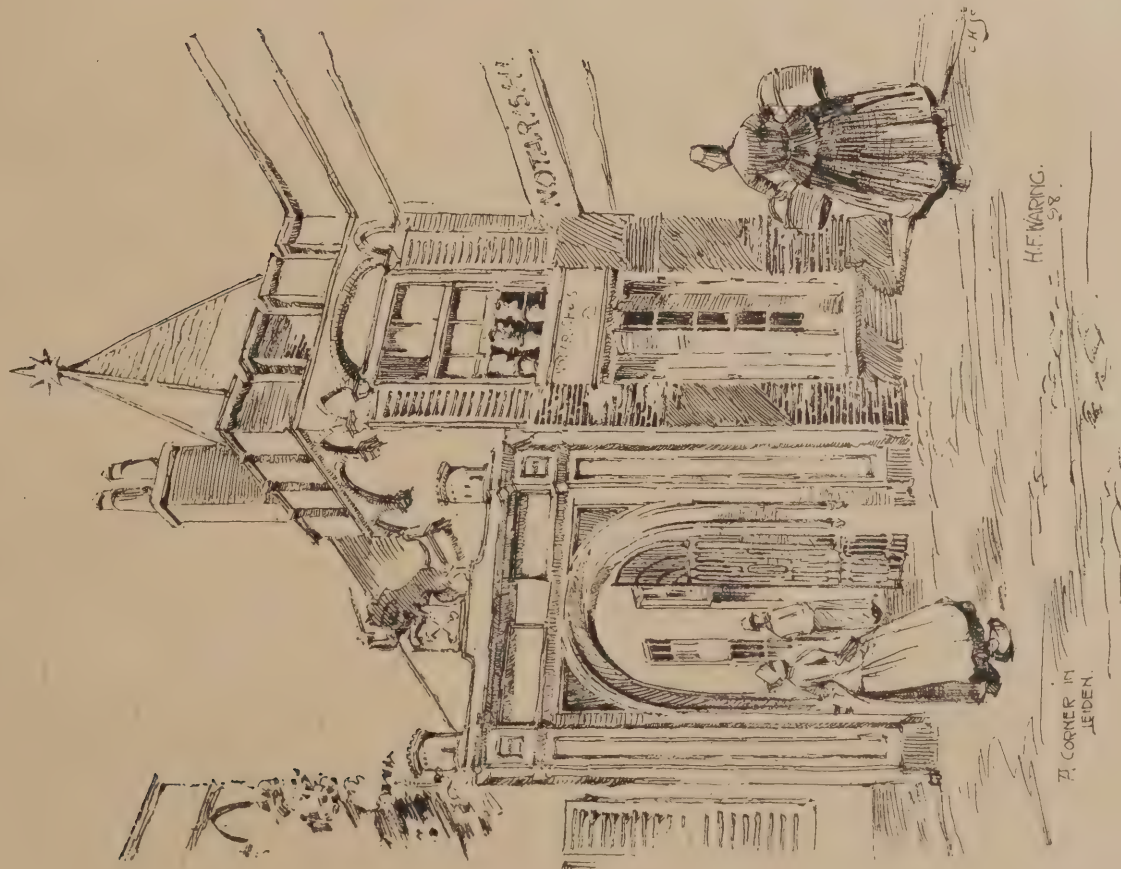


ON THE CANAL, DORDRECHT.





HAARLEM.



A CORNER IN LEIDEN

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## THROUGH HOLLAND.

BY H. F. WARING, ARCHITECTURAL ASSOCIATION TRAVELLING STUDENT, 1898.

**A**RRIVING as I did at the Hook of Holland one misty, chilly morning in June, my first impressions were not of the most cheerful description. A low, flat country, with here and there a stunted tree, was all that was visible; but as the mist gradually disappeared on either side of the river leading to Rotterdam, objects of interest to architect and artist alike began to show themselves. Schiedam, with the fine canal leading to it, was soon passed; this village, though picturesque in the extreme, does not boast of much in the way of buildings. Presently the river began to assume a busier aspect, small tugs rushed to and fro, whilst at the quays huge barges laden with timber awaited a convenient tide to get under way. Rotterdam is now seen standing out boldly in the grey morning, and we are soon at the wharf. With a rush which the 21st Lancers might have envied, the porters are upon us, climbing over the bulwarks in a truly heroic manner, seizing any article they can lay hands on, unless the owner of the same objects in a more forcible than polite manner. The tips they demand for their portage are extortionate in the extreme, and twice I had the equivalent of fourpence returned me as being an insufficient fee, which I promptly pocketed, much to the encouragement of bad language on the part of the aforesaid porter.

Rotterdam is undoubtedly a fine town, though most of its buildings are comparatively modern. The older portion of the city, Rotterdam proper, mentioned in 1272 for the first time as a town, lying upon the right bank of the Maas, near its confluence with the

Rotte, is certainly interesting to the student. Canals run parallel with and adjoining most of the roads, on the banks of which trees are planted, giving a decidedly pleasant appearance to the town, though the odours from the canals are not quite of so pleasing a nature.

The viaduct, connecting the Antwerp and Amsterdam lines carried across the town in 1870-77, is one mile long and a considerable triumph of engineering skill. It has a double line of rails and is supported by cast iron piles, between every two of which stands one of solid masonry. The average span of the arches is 50ft. The Church of St. Lawrence calls for attention. This dates from 1477, and is of brickwork, the choir stalls and some tombs inside are interesting, while a bronze screen separating the choir from the nave (1711-15) is good. The Groote Kerk, fifteenth century, is a large building, but not very beautiful; a view from the tower, however, amply repays one the climb. The picture gallery was unfortunately destroyed in 1869, and the collection there at the present time is uninteresting. Not the least pleasant feature here is the park on the outskirts of the town, where an excellent band plays in the evenings.

The Hague, about half an hour's train journey from Rotterdam, boasts only a few old buildings. As, however, this town is the Paris of Holland, it is not to be wondered at that more modern buildings have in many cases taken the place of the old. The Hague at one time was distinguished as being "the richest village in the world," but when Napoleon became King of Holland he converted it to the rank of city. Up to the commencement of the present century it neither returned members nor possessed a Corporation. I was fortunate in being here at the coronation festivities, for which many grand stands lined the streets; these were

rickety in the extreme; I do not know whether they were inspected by the town surveyor, but am sure they would never have been passed by our own County Council judging by the many stands that were condemned by them at our jubilee of last year.

The Groote Kerke, a late sixteenth century edifice, with a hexagonal tower, and the Town Hall built in 1565, with its interesting two side-façades, are well worth visiting, whilst the admirable picture gallery, containing amongst many other pictures the famous Rembrandt's "Lesson in Dissection," and Paul Potter's Bull, call for admiration.

A day's visit to Scheveningen from here repays one; the journey can be made by steam tram through a delightful country. This is the Brighton of Holland, the greater part being quite modern. A small fishing industry is still carried on, however, and many quaint costumes will be noticed.

Leiden, about ten miles away, is one of the oldest towns in Holland, and is certainly not one of the least beautiful or interesting. The town is placed in the midst of a beautiful country, which has all been reclaimed from the sea. It is interlaced throughout by innumerable artificial waterways, which languidly flow throughout the town. Picturesque old sixteenth-century houses border these, for the most part leaning at a considerable angle outwards, whilst gaily painted barges ply up and down the canals.

The siege of Leiden will ever be remembered as one of the most terrible in the annals of history. The inhabitants held out against the Spaniards for four months without murmuring. For seven weeks bread and every kind of wholesome provision had been exhausted. As an almost inevitable consequence, in a town disorganised and badly drained, pestilence followed in the wake of



famine. Not less than 6000 of the inhabitants were then carried off, and those who remained were worn out with fatigue and emaciation, and the mournful duty of burying their dead. At last the Prince of Orange determined to cut the dykes of the Maas and the Yssel, and thus bring relief to the town. The inundation did not produce the anticipated results. Although the whole country was submerged between Gouda Dort, Rotterdam, and Leiden, the water rose only a few feet, and the flotilla could not reach the gates of the town. The inhabitants could see the boats, and were driven frantic at the sight of relief so near to them and yet so far off. Maddened by disappointment and suffering, they approached the burgomaster and demanded bread or the surrender of the town.

The burgomaster had not the one, and indignantly refused the other, but offered his own body to be cut up in pieces for food if they chose it. This heroism brought the people back to their senses and devotion. Fortunately their misery was about to end. The wind, which for many weeks had been blowing from the N.E., changed to the N.W., and drove the tide up the river. It then shifted to the S., a violent storm arose, and the flood was driven upon the land with overwhelming force. The ramparts thrown up by the Spaniards were surrounded, and more than 1000 soldiers perished in the flood. The same tide which swept them away carried the flotilla of the Prince of Orange laden with provisions to the very gates of Leiden. And the town was saved. The deliverance took place on October 3rd, 1574, and the event may well be commemorated by the citizens as an evidence of Divine interposition in their favour. The wind at the end of three days changed again, and drove the water back from the walls of the town, thus perfecting the safety of both people and country.

There are at Leiden many interesting old public buildings as well as dwelling houses. Of the former the *Stadhuis* is perhaps the most noteworthy. This is a very fine example of Dutch Renaissance, having been erected in 1570. Stone is used throughout in its construction, the building itself being kept comparatively simple, whilst a large central gable and on either side a smaller one are highly ornamented. A very ornate external staircase leads to the main entrance on the first floor. Some very good carved wood panelling will be noticed in the interior, and an inscription here referring to the year's seige before mentioned reads when translated as follows. "When the black famine had brought death on nearly 6000 persons, then God the Lord repented of it, and gave us bread again as much as we could wish."

Upon an artificial elevation, in the centre of the city, rises a tower of unknown antiquity. By some it is considered to be of Roman origin, while by others it is regarded as the work of the Anglo-Saxon Hengist, raised to commemorate his conquest in England. This has been considerably restored, though in a somewhat unsatisfactory manner. A house near the tower bears an inscription to the effect that John Robinson, the leader of the first Puritan party, banished from England, lived, taught, and died here.

The Church of St. Peter, Leiden, erected in 1815, with double aisles, is the largest in the town. The lofty west tower unfortunately fell in 1512. This and the Church of Saint Pancras, a Gothic edifice of the fifteenth century, are perhaps the two most interesting buildings in the town. The latter is built on the site of an older edifice. Two curious pointed turrets running up the east and west façades, and projecting above the roof are curious, the space between these turrets being filled in by a large window of very delicate tracery.

I now decided to go to Haarlem. As it was a fine day I boarded one of the steam trams which run between most of the towns in Holland. However, it was for the last time, as, starting at 9 a.m., I did not arrive at Haarlem until 1.30, having taken four and a half hours to go a distance of sixteen miles. Had I not been greatly annoyed at losing time in this manner, it would have been ludicrous the way

the three cars were continually left stranded on the road, the engine leaving them, and either going into an adjoining shed for perhaps an hour at a time, or else disappearing on the horizon altogether.

Haarlem reached, however, delight again seizes the traveller. Surrounded by a forest through which the canals and paths wander, Haarlem is certainly a beautiful old town, and it is wonderful to think that years ago the site and surrounding country were under water. A vast lake was here, which gradually grew in extent until the sixteenth century, when the wind drove the waters forward and united them with those of several neighbouring lakes. For a time it was feared that North Holland would be turned into an island. As early as 1640 Leeghwater, a famous engineer, proposed the gigantic task of reclaiming it. He had already recovered at enormous expense, but with signal success, the Beemster Polder in North Holland, a tract of 18,000 acres. It was not until 1840 that the work of draining was actually undertaken. Twelve years were required to accomplish the task, and during that time it is estimated that a thousand million tons of water were pumped out, the works costing a million of money. The drainage is now carried on by three huge engines, constructed at Hayle Foundry, in Cornwall. It is said that the drainage of the lake has affected the annual rainfall, increased the temperature in summer and lowered it in winter to the extent of half a degree. Holland has to fight not only against the inroads of the sea, but against internal waters as well. It is impossible to over-estimate the nature and importance of engineering operations that are constantly going forward, or the amount of skill brought to bear on them. In some cases the waters are 20ft. above the level of the surrounding country. Inundation takes place about once in seven years. Haarlem, like Leiden, underwent a siege by the Spaniards in 1572, but, unlike Leiden, it fell before the enemy.

The visitor here will be struck with the clean, wide streets and fine old buildings; the most interesting building is perhaps the *Groote Kerke*. This is a huge structure, cruciform in plan, erected at the close of the fifteenth century, with a tower 260ft. high. It contains some good choir stalls and a sounding-board to the pulpit (1432). Opposite the principal façade of the *Groote Kerk* is the Town Hall, begun in the thirteenth century. This was originally a palace of the counts of Holland, but was remodelled in 1620 and 1630, when a wing was added. A museum here contains some excellent pictures by Franz Hals, which are well worth visiting. In the same square is the Meat Market, erected by Lieuen de Key in 1602, which is perhaps the most remarkable building of its kind in the country; the effect of the combination of red brick with the projecting stone is excellent. On taking the road to Amsterdam, on the borders of the town one of the old *Portes* is seen. This is a graceful building of red brick, with the usual stone dressings. It was restored in the sixteenth century.

(To be continued.)

**Children's Homes** are to be erected at Out Lane, Huddersfield, to accommodate twenty children.

**A set of five windows**, including the whole of the west windows of St. Cuthbert's Church, Durham, have been placed in position, and were dedicated last Sunday week.

**The Thames and Electricity.**—The project for utilising the Nile for the purpose of generating electricity for use in Cairo has directed attention to the possibility of making the Thames do similar service for London. The idea is that by the construction of water wheels or by the fixing of floating turbines at the various bridges sufficient power to light the whole of the metropolis might be obtained by the simple action of the tides. In order to bring the subject to a practical issue a motion will be submitted at an early meeting of the London County Council for the holding of an inquiry by experts under the auspices of the Rivers Committee of the Council.

## HUMOURS OF BUILDING.

### II.—A WARM MORNING.

BY BULKELEY CRESWELL.

**Characters:** John Bump: a despotic tallow boiler; Mr. Bates: a worn and worried architect; Bolter: a clerk of works; "Uncle" Walker: a country builder; Bill Todd: his foreman. Bricklayers, labourers, &c., &c.

**Scene:** BUMP's brand new country seat in course of construction, upon a hot July morning. Bricklayers on a scaffold, with trowels in their hands, dozing; in the foreground labourers with spades, ditto. The work is at a standstill. A great slumbrous silence reigns. It is half-past eleven.

BATES discovered entering on a visit of inspection. He perceives the state of affairs and is much annoyed. At his approach the trowels and spades spring into motion, and the work of building proceeds with great activity.

BATES (to BRICKLAYER): Is Mr. Walker on the building, or Mr. Bolter?

BRICKLAYER (veiled at his disturbed slumbers, shakes his head): Dunno.

BATES: You are not levelling up properly after each course here, and you should use more water.

BRICKLAYER: Oh, well.

BATES: Well, what?

BRICKLAYER (turning on him): What yourself; take and glue the bricks—I don't care.

BATES: My man you must do what you are told.

BRICKLAYER (sulkily): I'm not going to argue with no toffs; if yer want to talk to someone go and talk to my foreman.

(Enter BILL TODD, fretful with heat and dust and broken slumbers.)

BATES (to TODD): They want more water there.

TODD (aggressively): Well, why don't they ask for it then?

BATES: I really can't tell you.

(TODD signs labourer to fetch water.)

BATES (to TODD): Why have you got all these men screening out that broken plaster and dust?

TODD: They're a looking for my spectacles.

BATES: Your spectacles!

TODD: That's it. I lost 'em last week somewhere on the job, and they're bound to find 'em if they screen all the rubbish out.

BATES (indignantly): But they must keep to their work.

TODD (angrily): Well can't yer see they're a-working hard as iver they can work. (He stares at BATES with one hand thrown out in direction of workmen and then walks off grumbling.)

(BATES looks at his watch, annoyed by the absence of WALKER and BOLTER. He stands and examines part of the building.)

(BUMP wanders in examining the progress of his house; he does not see BATES until he walks into him backwards.)

BUMP: O, there you are, are you?

BATES (nettled): Good morning, Mr. Bump. (Moves a few steps away.)

BUMP: It's some time since I saw you here, isn't it, eh?

BATES (in a tone of affected sweetness): Do you know I'm afraid we're going to have a change in the weather. (Examines a wall.)

BUMP: Oh you are, are you? Well, perhaps you'll answer my question?

BATES (looking over his shoulder): Beg pardon?

BUMP (growing red): I said, perhaps you'll oblige me by answering my question.

BATES (in a tone of nice discrimination): No. I don't think you said that, Mr. Bump. I don't think you said "oblige."

BUMP (his anger growing): Whether I did or not, perhaps you'll be good enough to answer my question.

BATES (raising his eyebrows): Which question



BUMP (*beginning to dance with suppressed rage*): I say — now — now — now, look here, Mr. Architect, I've had enough of this.

BATES (*quietly*): I've had too much.

BUMP (*with emphasis*): I say, you're not doing what I'm a-paying you to do. You're not acting up to my expectations.

BATES: I never accepted responsibility for your expectations.

BUMP (*sharply*): Eh? I asked for pretty architecture—didn't I ask you to do me pretty architecture?

BATES: Probably (*staring in front of him*).

BUMP: And do you mean to say you call that "pretty architecture"?

BATES (*looking at his watch*): Certainly not, the term is only used by amateurs.

BUMP: Oh! Didn't I tell you I wanted pink bricks.

BATES: I shouldn't be surprised.

BUMP: And do you call that a pink brick?

BATES: Of course not. I call it by its right name.

BUMP: Eh? Oh. Oh, you do, do you. Well look a here Mr. Architect—or whatever you are—I'd just have you to understand what I'm a paying you for. It's no good your telling me this here's pretty architecture. I tell you it AIN'T. (*Shouting: BATES assumes an expression of pain, and moves a step away, his hand over his ear.*) As if I didn't know what pretty architecture was. Didn't my father have the front of the tallow works pulled down and built up again and made pretty by the best architect in Wormwood Hollow, and pink bricks and little sausages all over, and his face done on blue tiles made a purpose, and flower pots too—and—and—didn't he?

BATES (*sighing and raising one hand*): I really can't say, Mr. Bump. I know very little of the history of tallow.

BUMP (*breathless, and rather puzzled*): Eh? Don't know the history of tallow. What do you mean?

BATES (*facing him for the first time, and tapping him on the chest with one finger*): I'll tell you what I mean, Mr. Bump, but once and for all. Please remember that. You should know that if I have my duty to you, I have also my duty towards my art.

BUMP (*breathless*): Oh—really—indeed.

BATES: It may surprise you, but no one can acquire taste in architecture by means of tallow.

BUMP: Indeed—Oh!

BATES: Yes. And it may astonish you, but if you were to live and boil tallow for a thousand years, it would still be a great impertinence in you to criticise my work.

BUMP: Oh! And may I—

BATES (*taking him up*): And I may remind you that you don't contradict your lawyer, and you don't contradict your doctor, and, Mr. Bump, you shall not contradict me.

(WALKER and BOLTER enter shame-faced, WALKER surreptitiously wiping his mouth, BOLTER concealing a pipe.)

BUMP: Oh!

BATES: Yes, and I mean it (*turns towards WALKER and BOLTER*). Good morning. (*He turns his back and seems to inspect an archway.*)

(Bump stares and frowns and then marches off. Walker and Bolter stand together uneasily, and nudge each other)

WALKER: } (*speaking* } Good morning, nice morning, sir.  
BOLTER: } (*together*) } Morning, morning, expecting you sir.

BATES (*still examining arch and after a pause*): I hope you don't find your duties too great a strain on your attention.

WALKER: } (*as before*) } Oh no, sir, we don't.  
BOLTER: } } We're used to it, sir.  
} } Oh no, no, we manage to keep up all right,

(Brushes away some crumbs.)

BATES (*turning*): Well, perhaps you will be good enough to see that the bricklayers flush up after—

BOLTER (*breaking in*): That what I'm always telling 'em, sir.

WALKER (*loudly*): Now I never heard the like o' that—all the years I've been a builder, there never was a word about flushing up; if my father—

BATES (*beside himself with accumulated annoyance*): You'll take my instructions, please.

WALKER: Sir, I have only to say—

BUMP (*rushing up and in a loud high-pitched tone of complaint*): Now look here, they haven't put them china plates up over the front entrance.

BATES (*breaking out*): Oh damn your china plates. (*Strides off.*)

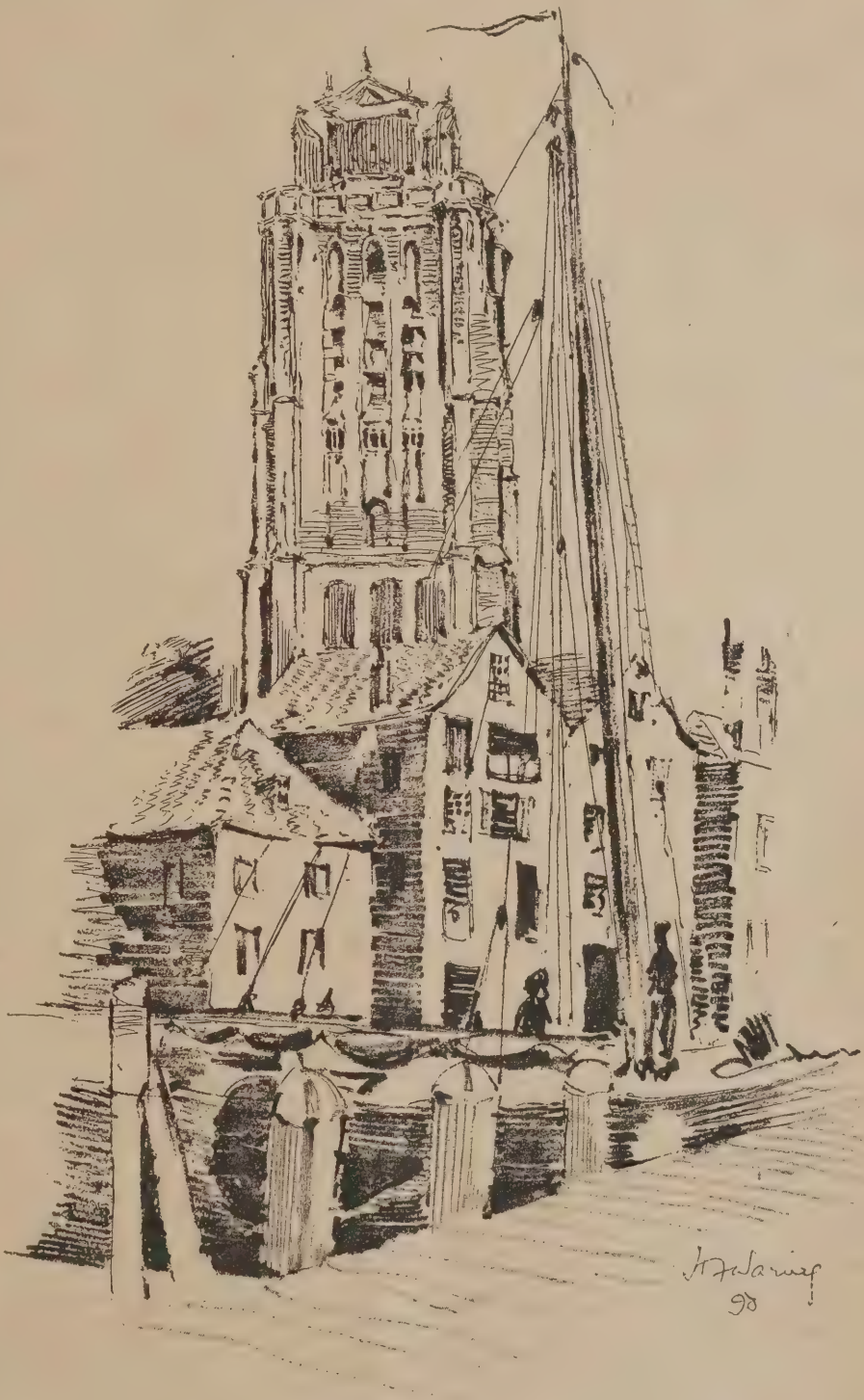
A Fountain at Catford, erected by the inhabitants of Southend village, Catford, in commemoration of the sixtieth year of Her

## COLOUR DECORATION.

BY COLE A. ADAMS.

AT the meeting of the Architectural Association last Friday, Mr. G. H. Fellowes Prynne presided. Mr. Cole A. Adams read a paper on "Colour Decoration," of which the following is the substance:—

My discourse to-night is addressed to students, and I shall attempt no dissertation upon the higher flights that have to be ascended in treating so voluminous a subject as Colour Decoration. I propose to speak of some of the various methods adopted in colour decoration and to offer a few suggestions which may be of use in your study of



THE GROOTE KERKE, DORDRECHT. DRAWN BY H. F. WARING.

Majesty's reign, has just been opened. The fountain, situate at the junction of Bromley Road and Beckenham Lane, Southend, has cost £120. It is also proposed to erect a water trough for horses.

the subject. In our cities and manufacturing towns the architect, in attempting to add the charm of colour to his building, has to encounter the smoke demon, who, no sooner than the building is finished, sets to work to



deface it as far as he is able. At present—and I fear so long as he is permitted to work his wicked will—no remedy is possible. Perhaps in the future, when we shall see more use made of electricity, or some means are found to compel manufacturers effectually to consume their own smoke, and householders also, then, when this demon is chained, we may see our buildings decorated with a colour of a more cheerful tone than they now possess.

#### Majolica and Mosaic.

The trials which have been made of glazed earthenware or majolica for both outside and inside architectural treatment are hardly, I think, quite satisfactory. It is an excellent material where cleanliness is a sanitary necessity, but the glazed surface is fatal to that repose that colour when applied to a building seems to demand. It gives a restless appearance which is disturbing to the harmony of colour; and even this material our enemy, the smoke fiend, does not respect. The light falling on the mouldings and ornaments is a disturbing element, and distorts them. It gives a better appearance, and is more decorative if the material presents a smooth, non-reflecting surface, and has only a dull glaze. You do not varnish decoration which you apply in oil colour, for the reason that you would lose that quality of flatness and repose which is so important. Detached objects executed in a glazed earthenware are properly so treated; it is when it is applied to large surfaces it becomes distracting. These remarks apply, but in a lesser degree, to polished marble, which, unless introduced with great discrimination, is hardly satisfactory when covering large surfaces. Mosaic should, I think, be always employed on a concave or convex surface; it is hardly ever pleasing on a flat surface, hence its unsuitability in reredoses, as generally applied.

#### Church Decoration.

And here I am tempted to ask how long the custodians of our cathedrals and churches and the worshippers in them, will be content with the sculpture and painting that is generally thought good enough? There are not wanting instances where one sees work which it is a pleasure to find, but such instances are rare. Buildings erected by our best architects contain too often sculpture and painting executed by incompetent and nameless artists. Sedding saw this need for calling on accomplished artists to help him in his work, and all true architects would wish it, instead of having to be content with the poor, lifeless, mechanical productions of advertising firms one generally sees. When we go abroad we are shown some masterpiece of the sculptor's or painter's Art done at a time when the highest efforts were alone thought worthy of a place in the sanctuary; and yet at the present time men are richer than they ever were, and could the better afford to give. The monuments to the dead in our cathedrals and churches are frequently works of worth and beauty, but we want equally good work dedicated to the service of the living God we worship. Mention must in fairness be made of the great progress made in stained glass; much of it is admirable. Perhaps it will not be long before the educated and wealthy will call in the aid of artists who will give us works that shall be worthy of the buildings they are placed in, and worthy of the artists who executed them. There can be no better medium of perpetuating their fame.

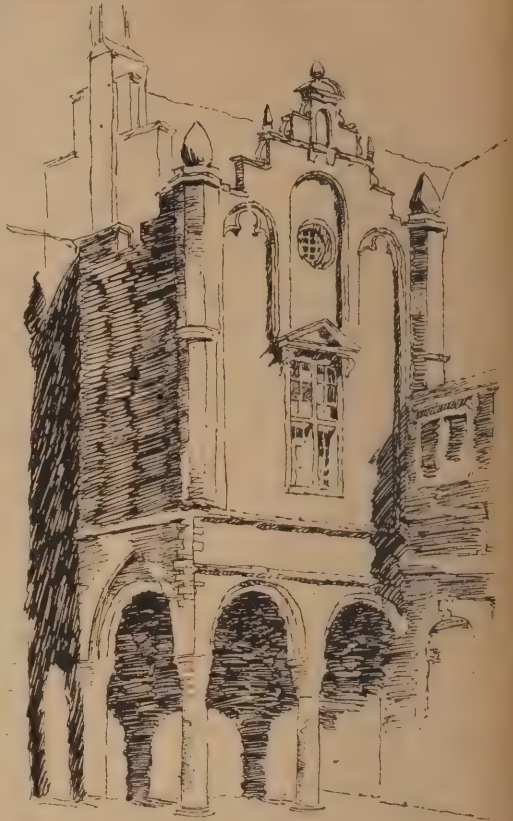
#### A New Decorative Process.

In a house in the north, where it has been my privilege to stay many times, built for the most part by a man who comes from an artistic race, and who himself is artistic in every sense, is a mode of decoration which, as far as I know, is original, and certainly it is most delightful. The walls and ceilings were prepared in the usual way. They were then covered with a thick coat of oil and whitelead, made the consistency of pudding, and laid upon the walls and ceilings with a trowel. The next process depended upon what the nature of the design was to be. Supposing it was the ceiling to be treated, as a vine trailing over the whole sur-

face; the artist with his thumb boldly draws the leading lines of the design, and then with the end of an ordinary paint brush draws the stalk, leaves, and fruit. Those parts which he wishes to emphasise he models in the material—such as the grapes, which are raised in relief; in fact, with the coating which he has been careful not to lay on to a uniform thickness, he is able to produce effects, whilst moist, as his fancy dictates. If he wants a more or less geometrical pattern on the walls he takes a comb, and by eye draws in patterns such as you may see done on the outside plaster of old cottages in Suffolk and elsewhere, and also similar to some Japanese patterns with which you are all familiar. Again, on the surface thus prepared, he puts a powdering here and there of small patterns. This coat, which is capable of taking any kind of design the artist may wish and his fancy dictate, is allowed to dry and harden. It is then painted the general colour it is to be, and the artist has various mixings at hand of the same colour, and blends them as he goes. Those parts of the design to be gilded are so done and the various colours applied and allowed to dry. Finally the work is dull-varnished and has bronze powder mixed with the varnish, which gives a kind of sheen to the whole. The bright parts in gold are toned down, and the colours blended one with the other. This, as far as I could gather, is the process. It is unlike anything with which I am acquainted, and it has great possibilities. It gives somewhat the charm that a picture does in which the colour is laid on unsparsingly with brush and palette knife. The burred edges of the patterns, flowers, or fruit raised in the process reflect light. The colours running one into the other satisfy the eye by their variety, and the dull old gold effects, mingling again with the bronzes, give a richness and *tout ensemble* which is charming. This work, however, must be done by artists. Executed by the ordinary decorators it would be intolerable. One striking effect in this house was suggested by the patron; he saw a ceiling after it had been floated with the oil and white lead with the trowel marks left. With a happy inspiration, he told the man to leave it so, and paint it with a deep copper bronze. The result is a most happy one—it has the same charm that beaten copper produces.

#### The Architect as Decorator.

There may be some among you with an eye and love for colour and ornament who might do much worse than take up this branch of Architecture as your calling. With the advantages you enjoy of learning your profession, it would be a great gain to you, and you would bring to bear a knowledge of Architecture and building construction which would be of infinite use. The want of such acquaintance with this Art accounts for the failure one so often sees in modern decoration. If we possessed artists with architectural knowledge, who made it their calling to decorate buildings, it would be a great public good, and the public need educating in the matter of good taste. Growing up around us are town halls, picture galleries, free libraries, swimming baths, &c. Do not these offer scope for the artist? There are hundreds of such buildings lately come into existence waiting the hand of the artist. For a moderate sum, depending largely, of course, upon the building and the class of decoration, they might be made more attractive and interesting. Now, what happens? The powers that be call in the local painter and decorator; he sets to work and—paints it. Knowing very little of the principles of decoration, absolutely nothing about Architecture, he, of course, cannot apply his decoration architecturally, and as a result, he not only wrongs the building and the architect who designed it, but commits the further crime of offending against good taste. Now, for comparatively a few guineas paid to an architect, who made such work his speciality, or to a skilled decorative artist, the same local painter and decorator might be led to turn out a work which would at once appeal to educated taste and give the public decoration



GABLE AT LEIDEN. DRAWN BY H. F. WARING.

of which they might be proud. I believe if authorities having the care of such buildings knew where they could obtain competent advice and skill in carrying out this class of work, they would avail themselves of it. There is abroad everywhere a quickening of interest in public life, and the cities and towns are vying with one another in providing buildings dedicated to the use of the public, which augurs well; and, as time goes on, we may look for a further extension of this good—as good it is—tending to break down class prejudices, and bring peer and peasant together with the happiest results; in good time much may be done to render the lives and homes of the poor happier and better by this process of levelling up. To this end the decorative artist may employ his talent and do good by creating beautiful work that must have a refining influence for good. Few towns there are of any importance that do not tempt our great singers and actors to visit them, few that do not possess some work of an architect of eminence, and it may be that at no distant future, few will be said not to possess some work of Art of a great painter or sculptor in a richly decorated building. Is it not worth working for to become one of them who shall add to the fame of the town who employs him, by his skill in colour decoration, instead of leaving such work to be ignorantly and vulgarly carried out?

#### How to Gain Experience.

Experience in practical decoration may be gained in a way that is probably within the reach of most of you. In the parish in which you reside there will be a school or a parish room, and the parson would doubtless be glad of anyone who could be found to volunteer to decorate it. This would give you the opportunity of doing experimental work which would be excellent training, and, at the same time, you would be doing practical good to others. But how to set about it! The Parson may not unreasonably object to having his building made use of for experiments. You must first qualify yourselves by learning the handicraft to convince him you know something about the Art. I think one of the best ways to study decoration is to sit down before the object you are engaged upon



and try and grasp the notion or leading idea of the artist; how he has treated it and how worked it out; what leading colour or colours he has chosen; in short, its leading characteristics. Having taken in the scheme or design, I think the next best thing is—supposing it to be a ceiling, for instance—to make a plan and sections of it, then select that portion which will illustrate how the design or pattern will repeat. These drawings you should sketch as neatly and with as little detail as will express the thing you are at work upon, then put on a few leading dimensions; note the distance from the eye where the decoration is most effective, the distance from the eye, the style, probable or approximate date, place, and, in fact, each and everything that occurs to you as worth noting. Having made these drawings, which may be more or less elaborated according to what you are engaged upon, you may now proceed to detail the work to a larger scale, and draw with the greatest care the ornament. A number or letter referring to where the part is should be noted on the plan or section, so that the details may agree with the drawings. When you have got your details sufficiently forward in pencil you may then proceed to colour them, and this will test your eye for colour. If you have not got your colours with you, or are pressed for time, a simple plan is to put on the drawing a schedule of colours, and number them thus—red 1, blue 2, yellow 3, and so on; or you may elect to adopt the heraldic method. Either of these ways will be of use in keeping you in mind of the scheme of colour, and then you can, at your leisure, colour in your drawing; but the study will be of most use which is painted on the spot. It all depends upon what you are sketching, but where the detail would work out very small and not large enough to explain the design, that part should be drawn to a larger scale. As you proceed you will insensibly learn what best shows and illustrates the subject upon which you are engaged.

After some remarks on the importance of studying nature and acquiring habits of close observation, Mr. Adams went on to speak of

#### Perspective Drawing.

You will find it useful, he said, to acquire the art of sketching in perspective. You can in less space show so much more of your subject, and if you can readily and easily sketch in perspective, it conveys the intention much better to the lay mind. It has, besides, a commercial value, as you may convince a client the more readily if you can show him how a work will look when executed. At the same time, do not let this kind of sketching take too great a hold upon you to the neglect of careful and figured details drawn either by eye or to scale. Drawing in perspective becomes so fascinating that the temptation is to make a picture, and you will learn your lesson better by a hard matter of fact diagram. In making studies of ornament in monochrome, it is most useful training to do so with a brush. You cannot get anything like the freedom or effect by using pencil or pen, and you will come nearer to the Greek and the Japanese if you copy their painting direct with a brush. With a little practice you will find no great difficulty; besides, it is excellent training, and it will let you into the secret of how they produced their effects and why their ornament takes certain forms.

#### Greek Ornament.

If you wish to study the ornament as practised by the ancient Greeks, go to the British Museum, make your way to the vase-rooms, and you will see how, by the employment of simple yet lovely forms, they have produced designs in endless variety and mostly with the use of a single pigment. We frequently hear a great deal about the accuracy displayed by the Greeks in their treatment of ornament. Many of the examples which have come down to us are anything but well drawn, and all that I have studied show an absence of mechanical accuracy, being obviously executed by the eye and hand only. It is the fashion in employing Greek ornament in decoration of all kinds to do so with geometrical precision, with the

result that it is all "Faultily faultless, icily regular, splendidly null." It does not pulsate with life, and to employ Greek ornament thus is to miss half its beauty, which does not consist in perfect accuracy of parts, but in that charm which the trained eye and hand alone can give to all work, and which is lost in mechanical execution.

In the repetition of ornament, where the same pattern is employed over and over again, stencil plates are generally used. The whole art of stencil-plate cutting has a rather narrow margin of limitation, and work carried out with the extensive use of stencilling is

secured together at all available points, place on a sheet of plate-glass, cut out the parts through the several sheets with a sharp knife. Then, when you have cut out the pattern, liberate the sheets and insert between two of them a network of very fine wire, which may be made taut by attaching it to a frame (a trifle larger than the paper stencil plate) of stout wire. The two plates, being exactly adjusted, should then be pasted together, and when dry give another coat of knotting. It may be objected that the wire which takes the place of the "ties" will be objectionable and will show in the colour, but with skill in manipula-



A STREET IN DORDRECHT. DRAWN BY H. F. WARING. (See page 35.)

anything but pleasing. It has a thin, starved, stiff, mechanical appearance. The Japanese employ stencil-plates for the decoration of their textile fabrics, and produce most artistic effects; whether they have any like method in use for wall or ceiling decoration I do not know, but I venture to throw out a suggestion for adapting the principle employed by them, and applying it in a modified sense to our use. Let the design to be employed in repetition be drawn on fairly stout cartridge paper, and it may be designed without any care for the "ties" which it should be the object to dispense with so that the plate shall leave the stencil brush finished. Then give the paper a coating each side of patent knotting, and with three or more similarly prepared blank sheets

tion it may be made, if you will, to become part of the design. I do not think it will be any detriment, and at all events the plan will admit of a much wider, more artistic, and more extensive use of stencilling. By having on your palette several mixings of the colour of varying tints, and two or more stencil brushes in use, it is very easy to blend the colours of the stencilling in executing it, and to remove the harsh mechanical appearance one so often sees. By a series of plates effects can be produced, on the same principle as wall-papers or printing in colours is done, and much of the objection to stencilling will vanish by adopting this method of the Japanese. The difficulties that beset a decorative artist are very great, and he must be ever studying



so as to store his brain and keep abreast of the times. I think a student can hardly do better than commence his studies of decoration of the different styles with copying from the decoration of savage tribes, of which the British Museum and most museums contain a goodly collection. I advise this as affording illustrations of what the untutored man does in ornament and colour, and there is a marked likeness in the early efforts of different nations or tribes; lines, circles, dots, zig-zags, herring-bone, and the employment of the primaries of colour. Then the styles should be taken, commencing with the Egyptian as the earliest. Let me suggest a visit to the Crystal Palace at Sydenham, where an object lesson may be learnt from the courts decorated in the different styles. Unfortunately in this country we have but few examples of ancient decorated buildings to study from, and have to be content with the fragments in our museums and the various objects to be found there. Still, one must take things as they are and be content; but however beautiful the various fragments are, they have not the teaching that applied decoration to a building possesses; to obtain this you will have to go abroad and study the style you wish to become acquainted with in its own home, with all the surroundings which so influence the art. Much and most useful information is to be gathered from the splendid works which have been published, and which you may see at the museums and in the library of the Institute and Architectural Association. They are magnificently illustrated, but the colours can only faintly show the effect that the building produces under the ever-varying light and shade. As it is hardly possible to study all the styles in the land where they have had their birth, you must study from those specimens which we possess and from books.

(To be continued.)

## A FORGOTTEN QUARTER OF PARIS.

BY JOHN C. PAGET.

THE old Feudal Architecture of France was merged in the Renaissance by the work of the times of Francis I.; both systems had for their most familiar feature prominent—or in the case of towers conical—roofs. The chateaux of his reign are proverbial for beauty, and are seen at their grandest in Fontainebleau and on the banks of the Loire. But the reign of Henry IV.—coincident with the later Elizabethan and early Jacobean work in England—witnessed the triumph of Italian ideas of building; order and symmetry were more considered than picturesqueness; the sparkling style of Lescot and De l'Orme disappeared: one feature alone remained from the past, it was and is ineradicable from French building art—the high-pitched roof.

If not so beautiful as their predecessors, there is much that is dignified in the buildings of "Henri Quatre's" period. Three materials were used; the body of the house in red brick, usually white-pointed, is broken by high pilasters in stone; the windows are lofty casements, topped by small pediments; the roofs are of slate, sometimes dark, sometimes of greenish hue, high pitched with only a few bold dormers; lead is used for ornaments, whilst masks and caryatides break up monotony; the doorways are often covered with a large hooded pediment; under it the tympanum is richly carved with heraldic shields, trophies, and sculptured figures.

Some of the best of these designs may be studied in a quarter of Paris long since deserted by fashion, the Marais. Its centre is the Place des Vosges. Deserted in the eighteenth century for the Faubourg St. Germain, as that in its turn was for the new quarter built by Baron Haussmann, it was nevertheless for many years the Court suburb of the capital; Henry IV. suggested its formation; his great minister Sully supervised the

scheme, and the Huguenot architect Du Cerceau was responsible for the design. In this fine old square we see one of the first attempts at laying out a city with open spaces on a symmetrical plan; a precedent never afterwards lost sight of in Paris.

The square occupies the site of the historic Palais des Tournelles, so called from its innumerable turrets and bartisans; the houses are separate residences, and are slightly varied, but bear the impress of one design; they are in three stories, the lowest being open to the street and arcaded, forming a promenade constantly alluded to by old dramatists as the scene of their comedies. The high roofs are simple, but not yet of the form to which Mansart gave his name; here and there they rise into a pavilion, and under one of these on the north side the King had intended to live himself when his career was cut short by the dagger of Ravallac. No. 21 was afterwards occupied by Richelieu.

The neighbourhood a few years ago abounded in town houses of old French families, for the most part deserted by their owners, the basements turned into shops, the upper floors let as *appartements*, the French equivalent for "flats;" each was known as the "hotel" (the word is used for palace or private residence) of a particular family. Every year that passes sees some local change, some feature removed, some mansion pulled down, but a certain number remain, and though no longer maintained in splendour, are extremely characteristic specimens of seventeenth century Architecture.

At 143 in the Rue St. Antoine is the Hotel de Sully, built for Maximilian de Béthune, Duc de Sully, by Du Cerceau. The front is richly decorated with pilasters, hooded pediments, and masks; within is a courtyard—the system of building thus has never died out in France. Each side of the court is sculptured with figures representing one of the Seasons, with armour, foliage, and masks; the French are singularly conservative in their arts, and masks are features rarely absent from a design. Wherever ironwork is introduced in windows or balconies it is strong, graceful, and flowing, and it may be noted that the details in iron seen in the new boulevards are often exact reproductions of the designs of the seventeenth century.

The roof is broken by large dormers, with curved pediments; the interior still retains a fine staircase and a "great room" or "salon" on the first floor; in the last century the mansion was occupied by another minister, Turgot, shortly before the Revolution.

At the corner of the Rue des Francs-Bourgeois stands the Hotel Carnavalet. Originally designed by Lescot and Bullant, it was modified by an architect whose name is a household word in France, the elder Mansart; here we may trace the beginnings of that system, which his nephew completed, of raising roofs into high conspicuous masses but truncated; his name slightly altered into *mansarde* is a synonym for a garret or any room under the roof. A family likeness may be said to run through these designs; the pedimented windows, the pilasters, the carved masks, the wreaths, arms, and shields appear in all, though differently combined, and the three materials are the same; red brick, stone of the light creamy grey, which in those days was quarried from Montmartre; and slate. The house will always be famous as the abode, from 1677 to 1698, of Madame de Sevigné; it was here that she wrote many of her celebrated letters.

The Hotel de Beauvais is notable for its front decorated with heads of lions and rams, the latter a punning allusion to Catherine Bellier, wife of Pierre de Beauvais, the builder. The courtyard is elliptical instead of rectangular, and shows originality of design; the growing neo-classicism of taste is evidenced in the vestibule, whose Doric columns sustain trophies; the staircase, flanked by Corinthian columns, is adorned with bas reliefs, and has an elaborate balustrade. From a window on the first floor, or *belle étage*, Anne of Austria witnessed the return of her son, Louis XIV., with his Spanish bride the Infanta Maria Theresa.

The Hotel de la Force has been pulled down.

It had terrible memories. Built for the Duc de la Force, it had several courts, and was so large that it was ultimately bought by the Government for a prison, and during the Revolution it was there that some of the worst of the "massacres of September" 1792 took place.

The Hotel de Lamoignon survives, and is remarkable for its complete system of very large double Corinthian pilasters admirably applied, especially at the angles, both salient and re-entering; though faded it is still grand.

Behind the eastern side of the Palace des Vosges runs the Rue des Tournelles; in it the house of Ninon de l'Enclos may still be seen with its quasi-classic vestibule decorated with masks and caryatides, boudoir with painted ceiling, and great balustraded staircase.

No city has been more completely transformed in our time than the French capital, but the building art of France, taken as a whole, has changed less than that of any other country. It remains to be seen whether its leading characteristics will survive the creation of structures of enormous height destined soon to become general in modern cities.

## THE NEW RAILWAY TO LONDON.

MR. RITCHIE, President of the Board of Trade, has consented to open the Great Central Railway Company's new line to London. The date has not yet been absolutely fixed, but it will be early in March, probably during the first week. Special trains, containing invited guests, will be run from the principal towns of the Great Central Railway Company's service, including Manchester, Sheffield, and Lincoln, and luncheon will be served in London, at which Mr. Ritchie will be present. Here the formal ceremony will take place. The new line is of great commercial importance. It will open out new districts in the centre of England, and is destined to play an important part in fostering the mining industry of those regions. It will not provide a shorter route to London from Manchester than those already in existence, but it is the intention of the company to organise a service which shall cover the distance in the regulation time of four hours and a quarter. The ruling gradient is the small one of one in 176, and the curves are on the 60 chains radius. The line, therefore, is admirably adapted for the fastest speeds. The rails throughout are weighted at 86lb. a yard, and are "keyed" on the outside, in accordance with the most modern engineering devices. All the stations, except two, are on the island plan, an arrangement which will allow the lines to be doubled, when the traffic demands the extension, without the removal of a solitary brick of existing stations. The bridges, too, are constructed to allow of the doubling of the lines. The London terminus is in Marylebone Road. On the day the line is opened there will only be two lines available for use. The remainder of the five lines running into the station will be covered temporarily with a substantially-built platform, and partially enclosed in order to make, for the time being, a large hall, where the opening ceremony, to be presided over by Mr. Ritchie, will take place. Nearly all the internal fittings of the station will be in their place in a few days, and booking offices, waiting-rooms, bookstall, and all the *etceteras* appertaining to a modern railway station will be completed ready for occupation by the staff of officials. The offices for the goods staff are in a very incomplete condition. The roof is not yet on the large building which is being erected to accommodate them. The immense warehouse at the main line end of the goods yard is, however, being rapidly brought to completion. A few weeks ago only half the building had been erected, but during the last month the ironwork required has been delivered at a very rapid rate, and consequently the work has gone on with extraordinary speed, so that in a short time the roof will be on, and the work of putting in the flooring can be commenced.



# R. I. B. A.

## PUBLIC LIBRARIES.

AT the meeting of the Royal Institute of British Architects last Monday, Professor Aitchison, R.A., presided. The subject for discussion was "Public Libraries," and two papers were read, one from the architect's point of view, by Mr. J. M. Brydon, F.R.I.B.A., the other from the librarian's point of view, by Mr. F. J. Burgoyne. Mr. Brydon explained that his object was to show, with as full illustrations as possible, something of what had been recently done in library building, so that one may learn what to follow in the future. A suitable site is of primary importance. It should be central and prominent, yet quiet; ample in area to allow for future extension; have a good light all round, and be dry. As regards the building, the free and open system of the ordinary popular library—i.e., reference and loan, combined with reading rooms—rendered proper supervision essential, and as libraries are usually understaffed, the arrangements of the plan must be concentrated, so as to enable the officials to supervise at a glance all the rooms to which the public have access.

### An Ideal Plan

is to place all the public rooms on one floor. Where this cannot be done, the rooms to which most frequent and rapid access is required should be placed on the ground floor, and those less frequented on an upper floor. The administrative portion of the library, such as the book stores, the librarian's office, and the workrooms for the staff, must be conveniently placed for the service of the department to which they are more particularly attached. The public rooms should be lofty, well-lighted, and thoroughly ventilated. The planning of a public library is not, however, a complicated problem. The requirements are comparatively few and simple, and lend themselves to a stately and architectural system of design from which some striking effects almost necessarily follow. It must be endowed with a fitting dignity both in plan and elevation. The reading rooms, being large, give ample scope for the designer's knowledge of proportion. They should possess that quiet dignity of effect which can only be obtained by good proportion and restraint in design. Respecting

### The Lending Department

the author considered that an architectural opportunity had been missed in many recent English libraries. Instead of being simply a book store, with a space cut off for the public, the delivery room might be treated as a hall by itself, as in some of the American libraries notably at Boston. There the delivery room is 64ft. long by 33ft. wide, and 20ft. high, and is decorated in the most sumptuous manner. Adjoining it is the stack room, to all parts of which application slips are sent through pneumatic tubes. The books come back to the alcove by means of a little electric railway with wire basket carriages. The delivery room at the

### Edinburgh Public Library

is modelled on the telling-room of a Scotch bank. The central space is devoted to the public, with counters round three sides, and alcoves behind them for the storage of books. This arrangement gives scope for, and is treated with, considerable architectural effect, a handsome hall being the result. The public library of the future will be the centre of culture and enlightenment of the district in which it is placed, and will wield an influence which must ever become wider and stronger. The building should be of such a character as to assist this influence. The suburban villa type with its useless turrets and bay windows should be altogether discarded—in short, the building should be endowed with that distinction of style and nobility of design which will render it an enjoyment and inspiration to all who hope for the growth of a living interest in Architecture as a fine art. Having briefly referred to the arrangement of rooms in

libraries recently erected in the United Kingdom, plans of all of which were shown, the author turned to the great American libraries, describing in more or less detail the buildings, plan, and notable features of the Congressional Library at Washington, of which an interesting historical sketch was given, the Public Library at Boston, the Columbia University Library, New York, and the Public Library about to be erected in New York. In the

### Washington Library

the American Government had commissioned American sculptors and painters—some fifty in all—to decorate broadly and thoroughly one of its great national monuments. Staircase, hall, and rotunda, or reading-room, are a blaze of rich marbles and decoration. In the rotunda, the columns and pilasters of the piers carrying the dome are of red Numidian marble resting on pedestals of dark purple Tennessee marble, their capitals being gilded. The screens between the piers are of yellow marble, and the portrait statues which surmount the balustrade are of bronze. The building is 468ft. long from north to south, 340ft. deep from east to west, by 72ft. high. The rotunda is 100ft. diameter, 12 ft. high to the top of the dome, and 160ft. to the domed ceiling of the lantern. The architects were first, Mr. Smithmeyer, then General Casey, Mr. Bernard Green, and Mr. Pelz. The building cost £1,272,000 sterling. The great architectural features of the

### Boston Library

are the staircase hall and the Bates Hall—the former notable for its mural paintings by M. Puvis de Chavannes. The Bates Hall is the reference reading-room, it is 218ft. by 42ft., and 50ft. high to the crown of its arched ceiling. It has accommodation for 264 readers at 33 tables. Sargent Hall, named after the eminent painter, is 84ft. long, 23ft. wide, and 26ft. high. The ceiling is vaulted, and the hall is lighted from the roof. The decorative painting will be entirely by Mr. Sargent, the scheme, representing the Triumph of Religion, illustrates certain stages of Jewish and Christian history. The interior court is surrounded on three sides by an open arcade of white marble, similar in design to that of the Cancelleria Palace in Rome. In its centre is a marble fountain, set about with grass plots; along the walls under the arcade are low oak benches, so that on warm days the court may be used as an open-air reading-room. The building is a careful study of modern Renaissance, thoughtfully and lovingly carried out, reflecting the greatest credit on its architect, Mr. McKim, and the public spirit that called it into being. Many interesting facts and figures in connection with this library and the branch libraries at Boston were given by the author. The third library called attention to, that of the

### Columbia University,

New York, was built and presented to the University by Mr. Seth Low, President of the University, as a memorial to his father. Construction and equipment have cost nearly £240,000. In plan it is like a Greek cross, with the great reading-room at the intersection of the arms, and covered by a dome. It has a magnificent approach of great terraces, and steps leading up to a noble entrance portico of ten Greek Ionic columns. The entrance hall is adorned with splendid marble columns. The building, of which many interesting details were given, may be taken as an example of a typical university library worked out on modern lines to suit modern requirements—a utilitarian scheme artistically carried out.

### New York's New Library.

The public library about to be built in New York was the subject of a limited competition last year, and copies of the successful design, lent by the architects, Messrs. Carrère and Hastings, were exhibited in the meeting-room. In its main lines it somewhat resembles the Boston Library, but in the instructions was this distinction, that though the authorities did not object to external splendour, they were rather disposed to favour a simple interior. The winning design had resulted in

a good plan, and what promised to be a stately dignified exterior. A marked feature is the raising of the building on a great terrace. The architects were not content with designing the building alone; it must have a dignified setting, so by means of broad flights of steps, terraces, fountains, and votive columns, the approaches were made to contribute to, and enhance the effect of, the architectural picture. This, the author thought, was a point to which more attention should be paid in public buildings in England. In conclusion the author expressed the hope, that these American works were not without their lessons for us in more senses than one—not only as libraries, but as public buildings.

### The Librarian's Point of View.

Mr. F. J. Burgoyne opened his paper with some observations on the limited income derivable by municipal libraries from the rates, urging that the initial charges for buildings and sites should be paid out of the general rates, and the whole proceeds of the penny rate be available for the current work of the library. The plan of the building should be considered, not only in relation to the public, but also to the probable size of the staff to be engaged. Dividing municipal libraries into three kinds, small, medium, and large, the author indicated the minimum accommodation that should be provided for staff, books, and public, illustrating his points by reference to plans of existing buildings, a large number of which were shown by the lantern.

### Requirements of Large Libraries.

In the larger libraries the work done in the reference department is of the most valuable character, and it is advisable to have, in addition to the ordinary reference reading-room, a smaller room for the use of students of special subjects, or those who are engaged upon original research. The librarian should have a room for his own use—one that may be used if necessary for the meetings of his committee. In large libraries there should be a fire-proof strong-room on the same floor as the reference department, in which the rarer books and MSS. can be stored, and rooms for repairing and binding books. There should be mess-rooms for the staff and suitable lavatory arrangements. The author recommended that before planning a building a clear idea of the method of work to be employed should be obtained from the librarian.

### Systems of Shelving.

In shelving the books in the lending department it is important to place them as near the issue desk as possible in order to facilitate quickness of issue. Reference books, the author considered, were best shelved in a storeroom adjacent to the reference reading-room. Room must be allowed for growth in this department. It was estimated that in the larger libraries stock would increase threefold in twenty-one years. To cope with such an accretion, the author favoured the adoption of the American "stack system" of packing the books, combined with rolling bookcases, for works in least demand. This system was described by the author, and plans and sections were shown of the stack systems in the libraries at Grieswald, Halle, and Strasburg. The new system of sliding presses in use at the

### British Museum Library

consists of stacks three tiers in height and about 9ft. apart. In front of each bookcase a couple of steel girders with flanges are bolted to the iron floor above, at a distance of about 36in. from each other, and at right angles to the case. From these girders hangs a bookcase of the same width, to within a few inches of the floor. It can be filled with books, and is readily pulled away from its normal position close against the front of the fixed bookcase. It can be adopted piecemeal as the necessity arises for greater accommodation in any particular section of the library. In the discussion which followed the reading of the papers, Mr. F. Pacy, hon. secretary of the Library Association, Mr. J. H. Quinn, librarian of the Public Library, Chelsea, Mr. H. H. Statham, and Mr. H. Beresford Pite took part



## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### BAKERIES.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—In reply to the question by F.W.A., on page 26 of last week's issue: a paper was read at a sessional meeting of the Sanitary Institute on the 14th February, 1894, on the subject of Bakehouses, by Dr. F. J. Waldo, Medical Officer to the Vestry of St. George the Martyr, Southwark. (See Journal of San. Inst., Vol. 15, pp 21—36.) Y.  
London, N.W.

### RIGHTS OF LIGHT.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—I have purchased a plot of land, adjoining some property, which was erected sixteen years ago; I purpose building premises on this land which will damage the lights of the above mentioned property. I should be much obliged if you could inform me through your valuable paper, whether (legally) I should be doing wrong.—Faithfully yours.  
H. F.  
Lancashire.

As the building adjoining the land on which you propose to build has not been erected for a period of twenty years, no claims in respect of "Ancient lights" would be valid. There is, therefore, no legal objection to the course you propose.

### CARPENTRY AND JOINERY.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Could you inform me whether there is a book published on "Practical Carpentry and Joinery," by George Ellis, as contained in the BUILDERS' JOURNAL, and if so, the price and where it can be obtained.—Yours truly,  
W. S.  
Luton.

These articles have not yet been republished in book form, but we understand Mr. Ellis contemplates arranging for their republication. Meanwhile the numbers of the BUILDERS' JOURNAL containing the articles can still be obtained from the publishers; the numbers in Vol. VI. cost 2d. each, those in Vol. VII. 1½d. each, and those in Vol. VIII. 1d. each. The prices of the bound volumes in which the articles appear are: Vol. VI. 7s., Vol. VII. 6s., and Vol. VIII. 5s.

### A RARE BOOK ON ARCHITECTURE.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Would you be kind enough to give me your opinion, through the columns of your valuable paper, as to the value of a book which has come into my possession which more particularly describes and illustrates in a splendid manner the five orders of Architecture? The book is printed in the old style of printing on the old-fashioned white rough paper, each page being sunk panelled, and is bound in plain, dark leather with single gold line at edge, date 1740, by Batty Langley. I have an idea it is of value, and should like to know for certain.—Yours faithfully,  
Sittingbourne. E. C. P.

You may congratulate yourself on having a copy of the first edition of one of Batty Langley's best known books. The book was afterwards enlarged by fourteen plates, and editions were issued also in 1741, 1750, and 1756. It is impossible to tell you the value of the book without knowing its condition; moreover, the value of these rarer books depends on what buyers there are at any particular time. We have not seen a quota-

tion lately. The book, however, is of value. Mr. Batsford, High Holborn, London, is a well-known dealer in works relating to Architecture.

### ARCHITECT AND QUANTITY SURVEYOR.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Could you kindly tell me whether the undermentioned has ever been decided, viz.: The right of architect to pledge credit of client for quantity surveyor's fees? Any information will greatly oblige.—Yours truly,  
H. Q.  
Oxford.

It has been decided that where the client authorised the architect to obtain tenders, he thereby gave the architect authority to engage a quantity surveyor (see *Waghorn v. The Wimbledon Local Board*, reported in the "Times" newspaper of June 4th, 1877, and copies in Hudson's Building Contracts, vol. 2, page 86). See also *Taylor v. Hall, J.R. 4 C.L.*, 469, per Monahan, C.J., page 479, who says: "No doubt a usage exists here and in England to the effect, that if an architect is employed to prepare plans of a contemplated building, and obtains proposals for the execution of the work, he employs a surveyor, such as the plaintiff Taylor, to make out quantities, so as to enable the builder to calculate for what sum he can execute the work, and a copy of the calculations so made by the surveyor is supplied to each builder who intends to send in a tender for the execution of the works; and no doubt an express or implied contract is made by each builder who so obtains the surveyor's calculations that, if he is the successful candidate whose proposal is accepted, he is the person who is to pay the surveyor his fees."

If no tender is accepted, or if, for any reason, the owner changes his mind, and no contract is entered into with the builder, the owner is, of course, liable to the surveyor, he being the person for whom the work is done, and the architect having the express or implied authority of the owner to employ the surveyor." This usage has been recognised in *England in Young v. Smith, Hudson*, vol. 2, p. 100, and in *North v. Bassett* (1892), 1, Q.B. 333.

## Correspondence.

### FACTORY DESIGN.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—I agree with the remarks of Mr. J. H. Pearson, reported in your last issue, that in the erection of factories, mills, &c., which are to contain engines, boilers, and machinery to secure their successful equipment it is very necessary that the architect and engineer should work in combination, as the knowledge peculiar to both professions is here particularly required.

I cannot illustrate my meaning better than by relating a case which caused some litigation, and in which the writer was called in as an arbitrator. In this case the architect carried out the work entirely; and as regards the buildings—with the exception of the area and height of the boiler chimney-shaft—it was very satisfactory. The engine, shafting, and some of the machinery was, however, badly arranged, bearing in mind the work it had to do. The shafting to transmit the power was attached to the walls of the building instead of being placed under ground; and one of the machines with a reciprocating motion and running at a high speed was provided with an entirely inadequate foundation which had to be re-made before it would run satisfactorily. Speaking as an engineer I take it that in cases of this kind it is without doubt very unwise for an architect to assume the rôle of an engineer or *vice versa*, but surely a friendly arrangement could be made whereby the special knowledge of both could be utilized, which would be to the distinct advantage of the employer.—Yours faithfully,  
M. POWIS BALE.

## BEVERLEY MINSTER.

IN connection with Mr. J. Hervey Rutherford's illustrations of Beverley Minster which appear in our inset supplement, a few notes on this ancient and beautiful church may be acceptable. The oldest part of the present structure, viz., the eastern arm and transepts, dates from the thirteenth century, the nave was added about a century later, and the magnificent west towers were built between the years 1380 and 1430. One of the most remarkable characteristics of Beverley Minster is the unity of the whole design; the builders of the later parts seem to have entered into the spirit of the original builders to such a degree that they have produced a harmonious whole which betrays scarcely any sign of the intervals that separated the three periods of building. The detail is extremely simple, having none of the luxurious elaboration to be seen in Lincoln Cathedral and elsewhere, yet the proportions are so exquisite that the want of elaborate ornamentation is not noticed.

The dimensions of the Minster are as follows: Length from east to west, 334ft.; breadth of nave, 64ft.; length of great transept, 169ft.; breadth of transept, 69ft.; height of nave, 66ft.; length of choir, 46ft.; breadth of choir, 26ft.; height of central tower, 107ft.; height of the two west towers, 200ft. One of the peculiarities of Beverley Minster is that it appears to be larger than some churches of larger area; the height especially appears to be very great, although in reality it is quite moderate.

The western towers were evidently part of the original plan. It is supposed that the cause of the stoppage of the work when they were but just commenced was the terrible Black Death which devastated the country in 1349, and the following years. The following details with regard to the west front are taken from an article by Mr. John Bilson, F.S.A.: "The completion of the west front seems to have occupied a considerable period of time, extending well into the fifteenth century. It is frequently spoken of as a copy of the west front of York. The general design may quite possibly have been suggested by York, but it is by no means a copy, and its lofty proportions are certainly more graceful than the widely proportioned front of York. We must remember, too, that when the west front of Beverley was commenced, York was still without its western towers, and it is not improbable that the towers of Beverley were completed before the north-west tower of York was built. Both at York and Beverley the towers have the single belfry window on each face. In the York towers the buttresses stop below the parapet cornice, which forms a strongly marked horizontal line. In the Beverley towers the pinnacles grow out of the buttresses, and preserve the vertical character which is so admirable a feature in the design of the west front, as in the church generally. The details of the front are perhaps a little "hard," but it is, nevertheless, one of the finest façades we possess of the Late Mediæval period. Professor Freeman was extremely severe on what he called its "sham" gable, and he could scarcely speak of Beverley without condemning "the fault which ruins this otherwise noble front." Such a criticism would have more force if the designer of the west front had been also the designer of the nave, and it is quite evident that a steep-pitched gable would have ruined the design of his front as it stands. Instead of carrying through the lines of the nave roof, he preferred to ignore them, and to build a storey between the towers with a low gable, panelling the face of this storey, and continuing the panelling across the towers, so as to give a broad horizontal band, subordinate to, but binding together, the strongly marked vertical lines of the tower buttresses. I venture to think that he chose wisely."

Our illustrations are taken from the collection of drawings by Mr. J. Hervey Rutherford, which was awarded by the Royal Institute of British Architects the Pugin Studentship for 1898. A further selection from these drawings will appear in future numbers.



LIBRARY  
OF THE  
UNIVERSITY OF ILLINOIS





Elevation.

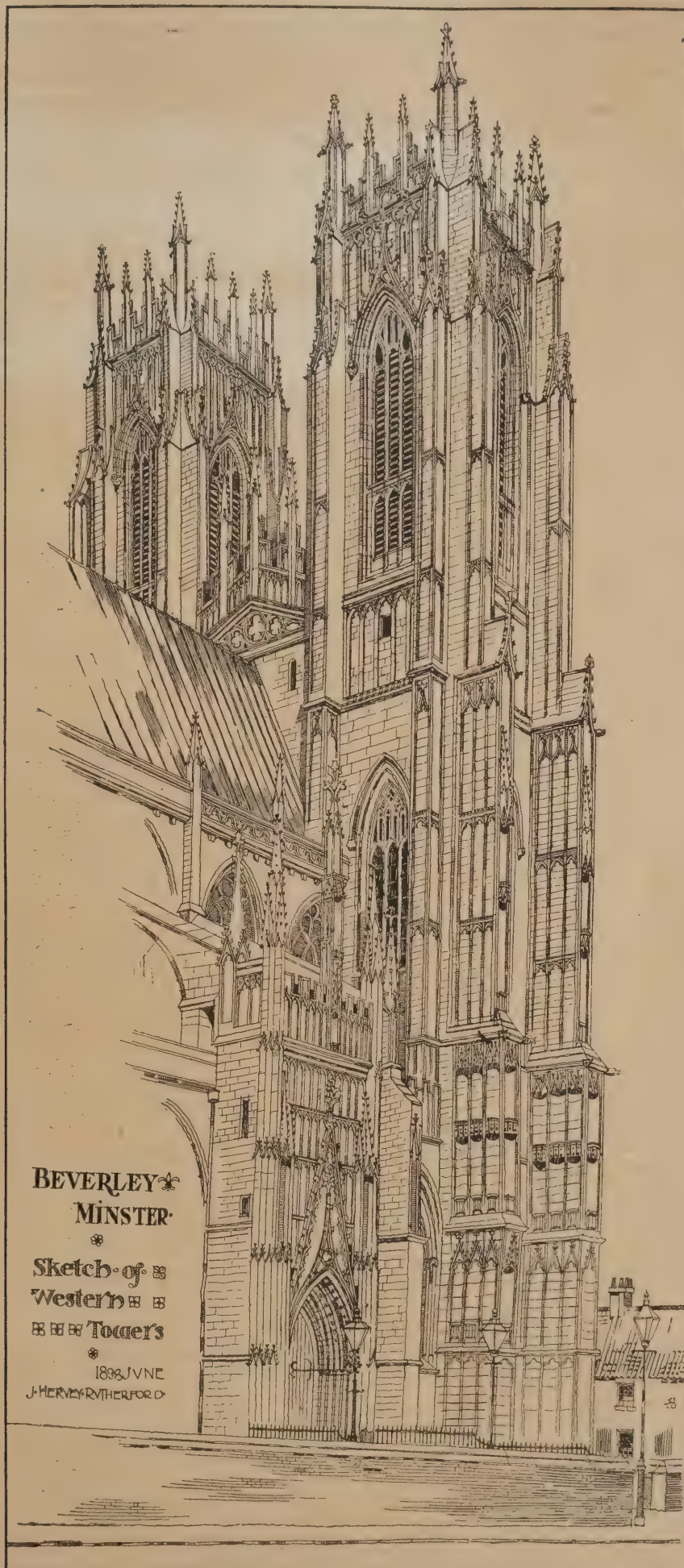


MEASURED DRAWN  
AND PARTLY INKED  
ON THE SPOT BY  
HERVEY RUTHERFORD  
FEB 1899

R.I.B.A. PRIZE AWARDS: THE PUGIN STUDENTSHIP. BEVERLEY MINSTER: IRON GATES IN CHOIR.

DRAWN BY J. HERVEY RUTHERFORD.





BEVERLEY  
MINSTER

Sketch of  
Western  
Towers

1898 JUNE  
J. HERVEY RUTHERFORD



LIBRARY  
OF THE  
UNIVERSITY OF ILLINOIS



# Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,  
February 22nd, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

**Bradford Fire Station Competition.** A good deal of dissatisfaction has been aroused amongst competitors in the Bradford Central Fire Brigade Competition at the extraordinary lines on which the competition seems to have been conducted. The designs were exhibited last Friday and Saturday at the Central Free Library and Art Gallery, Bradford, but the competitors might have remained in ignorance of the fact unless they chanced to see an advertisement in the local papers. The awards of the sub-committee are as follows: First (premium £100), Messrs. Mawson and Hudson, Bradford; second (premium £50), Mr. W. J. Morley, Bradford; third (premium £30), Mr. Owen Roberts, Liverpool. The winning competitors seem to have sent in three alternative designs, and to a representative of the BUILDERS' JOURNAL who inquired which was the selected design was vouchsafed the information that no one in particular was selected, the premium being awarded apparently to the whole collection! There are other strange features about this competition, and we shall revert to the subject next week. Meanwhile a protest is being formulated by several competitors against the decision arrived at by the Sub-committee, and if any other of the competing architects wish to add their names to the protest we shall be pleased to put them in communication with the leaders of the movement.

**Concert Halls.** The interest in the Soane Medallion award at the R.I.B.A. does not appear yet to have entirely evaporated. Our contemporary, "The Builder," published in its last week's issue the design to which, in its opinion, the prize ought to have been awarded. This is the design of Mr. W. Stanley Bates, and it is certainly clever and interesting, and has the advantage over the winning design that it conforms to the regulations of the London County Council. On the other hand, the elevation is far less pleasing than that of Mr. Mellon's concert hall illustrated in our issue of February 1st. By the way, Mr. Bates' attitude to our contemporary for its patronage and approval is likely to be tempered by the fact that it has printed one of his designs side down. This, we take it, is another sample of the humour which persists in announcing that the Ramsgate Corporation is voting designs for a concrete hall and reading room.

**The Housing Problem.** FROM time to time the question of the housing of the working classes in great cities brought prominently before the public, and various schemes—good and bad—have been tried to cope with the tremendous problem. At present the question may be said to

have reached, in London, at any rate, an acute stage. Rents are being raised, overcrowding is increasing, and working men are finding it increasingly difficult to find shelter, even at ruinous rentals, within easy reach of their work. The increase in the number of cheap trains and trams to the suburbs—a remedy often suggested, and to a certain extent adopted—is of little service to those whose employment is irregular, and who are consequently obliged to be on the spot to pick up work when it is to be had. What, then, is to be done? Both the House of Commons and the London County Council have been discussing the question; but, so far, the only matter on which general agreement has been arrived at seems to be that "something ought to be done."

**The Disease.** How pressing is the need for municipal or Government action in this matter has been brought home to many by an excellent series of articles that has been appearing in the "Daily News." It is stated that in London alone some 900,000 persons are living under conditions of overcrowding which the law declares to be insanitary, and therefore forbids, though, of course, it is impossible under present conditions to enforce the law. We read of a respectable workman coming up from the country to take a "job" spending the whole day seeking vainly for a roof to shelter him, and being driven in the end to take his wife and children to the workhouse. Mr. Crookes, at last week's meeting of the London County Council, told an equally lamentable story of misery caused through overcrowding. A man, wife, and five children were in the Poplar Workhouse. The man came out, obtained work, got his family out, and proceeded to look for a room in which they could find shelter. Although he searched the neighbourhood for days he could find nowhere to lay their heads until he lighted upon the cabin of an old disused barge in Limehouse Creek, and there for several weeks he and his family herded, a friendly waterman rowing the children every day to the shore so that they could attend school.

**Some Remedies.** THE London County Council's housing schemes are but a very partial remedy for the existing evils; indeed, from one point of view they may even be said to intensify the evil, for the Council does not provide accommodation for half the population it displaces, and consequently overcrowding in the surrounding districts is increased. Sir Arthur Arnold, at last week's meeting of the Council, went so far as to say that the present system of housing the poor was a sham, for not one of those evicted from foul slums was afterwards rehoused in the Council's dwellings. One thing which limits the work of the Council in this direction is its standing order to the effect that sufficient rents must be charged for rooms in the Council's dwellings to cover all outgoings, and leave no charge on the rates. This order Dr. Cooper proposed to amend by omitting the restriction. An amendment to refer the matter to the General Purposes Committee for consideration and report was carried. Another remedy was suggested by Mr. Glanville, viz., that land should be bought in the suburbs, and cottages erected thereon, each of which should accommodate two families; the rentals to be not less than 5s. nor more than 10s. a week. This proposal also was referred to a committee for consideration.

**Threatened Vandalism Averted.** BRISTOL antiquaries were much concerned the other day when they heard that the Building Committee of the Board of Guardians had recommended that "four ventilators should be fixed in the ceiling" of the historic "Court Room" at St. Peter's Hospital, where the weekly sittings are held. This room is the principal chamber of a many-gabled timbered mansion erected by Robert Aldworth, in 1612, upon the site of a much earlier house. The ceiling, which is a splendid example of early Jacobean work, is particularly handsome, and is composed of square, diamond, and quatrefoil compartments, con-

structed by floral and other ornamented divisions; it is surrounded by a deep frieze, composed of armorial shields and griffins. The proposal referred to was made on the 3rd inst., but public feeling was distinctly opposed to this "vandalism," as the room is one of the finest examples in the country. Several energetic members of the Clifton Antiquarian Club took the matter up, and the Society for the Protection of Ancient Buildings also protested against the proposed injury. "This famous and unique ancient room," wrote the secretary, "should not, it is thought, be sacrificed for purely utilitarian requirements; and it is believed that no method of piercing the ancient plaster ceiling for the purposes of ventilation could be satisfactorily effected without causing irreparable damage." When the Board met on the 10th inst. the Committee came prepared to ignore its former suggestion, and recommended instead the erection of a new Board room—the only real way out of the difficulty.

**Discoveries at Pompeii.** MR. CONSUL NEVILLE-ROLFE'S report on the trade of Naples and district for the year 1898 contains some facts about some recent archaeological discoveries. A very interesting mosaic (he says) was discovered a few hundred yards outside the wall of Pompeii last summer, and has been purchased by the Italian Government for the Naples Museum. It represents a conclave of seven philosophers amongst a group of ruins. The principal figure is seated and reading from a papyrus roll. In the distance is the Areopagus of Athens. The mosaic is of the finest execution, and the marble cubes, of which it is composed, are of bright and varied colours. A further portion of the town wall has also been cleared, and found to be of pre-Roman period, being constructed in the Oscan style; and at the south-western point of the city a temple which was in course of construction has also been discovered. In extending their cemetery the municipality of Caserta have come upon the remains of a classical necropolis, the tombs of which are quite likely to yield important objects. In making a new railway in the neighbourhood of Avellino, another classical necropolis has been accidentally disclosed in the past year, and if excavations are continued there they may quite well be productive of satisfactory results.

**Electric Locomotives.** THE question of the ventilation of the Underground Railway has been under consideration for quite a long time, and at last it seems likely that something will be done. In reply to a question in the House of Commons, Mr. Ritchie said that in 1897 he appointed a committee to inquire into the system of ventilation of the tunnels of the Metropolitan Railway, and the report of the committee and minutes of evidence were presented to the House in the same year. As recently as December last the managing director of the Metropolitan Railway informed the Board of Trade that the directors of that Company, conjointly with the District Company, had secured the services of Sir J. Wolfe Barry and Mr. W. H. Preece, and instructed them to provide the necessary electric plant and appliances for the equipment of a section of the line for experimental working. Mr. Ritchie expressed a hope that these experiments might result in the adoption of some system of electric traction.

**The Nimble Surveyor.** SPEAKING in the House of Commons the other night, Col. Sanderson, in his humorous way, threw a side light on the manners and customs of county surveyors and road contractors in Ireland. "At the road sessions in Donegal the other day," said the honourable and gallant member (we quote this from the "Times" report), "the deputy county surveyor refused to certify work done on the roads on the ground that the work had not been done. (Laughter.) This was looked upon by the road contractors as a monstrous piece of injustice, and they made for him. The deputy surveyor, being a nimble man,



flew out through the window like a comet, pursued by the road contractors. He fell on a roof and then plumped into the street, followed by the road contractors (laughter), and ran for two miles along the railway and got into the station, and so escaped." The story was used to point a political moral, with which, of course, we are not concerned. From our point of view the moral seems to be that no one should apply for the post of surveyor in Donegal who is not a good sprinter.

#### Somerset House.

SOME alarming reports have been circulating lately as to the alleged dangerous condition of Somerset House in regard to protection against fire. In the House of Commons last Thursday, Mr. W. Ambrose asked the Secretary to the Treasury "whether some of the rooms in Somerset House in which valuable registers were kept were divided by wooden partitions and lath and plaster walls, and whether naked lights were permitted in the galleries and passages of the building; and whether, having regard to the importance of safely preserving such public books and documents, he could give an assurance that all possible precautions were taken against fire and other dangers." In reply, Mr. Hanbury stated that no such valuable papers were stored in rooms of the description stated. He admitted that naked lights were used in some of the galleries and passages, but safety lamps or electric lights alone were used in the strong rooms, and electric light was gradually being substituted for gas throughout. The building was very carefully guarded, and was fully equipped with fire appliances, and there were caretakers and night patrols, whilst a special fireman was employed in the Probate Registry during the night. This is reassuring as far as it goes; but the minister was, of course, only repeating the reports of the Somerset House officials, who would naturally minimise the danger. Many visitors to Somerset House have remarked on the apparent absence of precautions against fire, and it is to be hoped that now public attention has been drawn to the matter some further steps will be taken to guard against the possibility of what might be an irreparable calamity.

#### Covent Garden Theatre.

THE Grand Opera Syndicate have authorised the carrying out of a very comprehensive scheme for lighting the stage at Covent Garden Theatre for the coming opera season. The scheme has been prepared by Mr. Wingfield Bowles, and the contractors are Messrs. Townsend, Tamplin, and Kakouski. The entire stage and its appurtenances will be electrically lighted. The necessary current will be taken from two stations to meet the exigency of any failure to the supply, and hence two distinct systems of wiring are being run. Four sets of different coloured lights—white, red, blue, and amber—will be used throughout. Numerous combinations are hence possible. Very elaborate regulators from Mr. Bowles' own patented designs are being put up, and many of the other appliances which he has specified are patents of his own. The installation will be the largest in the metropolis, no less than 2880 lamps being used on the stage proper. This elaborate scheme may be regarded as the first fruit of the spirited policy which led to the appointment of Mr. Edwin O. Sachs as technical and architectural adviser to the Syndicate.

#### Finds in the Forum.

FROM recent reports as to the progress of excavations in the Forum at Rome, it appears that below the floor of the Temple of Vesta four brick walls were discovered (probably built in the time of Hadrian), which form a kind of chamber. Searchers for marble in the sixteenth century may have spoiled one of the walls. The chamber is supposed to have served as a depository for the ashes of the sacred fire, which were taken from the Temple once a year. Several fragments of the reconstructed Temple of Julius Caesar have been found in a retaining wall which forms a kind of embankment to that side of the Forum. One of these

fragments, nearly a cubic yard in size, is very finely decorated with a bull's skull or boucranon. Near the Comitium was found a black stone, or rather a pavement of black marble, three metres seventy-five centimetres by four metres in extent. The slabs of black stone are very thick. The pavement itself was protected by a kerb of travertine, or ordinary Roman stone, and in the fourth or fifth century a marble fence was erected around the kerb, which evidently implies that some tradition of sanctity hung about the spot. As the use of black marble for such purposes is most unusual, there can scarcely be any doubt that this black stone is what was called in the old days "The Tomb of Romulus." The discoveries also include numerous wells lined with fragments of marble, most of which is ninth century work.

#### Mr. Ruskin's Portrait.

THE deputation which waited upon Mr. Ruskin at Brantwood, on his birthday, were anxious to gain the professor's consent to his portrait being painted by Mr. Holman Hunt, and that he should accept the same, as a gift from his admirers, for himself or for the Guild of St. George. Mr. Ruskin had, however, previously heard of the proposal, and, owing to the state of his health, felt himself unable at present to encourage the project. After the deputation had discussed the matter with Mr. and Mrs. Arthur Severn, it was felt desirable to leave it in abeyance, and not to interfere with the undoubted happiness of the professor on his birthday by endeavouring to gain his assent to a proposal which seemed to disturb him. It is to be hoped that later on something may be done to secure the portrait of Mr. Ruskin by one of the great artists, and, in the meantime, it is a matter of great satisfaction to know that, in addition to the well-known portraits by Mr. Millais, Mr. G. Richmond, and Mr. Herkomer, portraits have been painted recently by Mr. Arthur Severn and Mr. G. W. Collingwood.

#### A Splendid Avenue.

THE decoration of the Sieges-Allee, in Berlin, with the white marble statues of the rulers of Brandenburg and Prussia, says the Berlin correspondent of the "Daily Chronicle" is nearing completion. Of the thirty-two groups which will line both sides of this beautiful avenue, ten are already complete, and seventeen others well advanced. The Kaiser, whose present these are to the city of Berlin, takes the greatest interest in the undertaking, and pays frequent visits to the sculptors, assisting them with his extraordinary knowledge of the details of costume and armour. The Brandenburg and Prussian rulers whose statues have not yet been begun are the Electors Johann Georg, Joachim Friedrich, Johann Sigismund, King Friedrich Wilhelm II., and the old Emperor Wilhelm I. It is computed that the thirty-two groups when completed will have cost the Kaiser nearly £100,000. The Sieges-Allee decorated with these thirty-two groups in white Carrara marble will be one of the most magnificent avenues in the world.

#### An Architects' Menu.

THE annual dinner of the Cardiff and South Wales and Monmouthshire Architects' Society was held at the Royal Hotel, Cardiff, on the 11th inst. The gathering was representative, and the affair was a complete success. Mr. C. B. Fowler, F.R.I.B.A., president of the society, presided. Evidently, someone of waggish propensities had a hand in the preparation of the menu, which was as follows:—*SPECIFICATION.*—*Preliminary Survey:* Native Oysters; *Setting Out:* Clear Mock Turtle, Puree of Tomatoes; *Foundations:* Boiled Turbot, Hollandaise Sauce, Fried Smelts, Tartare Sauce; *Damp Course:* Braised Sweetbreads and Spinach; *Joinery:* Boiled Fowls and York Ham; *Walling:* Sirloin of Beef, Saddle of Mutton, Cauliflowers, Brussels Sprouts, Baked and Boiled Potatoes; *Roof:* Roast Pheasant; *Certificates on Account:* Plum Pudding, Mince Pies, Champagne Jellies, Apple Tart; *Final Certificate:* Dessert

#### The L.C.C. and Electric Lighting.

THE London County Council's policy with regard to electric lighting was defined at last week's meeting. The Council adopted the whole of the Highways Committee's recommendations proposing that opposition be offered to the twelve applications now before the Board of Trade for electric lighting provisional orders, in order that the interests of the consumers may be duly safeguarded. The policy of the Council as defined by these recommendations is: That the initial price to consumers shall not exceed 6d. per unit; that the supply shall be by continuous current; that when an order has been granted to a private company, the local authority may subsequently be granted an order enabling it to establish competition with the company; that when a local authority has obtained an order, a private company may not be allowed to set up a competing supply.

#### An Expensive Job.

It may be supposed that the London County Council will in future fight shy of widening railway bridges. Its last undertaking in this line has proved a very bad bargain. In 1894 the Council decided to widen Trinity Road Bridge, which runs over the South-Western Railway at Wandsworth. The estimate was £2650, but the cost has amounted to £5828 15s. 3d. The excessive cost seems to be due to the "cussedness" of the company, who would only agree to widen the bridge subject to a condition that the Council would pay the whole of the cost whatever it might be. If the Council would not agree to that course, the company demanded from the Council a penalty of £500 for every five minutes' interference with the traffic. Faced with these two unpleasant alternatives, the Council chose what seemed to be the lesser evil of letting the Company do the work and paying the bill. The payment was sanctioned—not altogether cheerfully—at last week's meeting.

#### A Good Bargain.

THE Olympic Theatre is for sale, price £12,000. The Improvements Committee of the London County Council recommends its purchase by the Council. The site, which covers an area of 13,160ft., will be required in connection with the proposed new thoroughfare from Holborn to the Strand. "We have ascertained," say the committee, "that the lessee holds for an unexpired term of fifty-one years, from Dec. 25th, 1898, at a rent of £2250 per annum." To acquire the property before the improvement is sanctioned by Parliament would seem at first sight to be an act lacking in common prudence. But the point is that, if the Council does not buy the theatre now, it is extremely probable that a speculator will; and the valuer estimates the saving to be effected by purchasing immediately at £25,000. Even in the event of the Council's Bill being rejected by Parliament—a most unlikely contingency—the Council would have, the committee points out, a valuable asset in the lease of the Olympic Theatre.

#### A New System of Incandescence by oil

has been tested at Sheffield. The lamp, which was suspended from one of the pillars which carry the electric cables, was of one thousand candle power. This particular lamp is manufactured by the Kitson Hydro-Carbon Heating and Incandescent Lighting Company, and is peculiarly brilliant and at the same time very soft and exceedingly steady. The lamp consists of an incandescent mantle—the improved Welsbach—an oil vapourising tube, which is placed and supported immediately above the mantle, and receives heat therefrom, and an oil supply tube, in which the oil vapour or gas is injected, and which serves to convey the mixture of air and vapour to the mantle. The oil tank and pump are placed at the base of the pillar. Each lamp is worked independently, but on one charging it will burn for 10 hours. For each mantle of between 450 and 600 candle power, it is said the cost of the petroleum will equal about one farthing per hour.



## Keystones.

**A New County School** is to be erected at Pontyvain, and the plans have just been passed.

**St. Paul's Cathedral** is to be illuminated by electricity, and the installation will cost some £5000.

**New Law Courts for Leeds** are proposed, and will form one of the first items on the agenda at the meeting of the City Council on March 1st.

**The New Empire Palace Theatre**, at South Shields, just erected by Mr Richard Thorn'ou, was opened to the public last Monday week. Mr. Frank Matcham is the architect.

**Llantwit Major Church** is to be repaired. The work has been placed in the hands of the diocesan surveyor, Mr. Geo. E. Halliday, F.R.I.B.A. The Western, or parochial, church is the most in need of repair, and this will be undertaken first.

**An Accident in Aberdeen.**—The gable of a house in course of erection in Ann Street, Aberdeen, fell last week, with the result that three masons were seriously injured and another killed. The accident is attributed to the recent heavy rains, which had loosened the lime.

**The New Technical Institute** and School of Art erected by the Kingston Corporation and the Surrey Council was formally opened last Saturday week. The buildings have been erected under the superintendence of Messrs. Lainson and Son, architects, of Brighton.

**Clonfert Cathedral.**—The restoration of the Chancel of this picturesque and historic building is now complete, but £1000 will be required to restore the nave and £1000 to rebuild the transepts. A strong effort is being made by some of the Irish clergy to raise the additional sum required.

**Eldon Street Arcade, Barnsley**, is, we understand, to be purchased by the Town Council, for extensions to the Kendray Street Market, which it adjoins. The purchase price is said to be £4800, and it is suggested that the purchase is necessary in order to reserve a large plot of land, recently cleared but now laid idle, as a site for municipal buildings.

**The House of Lords** is undergoing an important structural improvement just now in that part of the House which was formerly devoted to the chief librarian. The various rooms of the house are being reconstructed. The drawing room has been converted into an additional committee room, whilst the dining room, it is stated, will henceforth be used as a smoking room, in connection with the library. It is understood that in due course the rest of the building will be appropriated in like manner.

**A Relic of Old Scarborough** is being destroyed by the reconstruction of the Newcastle Packet Inn, on the Sandside. The hostelry dates from the middle of the fifteenth century, a crocket and Gothic canopy carving in very low relief, interspersed with battlements and vine leaves, fixing the date as near as possible. During the excavating of the cellar a fragment of the old town wall was unearthed. The building was partially constructed of old ships' timbers, which were found to be still quite sound.

**The Admiralty Buildings'** new block, now being erected at a cost of nearly £200,000, will probably be ready for occupation by about the end of the year. There are about 300 men engaged upon it. It will doubtless shortly be decided whether a third new block will be set up on the Horse Guards side, or whether the original idea of a covered corridor will be carried out. The Naval increase since this scheme was first planned has rendered a third block absolutely necessary; but there seems to be some reluctance to shut the quadrangle quite in, and, as an alternative, it is, we understand, proposed to put another building to adjoin the old Admiralty and the one just completed at the north-west corner.

**The Extension of Stonehaven Harbour** has been decided upon by the Police Commissioners at a cost of about £11,000.

**Electric Lighting of Lincoln** formed the subject of a Local Government Board inquiry into the proposal to borrow £19,000 last week.

**A New Poorhouse at Aberdeen** is proposed, and the proposal has been referred to the Works Committee of the Parish Council to report upon.

**The Building Fund of the New Roman Catholic Cathedral** at Westminster amounts to £90,790. Lord Brampton has undertaken to defray the cost of a side chapel dedicated to St. Gregory and St. Augustine.

**New Municipal Buildings** are to be erected at Peterborough. The Town Council has paid £11,000 for the site alone. The town has been growing in importance lately owing largely to the development of the brickmaking industry.

**Footway under the Thames.**—The London County Council have decided to proceed with the projected footway under the Thames at Greenwich. The tender of Messrs. John Cochrane and Sons for the work has been accepted, the price agreed upon being £109,950.

**A New Church for Stoke-on-Trent.**—The foundation-stone of the new church of St. Barnabas, at Penkull Allotments, Stoke-on-Trent, was laid last Thursday. When completed the church will provide accommodation for from 600 to 700 worshippers; but at present only a portion of the building is to be erected.

**A Technical School for Durham** is to be erected on a site in South Street. The executive of the Durham Mechanics' Institute have signified their intention of handing over their premises to the trustees of the new schools, or, in lieu, selling the premises and devoting the proceeds towards the cost of the new school. The estimated cost of the new school is about £5500.

**The Site for the Millais Memorial Statue** has been fixed upon at last. It is decided to place the statue on the principal flight of steps in front of the entrance portico, or, as an alternative, in one of the open spaces in front of the National Gallery of British Art at Millbank. It has been also decided to ask Mr. Thomas Brock, R.A., to undertake the execution of the statue.

**Stonehaven Corporation** has erected a model lodging-house, and it was opened last Tuesday week. The building, which is from plans by Messrs. J. and J. A. Souttar, architects, Aberdeen, is of a plain but substantial character. It is situated to the east of Allardice Street. The house contains about forty cubicles, each cubicle being 4ft. by 7ft. The "Model" has cost some £1400.

**Railway Improvements at Rhyl.**—The London and North-Western Railway Company have decided to make very extensive additions and improvements at the present inadequate railway station at Rhyl. The scheme includes the provision of a double set of rails, one for fast and one for local traffic. The railway station will be almost entirely reconstructed. The down platform, which is to occupy the site of the present goods shed, will be 1000ft. in length and 80ft. in width. At the west end of the platform, a "bay" will be constructed 500ft. long, with two platforms each 25ft. wide. These latter will be devoted to passengers using the Vale of Clwyd line. Other features of the down platform will be the erection of a handsome building of red pressed bricks and terra-cotta dressing, containing waiting-room, booking-office, cellars, lavatories, &c. The up platform will be lengthened to 1300ft., and also considerably widened, and the two platforms will be connected by a handsome bridge, built in two portions, one for the use of passengers and the other for luggage, which will be raised and lowered to and from the bridge by hydraulic lifts. Messrs. Gates and Thomas, of Warrington, have secured the contract, which is expected to occupy two years before completion.

## Professional Practice.

**Aberdeen.**—The Aberdeen Town Council Plans Committee had recently before them the plans of a large building about to be erected in Union Street by the Scottish Temperance Life and Accident Assurance Company, Limited. The new building is to be built on the site of the dwelling-house 154, Union Street, next the Royal Bank. The present building will be demolished and large and handsome business premises erected in its place. The new building will have a frontage to Union Street of 34ft., the site extending backward about 100ft. to Diamond Lane. It will be of grey granite, finely dressed, with architectural features in the front elevation of a handsome character. It is to be five stories high. The new building—for which Messrs. Jenkins and Marr are architects—is estimated to cost about £5000.

**Birkenhead.**—There is now in course of completion, adjoining the Theatre Metropole in Grange Road, a building which promises to be one of the finest bakeries in the North of England. It will be known as Reynolds' Bakery. The buildings stand upon 860 square yards, and it is not too much to say that every foot of space has been taken full advantage of. The new building will have a distinctly ornamental appearance, bricks and terra cotta of handsome design having been imported from the works of Messrs. Dennis, Ruabon. The bakery proper occupies a space 40ft. square, and is three stories high, the topmost floor being used as a store-room. By an ingenious arrangement the flour, along with water, is deposited in a patent mixer, where it is mechanically kneaded into dough of proper consistency. Other machinery provides for the partition and weighing of the dough and deposits it into the usual tins. These are placed upon a large iron plate, and this in turn slides into the oven. A thermometer occupies a prominent place in front of the oven, and the baker can by this ensure that a proper heat is maintained and that the bread is not disturbed until the baking process is completed. When the loaves are taken out they are placed upon cars which convey them to the cooling room and from thence to the shop, the bread being all the time kept under shelter and in no wise handled until it passes over the counter to the customer. The whole of the buildings will be lighted by electricity. The building contract has been intrusted to Mr. R. Allen, Cloughton Road. The architect is Mr. T. T. Rees.

**Bristol.**—At the meeting of the Bristol Society of Architects held last week the question of the competition for the proposed new library was discussed, and, after hearing the report of the deputation to the Libraries Committee, the members resolved that, in default of an independent professional assessor being appointed, they would adhere to their original determination not to compete. Surprise was expressed that the Library Committee had refused to accede to so reasonable a request, the ostensible intention of the competition being to obtain the best design.

**Douglas, I.M.**—Mr. A. Marshall Mackenzie, A.R.S.A., F.R.I.B.A., is the architect for the head office at Douglas of the Isle of Man Banking Company, Limited. The new bank, which is to be built of Aberdeen granite at a cost of £13,000, will occupy a site at the junction of the principal thoroughfares, Athol Street and Prospect Hill. It is intended to commence its erection at Whitsuntide, when the company obtains possession of the site. The style of architecture is Renaissance, and it has a fine bold effect, combining the appearance of great strength and stability with lightness and grace. The whole of the exterior will be executed in finely-axed granite, and the interior of the lobby will be of polished granite, and of different shades of colour.



**Leeds.**—The plans for the smallpox hospital which the Corporation of Leeds intend to erect on the Killingbeck Hall estate, outside the city boundary on the road to York, have just been prepared by Mr. E. T. Hall, and will shortly be submitted for the consideration of the Sanitary Committee. According to the plans, the new hospital is to be on the pavilion system, and to provide accommodation for 104 patients. It is proposed to build three pavilions, each with provision for thirty beds, and two isolation pavilions with seven beds in each. In addition there will be administrative quarters, nurses' home, servants' rooms, admission and discharge premises, and a mortuary. The hospital is to be situated on the highest part or plateau of the estate, it will be within a ring fence, and, in compliance with the Local Government Board's requirement, will be fully a quarter of a mile away from any of the Corporation's other infectious diseases buildings at Manston. Provision is made according to the plans for an administrative staff of sixty-one. The building will be a completely separate hospital in every particular of administration except in regard to the resident medical officer and matron, it having been thought unnecessary to have a medical officer in permanent residence.

**Merthyr Tydfil.**—The case of *Jenkins v. the Merthyr Tydfil District Council* came before Mr. Justice Lawrence and Mr. Justice Channell last Tuesday week in the Queen's Bench Division of the High Court. Mr. S. T. Evans, M.P., appeared for the appellant, and Mr. Macmorran, Q.C., and Mr. Plews for the District Council. This was an appeal on a special case stated by the Stipendiary Magistrate of the Merthyr Tydfil Court under section 3 of the Public Buildings and Streets Act 1888 (51 & 52 Vict.), and penalty had been imposed on appellant for erecting a building beyond the existing frontage line without the consent of the Urban District Authority. Mr. Jenkins was the owner of some houses in Union Street, Dowlais, and submitted two sets of plans of alterations to the premises, of which the local authority disapproved. A third plan was submitted, and there was no objection at all taken for over two months, until June 6th, when notice of disapproval was sent. Meantime the work had been done. The new buildings were inspected by the surveyor, and a certificate was given and the new buildings occupied. On June 27th—sixteen days afterwards—an information was laid against the defendant under the section. This summons was dismissed, but on August 19th further notice was given to the appellant calling his attention to the fact that the building were not in line, and on a second information a conviction took place on October 13th. The penalty was the nominal one of one farthing a day from August 19th to September 26th with costs. There were several points the appellant relied on, namely, that the third plan ought to have been disapproved within a month, that the summons having been dealt with once in August could not be tried over again in October, and that the District Authority acquiesced by their inspection of the building. Their Lordships sent the case back to the magistrates for further information before entering judgment finally, though they decided all points against the appellants except the question as to the two trials, which was reserved. Costs were reserved.

**Newcastle.**—The "conditions of competition" which are to be observed in the preparation of designs for the building of the new infirmary upon the Newcastle Leazes have been issued to the eighteen selected architects. The designs are to be for an infirmary containing 400 beds. The accommodation for nurses is to be—with the exception of the dining halls and ward sisters' rooms—separated from the working part of the hospital. Special care must be taken to preserve sufficient open space between the buildings, and to arrange the pavilions so that the intermediate space lies, for the most part, open to the south. The principal large wards must be built upon the pavilion system,

each bed having a window on either hand. The dimensions of the wards and rooms are for the most part left to the competing architects; and, while attention is called to the schedule of accommodation required, they are requested in their plans to make such provision as is now thought necessary for a large general hospital attached to a medical school. The entrances for public use must be as few as possible. The designs for the new infirmary must provide accommodation for 400 patients, with the necessary out-patient and pathological departments. To the author of the design which, in the opinion of the Committee and Assessor is most worthy of it, will be awarded the work of carrying his design into execution at the usual commission of 5 per cent. To the authors of the three designs which, in the opinion of the Committee and Assessor, are next in order of merit, will be awarded the respective premiums of £150, £100, and £50. The clerk of the works will be paid by the Committee. The designs will be submitted to Mr. Alfred Waterhouse, R.A., who will advise the Committee in their selection.

**Sheffield.**—The City Hospital Committee have had under further consideration the cost of the proposed additional hospital accommodation at Lodge Moor. Messrs. Flockton, Gibbs, and Flockton, architects, reported that their estimate for the further extension of permanent buildings at Lodge Moor is £45,777. The whole of the buildings are designed of an absolutely plain character, to be built of rock-faced stone, the inhabited parts alone to have hollow walls, and to be lined with brick, the pavilions to be plastered internally with cement, and to have teak floors, both being necessary in an infectious diseases hospital. The committee resolved:—"That, having given careful consideration to the question of the provision of additional accommodation at the Lodge Moor Hospital, this committee reaffirm the resolution passed by them at their meeting on the 21st December, 1898, namely:—"That six single-story stone wards, capable of accommodating 22 beds each, be built on the south side of the present building at Lodge Moor, and that application be made to the Local Government Board for their sanction to the borrowing of the sum of £45,777, to pay the cost thereof."

**Wellington.**—A great amount of interest is being taken in the development of various industries in East Shropshire, and the impending influx of a large number of workmen into the district has resulted in schemes being propounded by several syndicates with the object of providing house accommodation. A scheme has been formulated by Dr. Whittaker (medical officer of health for the Wellington district) and Mr. Myles Morley (surveyor to the Wellington Urban Council) to erect sixty workmen's dwellings, to be let at rents varying from 4s. to 7s. per week, at Wellington. To carry out this most of the dilapidated cottages in the town, forty of which have been condemned as unfit for human habitation, will be demolished. Another and more extensive scheme is being undertaken by a number of gentlemen in Birmingham, Wolverhampton, and Wellington, to acquire what is known as the Vicarage Estate, situated on the old Watling Street Road, not half a mile from the foot of the Wrekin. It is proposed to erect detached villa residences on the estate, and upwards of £100,000 will be expended. It has been felt for some time that the scarcity of house accommodation has retarded Wellington's progress. Building operations will commence almost immediately, and already there is a great demand for houses. There is an excellent water supply from the foot of the Wrekin, where three reservoirs are located, and there is a storage capacity of 25,000,000 gallons, or a supply sufficient for 170 days. The water gravitates to the town, and it is intended during the summer to increase the storage capacity so as to provide enough water for 250 days. Mr. Dalgleish, architect, of Wellington and Shrewsbury, has been instructed in connection with the several building schemes.

## Views and Reviews.

### AN INDISCRETION.\*

This book is of the chatty order. As an essay in pure chattering it is a *tour de force*. On the front page Miss Merrick introduces herself to her readers thus: "I am an artist, a student of the Royal Academy, and two years after my admission by competitive examination into those schools took first silver medal for painting a head from life;" and thereafter follows an account of the presentation of the medal in question, and the subsequent adventures of the lady as a portrait painter in this country, in Egypt, and in India, where she found a variety of subjects for her brush ranging from Mr. H. M. Stanley to the Maharajah of Dholpore. She went to India to paint the Maharajahs and their wives, knowing that in many of the native courts no man is ever admitted to the presence of the latter, and therein discerning an opening for a lady artist. She met with no little success, and, from the candour with which she enters into the business details of her art, it would seem with no inconsiderable gain of lucre. Such bright, unusual experiences, might be expected to awaken the observation and intelligent curiosity of the ordinary superior young person, but Miss Merrick has passed through these kaleidoscopic scenes with much the same mental attitude as that of people who make the whole romance, and pathos, and adventure of life, subservient to the collecting of used penny stamps. Miss Merrick's book is crammed with such valueless, commonplace gleanings. She tells prolifically how late the train was; how it came near to rain; what time dinner was, what time breakfast, what tiffin; what the weather was like when Mr. Stanley came to Cairo; what Mr. Stanley said when she painted his portrait ("Take care of my eyes, for Stanley's eyes are known all over the world"); what a score of other sitters said; and withal, accounts of pleasant inanities and courtesies delivered to her on the subject of her paintings; of nobles that have bowed to her, of other nobles who have shaken her by the hand; the clothes people wore, and the compliments they paid. Of the inner life and manner of the Zenana, which she had peculiar opportunities of observing, she tells us little, although the few things worth writing down which find place in the volume appear in this connection. Miss Merrick is much pleased with herself, which is quite right and proper; but it is necessary to abrogate the sentiment in such hours as one is employed writing for the pleasure of other people. If she had done this she would not have described how Dr. Parke bowed to her on the occasion of the reception of the Stanley relief party in the Albert Hall. It may have made her own pulses rise, but it will impress the reader not at all, except to convey to him that Dr. Parke had the manners of a gentleman. Personally, we like that page of the book best which displays a photograph of the fair writer, and assures us in facsimile of her own autograph that she is "ours sincerely." Is this revelation the secret of the unstinted compliments which the lady's pictures seem to have universally won? Even Mr. Ruskin has admitted himself a devotee by her showing. She saw him looking at a picture of hers, and ran up and asked for a criticism. "Charming! Charming! Charming!" murmured Mr. Ruskin. Miss Merrick states at the outset that this book was written in consequence of friends who cried, "Why don't you write a book?" We all know those friends. The book has been written apparently for friends, and in our opinion should have been privately printed for their benefit. We think Miss Merrick will regret that she was ever persuaded to publish it.

\* "With a Palette in Eastern Palaces," by E. M. Merrick. Illustrated. Sampson, Low, Marston & Co. Price 5s



# Under Discussion.

## ELECTRICAL TRAMWAYS.

At the last meeting of the Yorkshire College Engineering Society, Mr. E. Talbot, A.M.I.C.E., consulting electrical engineer to the Corporation, gave an address on Leeds City electrical tramways. The chair was taken by the president, Mr. J. H. Wicksteed, I.C.E. After describing the circumstances under which the electrical system came to be installed in Leeds on Roundhay Road, how that line was afterwards taken over by the Corporation, as well as the whole of the tramways of the city, Mr. Talbot dealt with different means of electric traction. No system, he said, might as yet be perfect, but experience, he thought, had shown that the overhead method as at work in Leeds was the best. The accumulative and conduit systems might at first sight appear to have advantages which the overhead did not possess, but it had been found that, either on account of expense or inconveniences of working, neither of these systems had met with the amount of approval it had been won by the overhead method of working. That was proved in the fact while there had been but little progress made with the other two systems, much had been done in the development of the overhead. The conduit was certainly very much more costly. The overhead might appear somewhat unattractive, but it was the most practicable. That had been a success in Leeds was shown in the extension of it that was now taking place. At the present time there were fourteen towns making progress with the system. As to the reason why many more towns had not the benefits of electrical traction, it might be found in the fact that many tramway companies, with their leases nearing completion, naturally did not care to go to the great expense of installing a costly electrical system and then be subjected to the risk of having to sell their concern almost as so much scrap iron.

## ENGINEERS, CONTRACTORS, AND NAVVIES.

Mr. Wm. Hirst delivered a lecture recently to members of Plymouth Institution, the subject being "Notes on Engineers, Contractors, and Navvies." Mr. W. H. K. Wright, president, occupied the chair. The lecturer stated that the public works executed in England during the century justifying far exceeded all that had ever been done before in this country, and he claimed that this mighty upheaval of energy, all devoted to the public weal, had been accomplished principally by engineers, contractors, and navvies, who had transformed the modern world. The anxieties and difficulties of engineers were great. Apart from natural obstacles, they had often great difficulties to overcome in the shape of actions by owners or occupiers of land and property. These difficulties, however, were not so great now as formerly, and, despite the hardships of engineering field work, members of the Profession were well known to be able to take care of themselves. First under George Stephenson the contracting system grew up, and we know it to-day. The early projectors of railways soon found that if the work was done by contractors, bar accidents, they knew pretty well what it was going to cost. They knew that, with a rigid contract, they would not easily be seduced into sudden changes of plan by their engineers. In the old days, when very little was known of the value of labour or materials for the execution of public works, or the difficulties and liabilities of their construction, owing to all new and strange, tendering with a view to getting into a contract was very different from what it was now. It was the contractor who had to give bodily form and shape to the directing the great sources of power in the use and convenience of man, and at the present day had to enter into a minute dissection of the multi-valued elements which obtained in the actual

giving of that form and shape. A contractor must be a good mental arithmetician, liberal-minded, calm, and equable in temperament, not upset by great success or great failure. As railways were the exclusive offspring of British genius, so the navy of navvies was of British type. He was not revengeful, and, if thriftless, he was neither mean nor avaricious. To a great degree of Danish or Saxon descent, and, uncorrupted by social vices, the pure navy, taking him zoologically, was a fine animal. His large bones, great muscular energy, and love of good living indicated his Teutonic origin, not less than his tractability, inclination for work, and downright honesty and spirit of independence. He was no sham, and gave work for the money. Treated well, and kept from drink, his behaviour was unexceptionable. No human being was capable of going through such a great amount of bodily work with more cheerfulness. The lecture was enlivened with interesting anecdotes and illustrated with a number of lantern slides, which included scenes on the Manchester Canal works, and also on the Keyham Extension Works, on which latter the lecturer is engaged.—In opening the discussion, in which high appreciation was expressed of the lecture, Mr. J. C. Barter said he was glad of the eulogy of labour it contained.—Mr. Penrose France suggested that the navy was a distinct type of labourer who followed this sort of work as his own particular occupation. He regretted the lecturer's remark, that the modern navy had physically deteriorated as the result of compulsory education and more indoor school confinement than was the case twenty or twenty-five years ago.

## A NEW ELECTRIC LAMP.

At a recent meeting of the Society of Arts, Mr. James Swinburne described a new form of electric lamp, the invention of Professor Walther Nernst, of the University of Göttingen. The efficiency of an incandescent body, as far as radiation went, said Mr. Swinburne, depended simply on the temperature. The efficiency of an incandescent lamp, for instance, depended on the temperature of the filament only, providing there was no loss by convection. The carbon would not stand a sufficiently high temperature, especially as, in addition to its low specific resistance, the filament had to be long and slender, and thus weak. Nernst, therefore, chose a material that would stand higher temperatures than carbon, and his material had the incidental advantage that its specific resistance was so high that strong rods could be used for high pressures instead of thin filaments. The most refractory material so far used in lighting was zirconia, which had been used to replace lime in the limelight, and the oxides, or rare earths, in the Welsbach mantles. Nernst took highly refractory oxides as his material.—It did not seem promising, because these oxides were notoriously good insulators. But such insulators are electrolytes when hot. Nernst, therefore, heated the rods to make them conduct, and then heated them electrically, preserving a temperature which was within the limits that the material could bear without softening. This meant that he could take the most refractory bodies supplied by the whole range of chemical research, and could heat them to a temperature short of their softening point, and could thus get an efficiency unknown to workers on the incandescent lamp. Such efficiency also meant whiteness of light, so long as the efficiency was not too high. The advantages claimed for the Nernst lamp are that it has a much stronger filament, which does not need enclosing, and which burns in the open air. This filament is essentially a thin rod of a very refractory substance, which will not convey the electric current at ordinary temperatures, so has to be heated to a dull red heat before the electric current will flow. This auxiliary heating may be effected by a match, candle, taper, spirit lamp, or by an automatic electric heating device. Once the rod is hot enough, the electric current flows and raises it to a white incandescence, which is maintained until the electric current is turned off.

## THE ARCHITECTURAL ASSOCIATION OF IRELAND.

A meeting of this Association was held in the Grosvenor Hotel, Westland Row, on the 14th inst., Mr. Geo. P. Sheridan, A.R.I.B.A., vice-president, in the chair. There was a good attendance. Mr. R. M. Butler, hon. secretary, read a paper entitled "The Influence of Climate and Material on National Architecture." This paper was awarded the "Essay Prize" of the Association for 1897. The lecture was illustrated by lantern views, and the subject was very fully dealt with. The lecturer showed that in all great periods of Architecture the influences of climate and material had exercised a large influence over the art of building; that it was only when the art became corrupted and enervated, and when mere copyism was called design, that these principles ceased to govern design. It was also pointed out that the social conditions and requirements of the people had in all times exercised an immense influence on their buildings. Messrs. Walter Doolin and Joseph Holloway having spoken in very complimentary terms of the paper, a hearty vote of thanks to the lecturer was passed unanimously. Mr. E. Bradbury was elected a member of the Committee in the place of Mr. A. W. Moore, resigned. Mr. J. C. Parkinson, Armagh, was elected a member of the Society.

## INSTITUTION OF MECHANICAL ENGINEERS.

The fifty-second annual general meeting of this Association took place at the new home of the institution in Storey's Gate, St. James's Park. The chair was taken by the retiring president, Mr. S. W. Johnson, who, in opening the proceedings, congratulated the members on having assembled for the first time in the lecture room of their own house, which will probably be formally opened at the beginning of May by the new president, Sir William White.—The secretary, Mr. E. Worthington, then read the annual report of the Council, which showed that the membership in all classes had reached 2684, representing a net gain of 191 on the previous year. The receipts for the year were £8452, and the expenditure £7588, leaving a balance of £863. The total investments and other assets amounted to £36,462. References were made to the experiments carried on by Professor Beare at University College as to the value of the steam-jackets; and to those of Sir William C. Roberts-Austen, who had carried to a successful conclusion a long series of experiments, made at the Royal Mint, on the behaviour of steels during cooling. Congratulatory allusion was made to the summer meeting held at Derby and it was stated that the next summer meeting would be held at Plymouth.—The adoption of the report and statement of accounts having been moved and carried, the President announced that Sir William White had been elected President for the ensuing year, and the Secretary read the list of the gentlemen chosen Vice-Presidents and members of Council to fill the vacancies caused by resignation or death.—Mr. Johnson next invited the President-elect to take the chair.—Sir William White said that he would serve the interests of the Institution to the best of his ability, and expressed his regret that Mr. Johnson had found it impossible to continue to hold his office for another year.—Sir Frederick Bramwell moved a vote of thanks to the retiring President for the excellent way in which he had conducted the work of President of the Institution.—Sir Edward Carbutt seconded the vote, which was carried with acclamation.—Mr. Johnson, in thanking the meeting for the cordiality with which the vote had been carried, regretted his inability to accept office for another year, owing to the increased demand made on his time.—The secretary then read the "fifth report to the Alloys Research Committee," by Sir William C. Roberts-Austen.—Sir William C. Roberts-Austen's report opens with a reference to the importance of the work of the Alloys Research Committee, and its influence in relation to the proposed es-



establishment of a National Physical Laboratory. The arrangement of new modifications in the recording pyrometer, made for the Committee in Professor Roberts-Austen's laboratory at the Mint, are then described. By the aid of the modified appliance it has been possible to detect and measure in cooling iron and steel an evolution of heat due to hydrogen, similar to the well-known recalescence which occurs at 650deg. C., when the relations of the carbon and iron change. The bulk of the report is devoted to the interesting question known as the "Solution Theory," of carburised iron, which is shown to be of great industrial importance. The behaviour of certain classes of steel, more especially those used for steel rails and for the manufacture of cutting tools, is considered in relation to this theory. This portion of the subject is illustrated by elaborate curves and by micro-photography.

#### BUILDING AN UNDERGROUND RAILWAY.

Mr. Basil Mott, last Monday week, delivered a lecture in connection with the series now being given at Carpenters' Hall; his subject was "Building an Underground Railway." The lecturer, with Sir Benjamin Baker, is the engineer of the Central London Railway, and he dealt with this line. Having premised that it was only by means of underground communication that the traffic problem of the metropolis could satisfactorily be solved, Mr. Mott showed how the first "underground" railway—the Metropolitan—absolutely stopped traffic in the streets that were over the line of the rails. Now, however, a shaft was sunk on the site of a station without diverting a vehicle. As the excavations deepened the circle was lined by sheets of iron. At the necessary depth tunnels for the rails were bored in the London clay. Remarkable contrivances known as Greathead shields were forced by hydraulic pressure through the soil, and little by little the boring was cased with iron plates until it became a long tube 8ft. in diameter, devoid of every scrap of timber, and girt about outside by 3ft. of cement, which had been "blasted" into position in order to prevent any possible subsidence in the soil above. The progress of the shields was from 12ft. to

14ft. in twenty-four hours. Thirty of them working simultaneously tunnelled 500yds. in one week. By the aid of the theodolite the accuracy of the boring was marvellous. Two shields working towards each other through from half to three-quarters of a mile of soil made borings that were only an inch and three-quarters out of perfect alignment. Moreover, the structure was so solid that it had passed under Holborn Viaduct without disturbing it in any way. The difficulties at what would one day be the Mansion House Station were referred to as being of a special character. First of all the network of gas pipes, drain pipes, water pipes, electric wires, &c., had to be accommodated in a sub-way to themselves. Then public subways, upon which the Corporation insisted, had to be provided for the future relief of the traffic overhead; and, finally, the station had to be made. That was so near completion that the wooden flooring of the road, which at present rested on the steel ceiling of the station, 18in. only below the traffic, would soon give way to asphalt. Below the station ran the tunnels of the City and South London Railway, and he did not know why another line should not go below that.—The lecture was illustrated by means of a number of lantern shades.

#### ENGLISH CHURCH ARCHITECTURE.

A lecture was delivered on the 15th at the Municipal School of Art, Manchester, by Mr. H. A. Prothero, on the subject of English church architecture. Mr. Charles Rawley presided, and there was a large attendance. Mr. Prothero began by saying that just as the Church of England traced her origin partly to the ancient British Church and partly to the Roman Church, so the buildings in which she worships show evidence of having been derived from the same two sources. So far as he knew, there was no church now standing built before the landing of Augustine, but the type was to be seen in a few churches built before the Norman Conquest and still in existence. These old churches consisted mainly of two rooms, with a doorway between them too narrow to be called a chancel opening. The Roman "ancestor" was the basilica. Mr. Prothero showed by

means of photographs thrown on the screen the gradual development of the parish church as we know it now. He passed on to speak of our cathedrals and abbeys. These, he said, were at first virtually French in general plan but in time marked differences were introduced. English cathedrals were longer, narrower, and more rectangular. For one thing the English cathedrals had usually a finer line than the French, an effect mainly due to the lower height of the roofs of our cathedral.

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COMING EVENTS.

nesday, February 22.

SOCIETY OF ARTS.—Philip Dawson on "Electric Traction and its Application to Railway Work."

MANCHESTER MUNICIPAL SCHOOL OF ART LECTURES.—May Morris on "Embroidery, Old and New." 7.30 p.m.

rsday, February 23.

SANITARY INSTITUTE.—Herbert Manley, M.A., M.B., on "Sanitary Law—English, Scotch, and Irish: General Enactments, Public Health Act, 1875; Model By-Laws, &c." 8 p.m.

INSTITUTION OF ELECTRICAL ENGINEERS.—Meeting at Institution of Civil Engineers, Great George Street, Westminster, at 8 p.m.

SOCIETY OF ARCHITECTS.—Meeting at St. James's Hall, Piccadilly, at 8 p.m.

LONDON INSTITUTION.—The Rev. Canon Benham, D.D., on "Winchester Cathedral," 6 p.m.

day, February 24.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.—H. B. Creswell on "The Advantages of being an Artist." 4.45 p.m.

nday, February 25.

SURVEYORS' INSTITUTION.—(Lectures and Demonstrations for Sanitary Officers.)—Inspection and Demonstration at the Aylesbury Dairy Co.'s Premises, St. Petersburg-place, Bayswater, at 3 p.m.

nday, February 27.

NORTHERN ARCHITECTURAL ASSOCIATION.—Lewis F. Day on "The Process of Pattern Design."

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—W. A. Bond, M.A., M.D., on "The Law Relating to the Supervision of Food Supply." 1 p.m.

CARPENTERS' HALL LECTURES.—William Poel on "English Playhouses in the 16th, 17th, and 18th Centuries," with lantern illustrations. Sir Squire Bancroft in the chair. 8 p.m.

SOCIETY OF ARTS.—(Cantor Lectures.)—Archibald Sharp, A.M.I.C.E., on "Cycle Construction and Design." 11. 8 p.m.

nday, February 28.

SOCIETY OF ARTS.—Meeting of Foreign and Colonial Section at 4.30 p.m.

nesday, March 1.

EDINBURGH ARCHITECTURAL SOCIETY.—A. Balfour Paul on "The Treatment of the Staircase." 8 p.m.

SOCIETY OF ARTS.—Ordinary Meeting at 4.30 p.m.

MANCHESTER MUNICIPAL SCHOOL OF ART LECTURES.—F. J. Cobden-Sanderson on "Bookbinding as an Art." 3.30 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Inspection and demonstration in the Parish of St. George's, Hanover-square, at 2 p.m. Conducted by Albert Taylor.

Thursday, March 2.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.) Prof. A. Bostock Hill, M.D., on "Trade Nuisances." 8 p.m.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—The First Conversazione at the Galleries of the Royal Institute of Painters in Water Colours, Piccadilly. Exhibition of Paintings in Pastel.

LONDON INSTITUTION.—The Rev. Canon Benham, D.D., on "St. Alban's Abbey." 6 p.m.

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Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 12 3	—
Glue	per cwt.	1 19 6	2 13 6
Lead, white, ground, carbonate	per ton	18 10 0	—
Do. red	do.	16 10 0	—
Soda crystals	do.	2 15 0	—
Shellac, orange	per cwt.	3 10 0	3 18 0
Do. sticklac	do.	2 2 6	2 15 0
Pumice stone	do.	0 8 9	—
METALS.			
Copper, sheet, strong	per ton	81 0 0	82 0 0
Iron, bar, Staffs, in London	do.	6 5 0	7 10 0
Do. Galvanised Corru-	do.	11 0 0	11 10 0
gated sheet	do.	14 2 6	14 5 0
Lead, pig, Spanish	do.	14 5 0	14 7 6
Do. English common brands	do.	16 10 0	—
Do. sheet, English, 14b.	do.	17 5 0	—
pers q ft. and upwards	do.	10 0 0	10 0 0
Do. pipe	do.	8 15 0	9 15 0
Nails, cut clasp, 3in. to 6in.	do.	104 0 0	105 0 0
Do. floor brads	do.	108 0 0	109 0 0
Tin, Straits	do.	27 10 0	28 10 0
Do. English ingots	do.	31 0 0	—
Zinc, sheets, English	do.	26 15 0	28 0 0
Do. Vieille Montaigne	do.	—	—
Do. Spelter	do.	—	—
TIMBER.			
Soft Woods.			
Fir, Dantzic and Memel	per load.	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Laths, log, Dantzic	per fath.	4 10 0	5 10 0
do. Petersburg	do.	4 0 0	6 10 0

Deals, Archangel 2nd & 1st per P. Std.	£ s. d.	£ s. d.
do. do. 4th & 3rd. do.	9 15 0	10 5 0
do. do. unsorted do.	10 0 0	11 0 0
do. Riga do.	7 5 0	8 5 0
do. Petersburg 1st Yellow do.	8 5 0	9 5 0
do. do. 2nd do.	14 0 0	14 15 0
do. do. Unsorted do.	8 0 0	—
do. do. White do.	8 0 0	9 5 0
Do. Swedish do.	7 15 0	9 15 0
Do. White Sea do.	7 15 0	12 10 0
Do. Quebec Pine, 1st do.	10 15 0	18 0 0
Do. do. 2nd do.	17 16 0	20 10 0
Do. do. 3rd &c. do.	11 10 0	—
Do. Canadian Spruce, 1st do.	5 10 0	9 10 0
Do. do. 3rd & 2nd do.	8 15 0	9 0 0
Do. New Brunswick do.	7 5 0	7 15 0
Battens, all kinds do.	7 5 0	8 0 0
Flooring Boards, 1 in. prepared, 1st do.	6 10 0	7 7 6
Do. 2nd do.	0 11 6	0 12 6
Do. 3rd &c. do.	0 11 3	0 11 6
	0 9 6	0 10 6

HARD WOODS.

Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 0 0	5 0 0
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, Lin., Cuba	per ft. sup.	0 0 4	0 0 4½
Do. Honduras	do.	0 0 4	9/16
Do. Tobasco	do.	0 0 4½	—
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 5 1/8	—
Do. African	do.	0 0 3 15/16	—
Do. St. Domingo	do.	0 0 4 7/32	—
Do. Tobasco	do.	0 0 6 5/32	—
Oak, Dantzic and Memel	per load	3 5 0	3 15 0
Do. Quebec	do.	4 12 6	—
Teak, Rangoon, Planks	do.	8 10 0	13 15 0
Wainscot, Riga (Baulk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 5
Walnut, American	per cub. ft.	0 2 9	0 4 3

TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

BIRMINGHAM.—For the erection of nurses' mess-room, &c., at workhouse infirmary, for the Union Guardians. Mr. W. H. Ward, architect, Paradise-street, Birmingham:—  
C. Reeve and Son ... £2,681 Whitehouse and Son ... £1,997  
Smith and Pitts ... 2,330 J. Atkinson ... 1,991  
R. Fenwick ... 2,279 T. Elvins ... 1,990  
C. Bryant ... 2,240 W. Robinson ... 1,980  
W. H. Gibbs ... 2,175 Gowing & Ingram, Bel-  
H. Hemming ... 2,100 grave-road, Bir'ham\* 1,789  
\* Accepted.

CARDIFF.—For the formation of roads, Penllin Castle Estate, Canton. Messrs. Veall and Sant, architects, Cardiff:—  
Charles Gardner ... £3,858 Barnes, Chaplin & Co. £1,750  
D. Thomas ... 2,017 F. Ashley, Cardiff\* ... 1,501  
\* Accepted.

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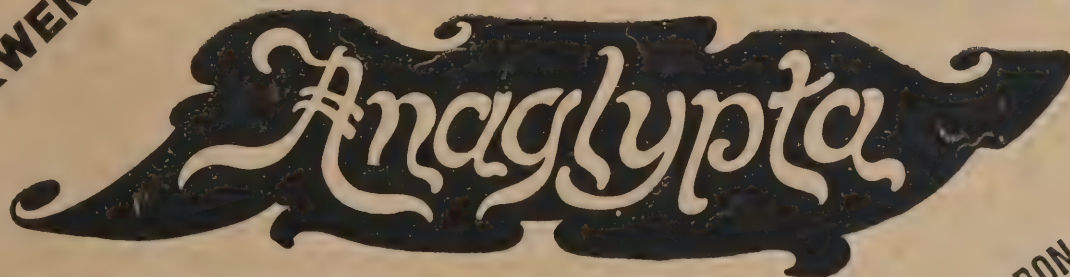
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**COLNEY.**—For the superstructure of All Saints Convent Chapel, Colney, Herts. Messrs. George T. Hine and Leonard Stokes, architects, Westminster. Quantities by Mr. E. C. Pinks:—  
 J. Shillito and Sons £45,000  
 Higgs and Hill ... 44,500  
 J. Norris and Son ... 43,424  
 Miskin and Sons ... 43,079  
 J. Howe and Co. ... 42,507  
 Foster and Dicksee ... 41,831  
 E. Dunham ... £41,667  
 Gough and Co. ... 40,834  
 Parnell and Co. ... 39,365  
 Stimpson and Co. ... 39,100  
 W. King and Son, London\* ... 38,574  
 \*Accepted.

**DROYLSDE (Lancs.).**—For the construction of sewers, Manchester and other roads, for the Urban District Council. Mr. W. Curry, surveyor, Council Offices, Droylsden:—  
 H. H. Davison ... £3,547 19 0  
 W. Briggs ... 3,143 12 0  
 James Bacon ... 3,111 17 0  
 John Randall ... 8,994 7 0  
 G. M. Collins ... £2,903 5 0  
 Etheridge & Clarke, Manchester\* ... 2,194 14 0  
 R. C. Fish ... 2,494 3 9  
 \*Accepted. † Withdrawn.

**FELIXSTOWE.**—For the erection of a villa, for Mr. F. C. Robinson, London. Mr. G. W. Thompson, architect, Granville House, Arundel-street, London, W.C. Quantities by Mr. E. C. Pinks, 45, Parliament-street, S.W.:—  
 E. West ... £1,663  
 H. Linzell ... 1,495  
 F. C. Thurman ... £1,475

**HENDON (Middlesex).**—For the execution of sewerage works, Highwood Hill, for the Urban District Council. Mr. S. S. Grimley, surveyor, The Burroughs, Hendon:—

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	£ s. d.	£ s. d.	£ s. d.
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E. Hollingsworth	2,227 7 8	2,227 7 8	2,202 10 3
E. T. Bloomfield	2,144 11 2	2,113 5 6	2,077 15 11
Wilkinson Brothers	2,082 0 0	2,037 0 0	2,030 0 0
M. S. Kitteringham	1,945 10 2	1,895 3 2	1,869 19 8
R. Ballard, Limited	1,924 4 10	1,884 11 4	1,855 15 4
A. T. Catley	1,870 0 0	1,865 0 0	1,840 0 0
Clift Ford	1,851 0 0	1,821 0 0	1,792 0 0
T. Adams, Green Lanes, Wood Green, N.*	1,798 11 4	1,730 11 10	1,709 13 8
F. H. White and Co.	1,511 18 6	1,490 16 7	1,466 16 1

\*Accepted.

**LEYTON.**—For the first portion of stores and workshops to be erected in Church-road, Leyton, Essex, for the London Electric Wire Co., Limited. Mr. A. W. Hudson, architect, 42, Bishopsgate-street-within, London, E.C. Quantities by Mr. W. Shornicraft, 6, South-square, Gray's Inn, W.:—  
 W. Shornicraft ... £11,475  
 E. Lawrence and Son ... 10,332  
 F. and F. H. Higgs ... 10,285  
 T. Goodall ... 10,147  
 H. Brown ... £9,979  
 S. G. Scott, Bloomfield-street, E.C.\* ... 9,868  
 \*Accepted.

**LONDON.**—For the erection of St. Mary's Parochial Building, Tottenham, London, N. Messrs. J. E. K. and J. P. Cutts, architects, Southampton-street, Strand:—  
 Bright and Son ... £3,905  
 Humphreys and Son ... 3,950  
 James Stewart ... 3,831  
 Cornish and Gayner ... 3,784  
 A. Porter ... £3,725  
 S. J. Scott ... 3,720  
 Green and Boxall ... 3,680

**LONDON.**—For erecting shops and flats, No. 54, Goodge-street, W., for Messrs. W. and A. Curmick. Messrs. White and Page, architects. Quantities by Messrs. Northcroft, Son and Neighbour:—  
 Higgs and Hill ... £3,580 0  
 Simpson and Sons ... 3,547 0  
 Patman and Fotheringham ... 3,441 0  
 F. Lawrence and Sons ... 3,157 0  
 Bywaters and Sons ... 3,101 0  
 H. Wall and Co. ... £3,069 0  
 J. Smith and Sons ... 3,053 0  
 Barrett and Power ... 3,013 0  
 J. Lidstone & Son ... 2,973 10  
 F. T. Chinchin\* ... 2,694 0  
 \*Accepted.

**LONDON.**—For the construction and completion of the new street from Fenchurch-street to Crutched Friars, to be called Lloyd's-avenue, for the Corporation of London:—  
 Pedrette ... £18,462  
 Jackson ... 13,970  
 Ford and Co. ... 12,690  
 Minter ... 12,339  
 Killingback ... £12,317  
 Dolman ... 12,140  
 Mowlem ... 6,960

**LONDON.**—For re-building Bishop's-court, E.C. Messrs. Alder and Turill, architects:—  
 Ashby and Horner ... £5,138  
 J. Bentley ... 4,785  
 E. Lovatt ... 4,600  
 W. Shurmur ... £4,300  
 Patman and Fotheringham ... 3,983  
**LONDON.**—For alterations at the "Duke of York," Downham-road, Islington, for Mr. F. Coucher. Edward Brown, architect, Commercial-street, Bishopsgate:—  
 J. V. Kiddle & Son ... £834 0 0  
 George Newton ... 814 4 10  
 J. and W. T. Inkpen ... 770 0 0  
 W. Lawrence ... £475 0 0  
 R. Pristow ... 465 0 0

Gasfitter's Work.

Vaughan and Brown ... £135 0  
 Dupuy, Pottier and Adams ... 132 15  
 J. Steadman ... £105 5

**NORMANTON-BY-DERBY.**—For additions to school buildings, for the School Board. Messrs. Naylor and Sale, architects, Irongate, Derby:—

King & Harrison ... £1,801 9 0  
 Alfred Smith ... 1,790 0 0  
 J. Parker and Son ... 1,784 15 0  
 J. Tomlinson and Co. ... 1,770 0 0  
 A. B. Clarke ... 1,703 0 0  
 George Wagg, Normanton, Derby\* ... £1,675 15 0  
 Henry Jordan ... 1,670 14 11  
 H. J. Robinson ... 1,650 0 0  
 \*Accepted.

**SHORTLANDS.**—For erecting a residence at Shortlands, Kent, for Mr. J. A. Kurtz. Messrs. Crickmay and Zimmerman, architects, 4, Mincing-lane, E.C.:—  
 Beer and Gash ... £1,700  
 Duthoit ... 1,650  
 Kirk and Kirk, Westminster (accepted) ... £1,600

**SOUTHAMPTON.**—For the construction of sewerage tanks, &c., for the Corporation. Mr. W. B. G. Benne, C.E., Borough Engineer, Municipal Offices, Southampton:—  
 B. Cooke and Co. ... £6,715  
 G. Bell ... 6,491  
 H. W. Bull ... 6,106  
 Jenkins and Sons ... 6,099  
 Roe and Grace ... £5,895  
 Playfair and Toole ... 5,870  
 Southampton\* ... 5,420  
 H. C. Dove † ... Informal.  
 \*Accepted. † Informal.

**PINNER.**—For erecting nine villas at Pinner, for Mr. F. D. Thomas. Mr. T. S. Stephens, architect, 28, Conningham-road, Shepherd's Bush:—  
 J. Parker ... £6,010  
 H. J. Crooks\* ... 5,400  
 A. Wright ... £5,200  
 \*Accepted.

**SUTTON.**—For the erection of a house, &c., at Belmont, for Mr. Malcolm Ross. Mr. W. Culling Gaze, architect, 2, Walbrook, E.C. Quantities by the architect:—  
 S. Page ... £2,038 6 1  
 H. Clark ... 1,574 0 0  
 J. B. Potter ... 1,566 0 0  
 W. Potter ... £1,551 0 0  
 E. J. Burnand ... 1,485 0 0  
 F. S. Shopland ... 1,387 0 0

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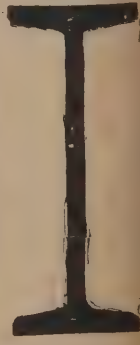
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**PETERBOROUGH.**—For the erection of two villas and studio, Park-road, Peterborough, for Mr. Robert Christian. Mr. J. G. Stallebrass, architect, North-street, Peterborough. Quantities by architect:—  
 D. Gray ... £1,252 Sibley Bros. ... £1,195  
 Watson and Lucas ... 1,220 G. Nichols ... 1,160  
 S. Hipwell and Co. ... 1,215 G. Guttridge (accepted) 1,135  
 R. J. Nichols ... 1,200 G. Brown ... 1,125  
 [Proprietor to provide heating apparatus, grates, locks, &c.]

**WALLINGFORD (Berks).**—For the erection of a residence, Shillingford, for Mr. Jas. Mitchell. Mr. S. Johns, architect, Wallingford:—  
 C. J. Goodchild ... £4,488 0 Brasher and Sons, Wallingford\* ... £1,850 10  
 A. J. Carley ... 1,960 0  
 E. Holly ... 1,895 10  
 \* Accepted. Also accepted for boundary walls, deep well and fittings.

**WATERVILLE (co. Kerry).**—For the erection of a cable station, offices, &c., for the Commercial Cable Company. Mr. J. F. Fuller, architect, Brunswick-chambers, Dublin:—  
 For station only. Dwellings for officials postponed.  
 D. Foley ... £5,450 0 0 S. Hill, Cork\* ... £4,349 0 0  
 Collen Bros. ... 5,050 0 0 Jones ... 4,317 0 0  
 Hemmingway ... 4,472 2 2 Healey ... 4,296 16 8  
 \* Accepted.

## CONTRACTS OPEN.

### EDINBURGH AND LEITH CORPORATIONS' GAS COMMISSIONERS. TO CHIMNEY CONSTRUCTORS.

The Commissioners are prepared to receive TENDERS for the CONSTRUCTION of a CHIMNEY STALK, 102ft. high, to be constructed at their new Gasworks at Granton, near Edinburgh.

Plans, specification, schedule, and form of Tender may be obtained on application to the Chief Engineer, Mr. W. B. HERRING, Gasworks, Edinburgh, upon payment of one guinea, which will be returned on the receipt of a bona-fide Tender.

Tenders, endorsed "Tender for Chimney Stalk," to be addressed to the undersigned and delivered at his offices on or before 4th of MARCH next.

JAMES Mc G. JACK,  
Clerk.

No. 25, Waterloo-place,  
Edinburgh,  
February 15th, 1899.

### WOOLWICH LOCAL BOARD of HEALTH.

#### TO BUILDERS AND CONTRACTORS.

Notice is hereby given that the Woolwich Local Board of Health will meet at the Town Hall, Woolwich, on TUESDAY, FEBRUARY 28th, 1899, at SEVEN o'clock in the evening, to receive TENDERS for the ERECTION of STABLING and HORSEKEEPER'S RESIDENCE in Callis-alley, Woolwich.

The drawings and specification can be inspected at the Office of the Architect, Mr. J. O. COOK, No. 1A, Eleanor-road, Woolwich, where bills of quantities and forms of Tender can be obtained upon payment of One Guinea, which will be returned upon the receipt of a bona-fide Tender.

Persons Tendering must declare that they do and will pay such rates of wages and observe such hours of labour as are generally accepted as fair in their several trades, and that they will not sublet the work except with the consent of the said Board.

Tenders to be addressed to the Clerk of the Woolwich Local Board of Health, endorsed "Tender for Stabling, &c., Callis-alley," and delivered at the Town Hall, Woolwich, before SEVEN o'clock p.m. on the said FEBRUARY 28th, 1899, after which time no Tenders will be received.

The person or persons whose Tender or Tenders may be accepted will be required to find security for the due performance of the contract.

The Board do not bind themselves to accept either the lowest or any Tender.

By order,  
ANDREW C. REED,

Town Hall,  
Woolwich,  
February 8th, 1899.

## COMPETITIONS.

### COMPETITIVE DESIGNS.

The Leeds Corporation offer premiums of £150, £100, and £50, for first, second, and third best DESIGNS respectively, for MARKET HALL and MARKET SHOPS on a site of 4560 square yards in area, which forms part of the present Kirkgate Market.

Terms of the Competition and particulars of site can be obtained on application to the City Engineer, Municipal Buildings, Leeds.

Designs must be sent in to the Town Clerk, Town Hall, Leeds, not later than JUNE 1st.

## HEXHAM UNION.

### NEW VAGRANT WARDS. TO ARCHITECTS.

The Guardians of the above Union are prepared to offer a premium of £20 for the best and most economical PLANS for new VAGRANT WARDS to be erected at the Workhouse.

Further particulars on application to me the undersigned.

J. H. NICHOLSON,

Clerk to the Guardians.

Offices:—  
Midland Bank-chambers,  
Hexham,  
January 26th, 1899.

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Plans of the site, with section and general instructions, may be had on application to Mr. T. G. TAYLOR, Borough Surveyor, Broad-street, Ramsgate, on receipt of a cheque for £2 2s. made payable to the Borough Treasurer, and which will be returned to such competitors as may send in plans complying with the conditions of the Competition.

The designs must be sent in not later than the 30th APRIL, 1899.

By order,

W. A. HUBBARD,

Town Clerk.

Town Clerk's Office,

Town Hall,

Ramsgate,

February 6th, 1899.

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# WIND PRESSURES.

By C. W. TOMLINSON.

THE estimating and working out of wind forces and pressures against walls, chimneys, &c., is often a fruitful source of difficulty to the student, and, as questions upon this subject are frequently set in examinations, it is proposed to explain the matter as fully as possible within the limits of a short paper.

Hurst, in the "Architectural Surveyors' Handbook," gives the following table showing the velocity and power of winds:

Designation.	Velocity in miles per hour.	Pressure in lbs. per sq. foot.
Scarcely perceptible.....	1	·005
Perceptible.....	2	·020
Slight breeze.....	4	·080
Moderate breeze.....	8	·320
Fresh breeze.....	15	1·125
Brisk wind.....	25	3·125
Strong wind.....	30	4·50
High wind.....	40	8·00
Storm.....	50	12·50
Violent storm.....	60	18·00
Hurricane.....	80	32·00
Violent Hurricane.....	100	50·00
Gust observed in England in 1868.....	126	80·00

Hurst also remarks that near the earth's surface the velocity is probably somewhat modified by the various obstacles that are passed over.

In most examination questions set on [this subject the student is told to neglect the strength of the mortar, so that the question resolves itself into a problem in mechanics, on the principal of the lever. The pressure ( $F$ ) is a force tending to overturn the wall at a point  $A$  (see Fig. 1) near the base, with a leverage formed of half the height of the wall (or average leverage). And the force tending to keep the wall in position is simply the weight of the material ( $W$ ) acting with a leverage of half the thickness, about the same point  $A$ . Thus raise the height of the wall, and we increase its liability to be overturned, by increasing the leverage of  $F$  about  $A$ . Thicken it, and we increase its stability by increasing the moment of  $W$  about the same point  $A$ .

So a simple formula is obtained for equilibrium:

$$F + \frac{H}{2} \text{ (or half-height)} = W + \frac{T}{2} \text{ (or half-thickness.)}$$

In working out this class of problem it is usual to take only a single foot run of wall.

Then  $F$  (total pressure) =  $f$  (pressure per foot super.)  $\times H$  (height)  $\times L$  (length) which being one, may be omitted.

And on the other side,  $W$  (total weight =  $w$  weight per foot cube.)  $\times T$  (thickness)  $\times H \times L$ , omitted again.

Then the full formula runs:

$$f \times H \times \frac{H}{2} = w \times T \times H \times \frac{T}{2}$$

As an example:—

What force per foot super. will be required to blow down a brick wall, 8ft. high, 18in. thick, neglecting the strength of the mortar?

We will take the brickwork as weighing 110lbs. per foot cube. Then by the above formula:

$$f \times H \times \frac{H}{2} = w \times T \times H \times \frac{T}{2}$$

$$f \times \frac{H^2}{2} = w \times H \times \frac{T^2}{2}$$

$$f H^2 = w H T^2$$

$$f H = w T^2$$

$$f = \frac{w T^2}{H}$$

$$f = \frac{110 \times 1.5 \times 1.5}{8} = \frac{2.25 \times 110}{8}$$

$$f = \frac{247.5}{8} = 30.93 \text{ lbs.}$$

Then, as this amount of 30.93lb. is merely equilibrium, a force of, say, 31lb. per foot super

would overturn the wall. This may easily be seen by Fig. 2; where total pressure  $F$ ,  $31 \times 8 = 248$ , acting with a leverage of  $\frac{H}{2}$ , or 4 would produce a moment of 992lb., while weight  $W$ , of 12ft. cube  $\times 110 = 1320$ lb., with a leverage of  $\frac{T}{2}$  or .75 of a foot would produce a moment of 990lb., or 2lb. less. Of course, if the pressure be given, the height, or thickness to resist that pressure may be found in the same way.

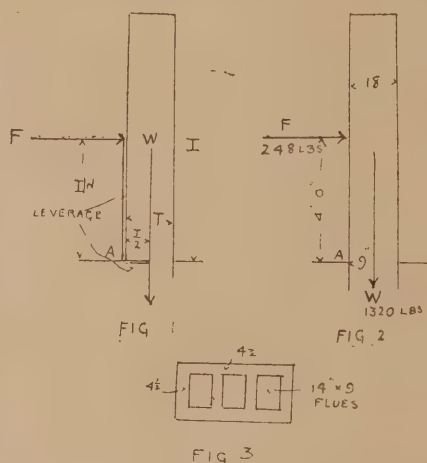
In the next case let us take a chimney. This differs in one or two points, as being limited in length  $L$  makes an addition to the formula, while, in getting  $W$ , the flues must be deducted.

For example take a stack of three flues arranged as Fig. 3. What force per foot super. will overturn such a stack at a point 6ft. from the top? The over-all size of the stack, then, is:

Length: 9in.  $\times 3 + 4\frac{1}{2}$ in.  $\times 4 = 2$ ft. 3in. + 1ft. 6in. = 3ft. 9in.

Width: 1ft. 2in. +  $4\frac{1}{2}$ in.  $\times 2 = 1$ ft. 2in. + 9in. = 1ft. 11in., or, say, 2ft.

With a question like this it is wisest to



obtain the weight before commencing to work out the formula.

Full size of stack, Flues.  
6ft.  $\times$  3ft. 9in.  $\times$  2ft. = 3  $\times$  6ft.  $\times$  1ft. 2in.  $\times$  9in.  
45 cub. ft. = 15  $\frac{1}{2}$  cub. ft.  
29  $\frac{1}{2}$  or 29.25 cub. ft.

Taking the brickwork at 108lb. per cub. ft.  
Total weight, or  $W$ , = 29.25  $\times$  108 = 3159lb., say 3160.

Then  $W$ , acting with a leverage  $\frac{T}{2}$

$$f \times H \times \frac{H}{2} \times L = 3160 \times 1$$

$$f \times \frac{H^2}{2} \times L = 3160$$

$$f H^2 L = 6320$$

$$f = \frac{6320}{6 \times 6 \times 3.75} = \frac{316}{6.75} = 46.8 \text{ lbs., or } 47 \text{ lb. per ft. sup. to overturn.}$$

This may be proved as before, but in getting the moments about the given point, care must be taken to include  $L$ , the length. The thoughtful student will doubtless see that the cause of a greater force being needed to overturn the stack, rather than the wall, is (1) the height is less, and (2) a broader base is obtained by enclosing the flue, thereby increasing  $T$ , the chief factor in producing the moment of stability. Notice must also be taken of the fact that, in both cases, the strength of the mortar is entirely neglected.

**Rebuilding of Centre of Glasgow.**—The City Improvement Committee of Glasgow Town Council have recommended that the north block of the King Street area be reconstructed on a scheme which shows a rental of £2290, and charges of £572 10s. for maintenance, &c., and £607 for interest, leaving a surplus of £1110, which, capitalised at twenty years' purchase, is equal to £12 4s. per square yard of net building ground; or, treated as feu-duty and capitalised at thirty years' purchase, is equal to £18 6s. per square yard.

# THE FORMATION OF SOILS.

By GUY CADOGAN ROTHERY.

(Continued from page xi.)

**INSTABILITY OF EARTH CRUST.**—As we have seen, the crust of the earth is not stable, but undergoes upheavals and depressions. The surface of the igneous and sedimentary rocks being exposed to the atmosphere and water is eroded, and crumbled up into more or less fragmentary portions. This result of rock disintegration is what we call soil.

**WEATHERING.**—Soils are, then, formed by the weathering of rocks, that is, by the action of the atmosphere, rain, water, wind, frost, by plants, and, to a much more limited extent, by animals. The action of the atmosphere is chemical; that of rains, water and plants both chemical and mechanical; that of frost and wind is purely mechanical.

Atmospheric air is a compound of nearly four fifths of nitrogen with about one fifth of oxygen, a considerable trace of carbonic acid, aqueous vapour, some ammonia, etc. Now oxygen plays an all important part in nature. It is largely present in the crust of the globe. Professor Pretsch gives the estimated distribution of the elements in the solid crust as follows: oxygen 50.0 per cent., silicon 25.0, aluminium 10.0, calcium 4.5, magnesium 3.5, sodium 2.0, potassium 1.6, carbon, iron, sulphur, and chlorine together 2.4, other bodies 1.0. Professor Vivian B. Lewes, gives the percentage as follows: oxygen 45.5, silicon 29.4, aluminium 8.2, iron 6.3, calcium 2.4, magnesium 1.6, sodium 2.5, potassium 2.0, other elements (some sixty or more in number) 2.1.

In spite of this heavy percentage of oxygen combined with the other elements in the globe's crust, many of the minerals speedily absorb oxygen, and, when atmospheric air comes in contact with any such minerals, it has a tendency to lose part of its oxygen, which is taken up by the minerals, forming new compounds, rusts or oxides. In this process of combination the minerals are partly separated from their former mechanical or chemical unions, and their bulk is necessarily increased by the addition of the oxygen. Thus this gas causes disintegration by breaking up chemical groups, and by loosening the cohesion owing to the increase of bulk. All rocks are more or less porous, atmospheric air being found in them sometimes at very great depths. The carbonic acid is also an important factor, as it combines readily with several bases and salts, its disintegrative powers on lime being very considerable.

Water is a true chemical combination of eight-ninths of oxygen and one-ninth of hydrogen, but water will readily absorb free gases, especially free oxygen and carbonic acid. Rain in falling through the air washes it, absorbing in the process a certain amount of oxygen, much carbonic acid, and, in special localities, ammonia, and sulphuric acid. Rain beating down on the rocks mechanically disintegrates it, but as most rocks are pervious to percolation of rain, the oxygen and carbonic acid it contains have special facilities for attacking the minerals they contain. So that the action of rain is both chemical and mechanical. The same is true as regards the waters of rivers, lakes, seas, etc., which erode the banks, sweep away loose parts, and by whirling hard particles along, cause further disintegration by friction, while the gases of the waters act chemically. Currents and tides also play important parts in the physical alterations of the earth's surface. Snow, though weight for weight containing less carbonic acid than rain, is a powerful source of rock decay. This is especially true as regards snowfalls in large towns where much coal is burnt or chemical manufactures are carried on, for in such cases the atmosphere of the crowded cities is heavily impregnated with carbonic acid, sulphuric acid, hydrochloric acid, and ammonia. These corrosives are easily absorbed by the falling snow, which collects in masses on the surface of stone buildings and monuments, and the best polished hard stones are ultimately affected.



Our polluted atmosphere and snow-falls are largely responsible for the bad weathering of stone, marble, and even granite in London and other towns where like conditions prevail.

Alterations of temperature are responsible for much of the "weathering" that goes on. Under the influence of heat all things expand, and in the case of rocks their porosity is, however minutely it may be, increased. A sudden fall in temperature, intense cold, causes contraction, sometimes of a very violent nature, giving rise to fractures and fissures, into which moisture filters and collects, which ultimately freezes, expanding at the same time, thereby widening the fissures and breaking up the solid rock. Frost indeed, far more effectually breaks up rocks than heat, for in nature, unless volcanic agencies are at work, heat is rarely sufficient to actually cause fissures in the solid crust of the globe. Large expanses of ice, such as glaciers, are also powerful disintegrators owing to the action of the ice in giving rise to changes of temperature, in expanding, causing friction, and acting as a graving tool, by impressing huge boulders and scoring the rock surfaces with them. Glaciers also transport rocks and rock debris. The action of ice has played a most important part in the geological history of the globe, as any geological handbook will show.

Winds beside beating against rocks and throwing down fragments loosened by other "weathering" influences, also erode rock surfaces by driving against them sharp sand particles. Winds also influence the alteration of high and low temperature, and the humidity or dryness of the atmosphere.

Plant seeds are blown by the winds, and carried by animals in all directions. They fall on the ground, and wherever favouring circumstances prevail, they germinate, take root, and grow. Many plants will spring up in the fissures of rocks, and then their powerful roots will force their way down and around, thus widening the fissure, sometimes causing fragments to fall away, and at all events opening wider the door for the action of atmosphere, rain, and wind. The chemical action of plants is due to acid in their rootlets, by means of which they are enabled to dissolve carbonate of lime, compounds of phosphoric acid, magnesite, and dolomite salts, even if contained in rocks and stones, so that plants really eat away small particles on the surface of rocks and rock fragments. Thus, when we consider how some plants spread a huge mass of lace-like rootlets deep down and far about, we can easily see that they effectually contribute to soil formation and transformation. Plants also assimilate inorganic and organic matters from the atmosphere and store them up in the soil, principally by forming humus by their decay in or on the soil. Vegetation, both land and water, helps to eat away sea coasts and river banks, especially of a calcareous nature; but it also helps to form new land, by inducing and assisting deposits of water—or drift carried particles, and adding their bulk to form a spongy network, and consistency to alluvial and drift soils.

Finally, animals burrow in soils and rocks, adding organic matter to the soil, and facilitating the effect of weathering by means of their borings. Worms, as Darwin has shown, may largely influence the alteration of soils, both by the burrowing action and by the immense quantity of earth which passes through their bodies, and is expelled in a very finely divided state as seen in their "castings." Worms will swallow small pebbles, and pieces of rock which are split up by the humic acid in the worms' stomachs. Then, this constant burrowing causes masses of earth to be more easily permeated by air and water. Submarine rocks are often honeycombed by boring worms and crustacea. The pholas and sea urchin erode the hardest rocks, not merely the calcareous, by perforation. It has been supposed that the pholas and other species employ a chemical means to soften the rocks before using mechanical action to bore them. On the other hand, polyps, molluscs, etc., by secreting lime and silica, form vast deposits with their shells and skeletons, as we shall see a little further on.

(To be continued.)

## Builders' Notes.

**Messrs. E. H. Shorland and Brother**, of Manchester, have just supplied their patent Manchester Stoves with descending Smoke Flues to the Billericay Union Infirmary, Essex.

**Emmanuel Church, Exeter**, has been placed in the hands of John King, Limited, Engineers, Liverpool, for the entire warming and ventilation by their latest improved hot water apparatus and patent tubular exhaust ventilators.

**The Dublin Master Builders' Association** held their annual dinner on Feb. 11th. Alderman Meade, the president of the Association, occupied the chair, and the company numbered 150. The President said that during the last year the history of their Association had been an uneventful one. In common with every other body, legislation had been busy with them. He believed that the Workmen's Compensation Act, when properly understood, would be considered a good and not a very expensive one after all, because, of course, they had their friends the insurance companies to rely upon.

**The City Lunatic Asylum at Stone**, near Dartford, is to be enlarged and improved, at a cost of £85,850. The original estimates—£70,000—which the Common Council accepted in October, 1897, included amounts for the warming, heating, lighting, and engineering works in connection with the new building; but further inquiry has led to the condemnation of existing boilers, the replacing of which, together with the installation of the electric light in the asylum, has necessitated an increase in the expenses of £15,850. The Corporation have sanctioned the additional expenditure.

**The Grimsby Master Builders' Association** held their annual dinner last Friday week. Alderman G. Doughty, M.P., stated that the trade of the port would be enormous in the future if proper facilities were afforded it. He advocated the provision of a large deep-water dock fifty or sixty acres in extent, and said that, with the increased trade this would bring to the port, he believed that the population of Grimsby, instead of being 60,000, would soon be 120,000. Their rivals at Hull were on the alert. They could not agree among themselves, or Hull would have started on their new dock before now. If Hull got the Bill passed, giving them power to make a deep-water dock to accommodate steamers of any size and capacity, that port would certainly become a much more powerful rival to the port of Grimsby than it had been in the past. He acknowledged what the enterprise of the Great Central Railway Company had already done for Grimsby, but pointed to the great advantages which the proposed new deep-water dock would confer both on the town of Grimsby and the Railway Company themselves. He hoped that the Company would seriously consider the matter, so that before long Grimsby might at least be placed on the same competitive terms as Hull.

**Tests with Fire-Resisting Materials.**—The first official test, under the auspices of the British Fire Prevention Committee, took place at the Testing Station, off Regent's Park, last Wednesday afternoon. The subject under investigation was a floor, constructed by the Expanded Metal Company Limited. Sir Arthur Blomfield, A.R.A., attended to represent the Council, and among the ten representatives of the committee were: Messrs. Arthur M. Watson, District Surveyor, St. George's, Hanover Square; Bernard Dixie, A.R.I.B.A., District Surveyor, East Newington; Benjamin Tabrar, F.R.I.B.A., District Surveyor, Greenwich; Frederick Hammond, F.R.I.B.A., District Surveyor, East Hampstead; Edmund Woodthorpe, M.A., District Surveyor, Northern Division of the City of London. The test was conducted by a special

sub-Committee of the Executive, comprising Mr. Max Clarke, A.R.I.B.A. (Directing Member), Mr. Ellis Marsland (District Surveyor, Camberwell), and Mr. Charles E. Goad, C.E., with Mr. Edwin O. Sachs (Chairman of the Executive), and Mr. F. Farrow (Chairman of the Commercial Section), *ex-officio*. Among the special visitors was the Technical Attaché of the German Embassy (Mr. H. Muthesius). The official illustrated report will be issued in due course. Some account of the testing station, and of the aims and methods of the committee appeared in our issue dated February 1st.

**Prices of Metals.**—The metal markets have been more or less disorganised by the phenomenal advances which have taken place during the past few months. All the leading metals have been simultaneously affected, and have been moving upwards by leaps and bounds. Tin, which touched £100 for Straits early in January, has rapidly moved up to £112, and English tin touched £117 in Birmingham the other week. Tin is now falling, however, and is at £104 to £109. The result has been the re-opening of long disused mines in Cornwall and South Wales, and new life has been given to the decaying Cornish industry. Copper has rapidly advanced to about £73, representing nearly £20 rise on the normal rate for Chili bars last year. Spelter is realising £28, the highest figure recorded, and fully £10 above the average for several years past. Lead at £14 10s. is £1 dearer than at Christmas. Iron and steel quotations are rapidly rising to the level of 1891. Ordinary Siemens steel plates have risen £2, to £8, in three months; best tinne sheets, £2, £26 for doubles; ordinary black sheets, 30s. to £7 10s.; common bars over £1 to £6 15s. upwards. Pig iron has steadily and continuously risen during the twelve months, Derbyshire and Northamptonshire grey forge realising 52s. to 54s. The metal markets are in a state of excitement, and it is thought that when the inevitable reaction ensues widespread ruin will follow.

**The London Building Act.**—In a case, *Drury v. Rickard*, heard recently in the Queen's Bench Division the district surveyor, under the London Building Act of 1894, for the district of St. Margaret's, Westminster, appealed against a decision of Mr. Marsham, sitting at the Westminster Police Court, dismissing a complaint against the respondent, a builder, for not, after notice, amending some irregularities which the appellant said he had committed under the Act. The property in regard to which the proceedings arose was situated in Victoria Street and Orchard Street, and what was known as the Orchard Street catastrophe, by which seven people lost their lives, took place upon a block of it. The complaint was that the buildings had, in contravention of the Act, been raised to a height exceeding 80ft. without the consent of the County Council, but for the respondent it was contended that the buildings came within the exemption contained in the Act applying to structures vested in or in the occupation of a Department of Her Majesty's Government, because the Office of Works had an agreement to take them on lease for Government offices as soon as in the opinion of the officers of the Department they should be fit for occupation. At the time in question, however, the officers had not certified that they were so fit. The magistrate held that the buildings came within the exemption, and dismissed the complaint, subject to the decision of this Court upon a case which he stated. The magistrate mentioned that he had not dealt with two other points raised, viz., whether the buildings were exempt because they had been begun before the Act came into operation, and whether the County Council had acquiesced in their being raised beyond the prescribed height.—The Court held that the magistrate was wrong in holding that the building was exempt as being vested in or in the occupation of a Government Department, but sent the case back to him to deal with the two points which he had left undecided.



## Masters and Men.

**Increases in Wages Rates** affecting 578 men in the building trades are reported by the Board of Trade as having taken place during January. No decreases are reported.

**Employment during January** has been good in all the building trades, except painting and plumbing. The percentage of unemployed Union members at the end of January was 1·7, compared with 2 per cent. in January, 1898.

**The Chain Trade.**—The operatives employed in the country branch of the small chain trade in the South Staffordshire and North Worcestershire district have struck work for 10 per cent. advance. Some of the employers are willing to concede the increase demanded.

**Moulders at St. Helen's.**—The whole of the moulders engaged in the iron foundries of St. Helen's came out on strike last Friday week owing to the employers having declined to grant them an advance in wages. It appears that the moulders throughout the country have generally received an increase in wages, and the St. Helen's men made an application for a corresponding advance a few weeks ago. This was not conceded, and about a fortnight ago the men tendered notices to cease work if the increase was not granted in the meantime. Negotiations have since taken place between the masters and their men, but no satisfactory arrangement has yet been arrived at.

**The Plasterers' Dispute** has not yet been brought to a conclusion. At a meeting of the standing committee of the National Association of Master Builders of Great Britain, held at Derby on the 16th, a reply to the circular sent by them to the operative plasterers was read. The Union officials agreed not to insist in future upon foremen joining the Union, but denied any official knowledge of the objectionable practices complained of. This communication was considered very unsatisfactory, and a resolution was unanimously passed: "That unless the operative plasterers agree to discontinue the objectionable practices, as set forth in the masters' circular, by February 21st, they will be at once locked out."

**Liability of Employer for Contractor's Negligence.**—A case of some importance has been decided in the Queen's Bench Division. A telephone company were laying down wires under a street. They had no statutory powers, but had the consent of the local authority, and were acting lawfully. They had employed a plumber who undertook to make certain connections at so much apiece to the satisfaction of their foreman. Owing to the negligence of a workman, whom this contractor sent to make these connections, in plunging a benzoline lamp, with its safety valve out of order, into an iron pot (placed upon the foot-path) which contained melted solder, the metal flew up and injured a person passing along the street. It was held by the Queen's Bench Division (reversing the judgment of the deputy-judge of the City of London Court) that the Company were not liable for the damage, since the relationship which the plumber bore to them was not that of servant, but of contractor, and that, as the work, which was being done, was not an interference with the rights of others, and was not in the ordinary course dangerous to others, the Company were not liable for the negligence of the contractor or his servant.

**Trade Unions and their Critics.**—At the annual dinner of the Manchester Association of Engineers held on the 11th inst., Trade Unionism came in for some hard knocks.—Sir W. H. Bailey, in submitting the toast, "Engineering and Allied Trades," said there was a despotism ruling over the industries of Lancashire and the North of England more stringent than the feudal despotism we inherited from William the Conqueror. The

labour leaders of the country had tried to create a monopoly in labour just in the same way that the feudal lords created monopoly in land, and the country was suffering in consequence. In America there was Free Trade in labour, with the result that the men received 60s. a week and produced more and cheaper articles than they in Lancashire could possibly produce with wages at 36s. There was no limit to the ingenuity of man or to what man could do. In the United States no limit was placed upon man's genius, and every man had power to produce and use machinery to the best advantage, without restriction, with the result that the labourer obtained a better reward in the shape of higher wages. While in America a man could earn 50s. or 60s. a week, wages in this country were kept down to 36s., because the Trade Unionists had a standard equal to the lowest class of workmen in the whole district.—Mr. S. R. Pratt, in responding to the toast, spoke even more strongly. He quoted the late Colonel Dyer's remark, that they had to fight a relentless and ruthless enemy in the Trade Unions of this country. It must be thoroughly understood, said Mr. Pratt, that the enemy was inside their own doors, and they had to compete with him as well as with protective tariffs of other countries.—We hope Mr. Pratt's attitude is not to be taken as typical, for about the worst possible way of attempting to remedy the evils caused by the undoubted abuse of power on the part of individual unions is for employers to declare war on Trade Unionism as a whole, and publicly to assert that they regard their workmen as their enemies.

## Engineering Notes.

**A Promenade Pier** and pavilion is proposed for erection on the south beach, Ayr, similar to the piers at Blackpool and Morecambe.

**Conway Railway Station** is to be altered so as to reduce the existing curve in the permanent way considerably, thus enabling the platforms to be lengthened and widened.

**A water supply for Slingsby** is to be provided at a cost of £4556. The scheme supplies also the whole of the villages between that place and Malton as well as Butterwick and Brawby.

**Electric Lighting** is to be adopted for the town front at Rothesay, including the lighting of the harbour. The scheme is expected to cost a penny in the pound on the rates, and is estimated at £1800.

**Chichester City Council** have instructed their Surveyor to prepare plans for the consideration of an expert for the establishment of electric light works, with refuse destructor, for the lighting of the town by electricity.

**Electric Lighting in Glasgow.**—Glasgow Corporation Electricity Committee have agreed to recommend that the Corporation offer £30,000 for the buildings, plant, and rights of the Kelvin-side Electricity Company. The agents of that undertaking have stated £48,000 as the price at which they are willing to sell.

**Ipswich Railway Tunnel.**—It is stated that the Great Eastern Railway Company will most probably abandon their proposal of opening up the tunnel outside Ipswich Station, owing to the very great cost involved, and will possibly construct another tunnel alongside the present one, so as to have a double road through.

**Horsforth Waterworks Company** propose to construct for the improvement of their supply a storage reservoir in Burley-in-Wharfedale, by means of a curved embankment 445yds. in length. In connection with

this reservoir it is proposed to construct lines of aqueducts from Burley Moor. The cost of the works is estimated at £27,000.

**New Bridge across the Tyne.**—A joint meeting of the representatives of Newcastle and Gateshead Corporations was held last Monday week at Newcastle, to consider the engineers' report for the construction of a new bridge across the Tyne, between Newcastle and Gateshead. The report favoured a wider and heavier bridge than the one previously suggested. The report was adopted, and it was ordered that the estimates be printed and circulated amongst the members of a joint committee. It was also arranged that another meeting be held in the course of a month.

**A Distinguished French Engineer.**—The selection by the Institute of Civil Engineers of M. Picard, Commissioner General for the Paris Exhibition of 1900, as an honorary member, in succession to the well-known ironmaster the late M. Schneider, of Creusot, is stated by the Paris correspondent of the "Times" to have given great satisfaction in Paris. M. Picard, after a distinguished career at the Ecole Polytechnique, entered the Government service as an engineer, and is now Senior Inspector General of the Ponts et Chaussées, and also a member of the Conseil d'Etat, where he presides over the section which deals with engineering and industrial questions.

**The Great Nile Dam** at Assouan, of which the foundation stone was laid by the Duke of Connaught last Sunday week, is to be an unsubmergible masonry dam pierced with numerous under-slues. The dam will stretch across the Nile, with sluices and a long chain of locks, at a point where the river is nearly a mile in width. With the approaches, the length of the dam itself will be a mile and a quarter from side to side. The height of its coping-stone above the bed of the lower river will be 300ft. It will dam back the waters of a river which is a mile wide, which is 30ft. deep, and which flows at a high velocity, 66ft. above their present level. An enormous lake will thus be formed, and the stored up water will be thrown into already existing canals at a sufficiently high level to irrigate a vast tract of country. The work will cost about £2,000,000, but it will be cheap at the price if, as is estimated, it has the effect of increasing the productiveness of Egypt to the extent of £12,600,000 a year. Messrs. Aird and Co. are the contractors, and they have some 5000 men engaged on the work.

**Birmingham Engineers.**—The annual dinner of the Birmingham Association of Mechanical Engineers was held on the 11th inst. Mr. J. Powell Williams (Financial Secretary to the War Office), who presided, referred at length to recent engineering developments in relation to military matters. Mr. H. F. Donaldson in proposing "Prosperity to the Association," referred to machine-tools and labour-saving appliances. He was afraid there was no use blinking the fact that the Americans were ahead of us in this department, and he suggested that engineers should make themselves acquainted with what the Americans had done, and then go one better. Those who represented engineering firms in foreign countries needed to take a lesson from the Germans and be more ready to fulfil the requirements of their clients, and the manufacturers should send their productions in such a form as would appeal to the requirements and tastes of the countries for whom they were catering. That, together with the excellence of British manufactures, would still keep them at the head of the poll. With regard to tramways, he was told that in Birmingham the street cars were run by four different sorts of traction. Might he suggest that the horse was a very good thing, but it was not in its place in front of a tramcar. Then if they divided their energy they might be doing wrong. He would strongly urge that one power should be chosen, and that only should be used.



# Surveying and Sanitary Notes.

**Cromer Sanitation.**—At a meeting of the Cromer Urban Council last week, it was decided that the surveyor, in conjunction with Messrs. Cameron, and after consultation with Mr. Douglass, the engineer to the Protection Commissioners, should prepare the necessary plans for the Local Government Board in connection with the proposed septic tank system of sewage treatment.

**Sanitary Inspectors' Association.**—An influentially attended meeting was held in the Guildhall, Lincoln, to consider a proposal of the Sanitary Inspectors' Association to hold its annual conference in Lincoln during the coming summer. It was decided "that this meeting approves of the proposal of the Sanitary Inspectors' Association to hold their annual conference from the 3rd to the 5th of August, 1899, in this city, and will use its best efforts to make that conference a success." The conference is to be supplemented by an exhibition of modern appliances connected with sanitary science, in the Drill Hall.

**The Manchester and Salford Sanitary Association** held its annual meeting on February 13th, Dr. D. G. Leech presiding. The report showed that the Association has during the past year engaged in many forms of activity in the interests of the public health. It has urged upon the Manchester Corporation—hitherto without success—the desirability of establishing cottage baths; that is, that one or two cottages should be taken and fitted up with several baths for the use of women and children who would never visit large institutions. It has taken steps in the matter of the disposal of the town's sewage, and the abate-

ment of nuisances arising from chemical works and smoky chimneys, and has been active in urging the more effective treatment of consumptive patients by the erection of sanatoria, &c.

**London Water Supply.**—At the meeting on Feb. 13th of the Royal Commission appointed to inquire into the Metropolitan Water Supply, the Engineer to the Southwark and Vauxhall Water Company was examined. He said that complaints of the quantity or quality of the water supplied were very few indeed—practically one in every half million persons supplied. Their supply did not fall short last year. Sir A. Binnie's scheme of separating the County of Surrey from the County of London was based on an erroneous idea as to the capacity of certain mains. The carrying power of some of these would be lost to a great extent if Sir Alexander's scheme were carried out, as they would then be larger than was necessary. It would be impossible to separate the inlet works—at all events it would be much cheaper to reconstruct the works than to attempt to alter them. It would, however, be possible to separate the distribution plant between Surrey and London, but this could not be done in respect to the inlet works.

**Manchester Sewage.**—From the last report on the Davyhulme works, it appears that the first four weeks of 1899 established a record for the quantity of sewage flowing through the precipitation tanks. The first four weeks of last year showed a total flow of 548,000,000 gallons, whereas the quantity which passed through the works during the similar period this year reached the enormous figure of 1,003,547,000 gallons. During December last the Davyhulme works were called upon to deal with 912,123,000 gallons of sewage. The immensity of these quantities is accounted for by the heavy rains which were pre-

valent at the end of last year and the beginning of this. The general average of the sewage flow is only about 24 million gallons per day, whereas during the past month it has averaged nearly 36 million gallons. This unusual flow of liquids has created other difficulties at Davyhulme. The quantity of solids, cinders, &c., carried down by the storm water and deposited in the precipitation tanks is without any previous parallel.

**The L.C.C. Water Bills.**—At a recent meeting of the London County Council, Mr. Cornwall, Chairman of the Parliamentary Committee, replying to a number of questions, said that no objection had been raised to the Council's Water Purchase Bill, which would proceed to second reading in due course. As to the Welsh Reservoirs Bill, the Water Companies had sent a staff of officers to Wales to check the referencing of the Council, and had lodged about 700 objections to that referencing, most of which were of a very trifling nature. A few of the objections had been sustained by the examiner, who would report upon them to the Standing Orders Committee. In view of the large area of ground which the Council had had to cover, it was doubtless easy for the Water Companies to find small instances of non-compliance with the Standing Orders. It was generally admitted by the Water Companies or their representatives before the Examiner, that the case was entirely got up by the Water Companies, who had doubtless paid their witnesses for coming up to London. What these expenses amounted to he was not prepared to say. The witnesses were entirely under the charge of the officers of the Companies, and any of the Council's officers who approached them were at once brushed aside by the paid representatives of the Water Companies. The expenses incurred would unquestionably come indirectly out of the pockets of the consumers.

## COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—</b>			
Feb. 24	Hipperholme—Erection of Three Houses ... ..	Equitable & Industrial Co-op. Soc. Ltd.	R. Berry, Architect, Arcade-chbrs., Commercial-st., Halifax
" 24	Fletton, Peterborough—Erection of Shops, &c. ... ..	"	Townsend & Fordham, Architects, Cross-st., Peterborough.
" 24	Earl Sheaton, Yorks.—Alteration of High Close ... ..	"	F. W. Ridgway, Architect, Borough Chambers, Dewsbury.
" 25	Hebden Bridge—Erection of Hotel ... ..	Brewery Company ... ..	W. C. Williams, 29, Southgate, Halifax.
" 25	London, W.—Erection of School ... ..	Aske's Haberdashers' Schools' Managers	H. Stock, 9, Denham-street, London Bridge, S.E.
" 25	Warminster—Vagrant Wards ... ..	Workhouse Guardians ... ..	Master of Workhouse, Warminster.
" 25	Westport, Ireland—Post Office ... ..	Public Works Department ... ..	H. Williams, Secretary, Office of Public Works, Dublin.
" 25	Tipton, Staffs.—Laying-out Park ... ..	Urban District Council ... ..	W. H. Jukes, Council's Surveyor, Owen-street, Tipton.
" 25	London—Works and Repairs ... ..	H.M. Commissioners of Works ... ..	Office, Storey's Gate, Westminster.
" 25	Ashton, Breage, Cornwall—House and Shop ... ..	Corporation ... ..	Mrs. J. Eustace, Ashton.
" 25	Burton-upon-Trent—Extension of Electric Light Works	Urban and Rural District Councils	F. L. Ramsden, Electric Light Works, Burton-upon-Trent.
" 25	Chertsey—Rebuilding Bridge ... ..	"	W. Durrant, Surveyor, Addlestone.
" 25	Clayton, near Bradford—House and Two Shops ... ..	"	S. Spencer, 344, Great Horton-road, Great Horton, Bradford.
" 25	Egremont, Cumberland—Four Dwelling Houses ... ..	Urban District Council ... ..	C. Mossop, Butcher, Main-street, Egremont.
" 25	Keswick—Wall, &c. ... ..	Tregarthen's Hotel Company Ltd.	W. Hodgson, Surveyor, Town Hall, Keswick.
" 25	St. Mary's, Scilly—Hotel Wing, &c. ... ..	"	O. Caldwell, Architect, Penzance.
" 25	Hovingham, Malton, Yorks.—Rebuilding Stone Bridge	"	W. Stead, County Surveyor, Northallerton.
" 27	Earlsheaton, Yorks.—Extension of Weaving Sheds ... ..	United District School Board ... ..	F. W. Ridgway, Architect, Borough-chambers, Dewsbury.
" 27	Hastings—School Alterations ... ..	United District School Board ... ..	Elworthy and Son, Architects, London-road, St. Leonards.
" 27	Hastings—Fitting up Technical Schools ... ..	United District School Board ... ..	A. Wells, Architect, Queen's-chambers, Hastings.
" 27	Hastings—Repairs, Additions, &c. ... ..	United District School Board ... ..	A. Dray, Architect, Town Hall-chambers, Hastings.
" 27	Leeds—Police Station and Library ... ..	Dr. E. E. Dufty ... ..	City Engineer, Municipal Office, Municipal-buildings, Leeds.
" 27	Mashborough—Erection of Residence ... ..	"	G. H. Johnson, 38, High-street, Rotherham.
" 27	Patterdale, Westmoreland—Erection of Masonry Bridge	"	J. Bintley, 7, Lowther-street, Kendal.
" 27	Penwortham, Preston—Classroom, &c., at School ... ..	Lighting Committee ... ..	— Swindells, 3, Canon-street, Preston.
" 27	Llanrwst Major—Re-paving Church ... ..	Great Western Railway ... ..	G. E. Halliday, Architect, Cardiff.
" 27	Wolverhampton—Extension of Electric Light Station..	Local Board of Health ... ..	J. W. Bradley, Town Hall, Wolverhampton.
" 28	St. Erth, Cornwall—Two Cottages ... ..	County Council ... ..	Engineer, G.W.Rly. Station, Plymouth.
" 28	Woolwich—Stabling, &c. ... ..	Urban District Council ... ..	J. A. Cook, 1a, Eleanor-road, Woolwich.
" 28	London, S.W.—Two Cottages... ..	"	Engineer's Department, County Hall, Spring-gardens, S.W.
" 28	Buxton—Rebuilding Bridge ... ..	"	Council's Surveyor, Town Hall, Buxton.
" 28	Halifax—Erection of Barn, &c. ... ..	School Board ... ..	R. Horsfall and Son, 22a, Commercial-street, Halifax.
" 28	Sheffield—School Additions, &c. ... ..	Brightside & Carbrook Co-op. Soc. Ltd.	C. J. Innocent, 22, High-street, Sheffield.
" 28	Sheffield—Branch Stores, &c. ... ..	"	H. Webster, St. Marie's-chambers, Norfolk-row, Sheffield.
arch 1	Ulverston—Church, &c. ... ..	Congleton Union Guardians ... ..	J. Wills, Architect, St. Peter's Churchyard, Derby.
" 1	Archid, near Sandbach—Infirmary at Workhouse ... ..	Portsea Island Union Guardians	A. Price, Architect, Elworth, Sandbach.
" 1	Portsmouth—Rebuilding Store, &c. ... ..	Commissioners of H.M. Works ... ..	G. C. Vernon-Inkpen, Whittington-chambers, Southsea.
" 1	Tywing, Yorks.—Church Restoration ... ..	"	T. Moore, 46, Well-walk, Hampstead, N.W.
" 2	Hampton Court, Kew, and Richmond—Repairs &c., to Public Buildings	"	R. B. Brett, Sec., H.M. Office of Works, Storey's-gate, S.W.
" 3	Sowerby Bridge, Yorks.—Erection of Schools ... ..	School Board ... ..	C. F. L. Horsfall and Son, Lord-street-chambers, Halifax.
" 3	Leeds—Alterations, &c. ... ..	Trustees ... ..	S. E. Smith and J. Tweedale, 12, South-parade, Leeds.
" 3	Norton, near Cannock, Staffs.—School Additions ... ..	"	Rectory, Norton Caves, near Cannock.
" 4	Buckie, Scotland—Erection of Masonry Bridge ... ..	Guardians ... ..	J. Barron, 1, Bon Accord-street, Aberdeen.
" 4	Omagh, Ireland—Cemetery Works ... ..	King James's Gram. School Governors	J. L. Donnelly, 2, Bridge-street, Omagh.
" 4	Knarborough—School Buildings ... ..	County Council ... ..	W. Gill, Secretary to Governors, Knarborough.
" 6	Clayton-le-Dale, Lancs.—Bridge Works ... ..	Gas Company Limited ... ..	County Bridgemaster's Office, County Offices, Preston.
" 6	Shoeburyness—Gas-holders, &c. ... ..	Very Rev. Canon Shanahan	H. J. Robus, 20, Bucklersbury, London, E.C.
" 6	Thornaby-on-Tees—Infants' School ... ..	Hospital Board ... ..	E. Goldie, 31, Upper Phillimore-place, Kensington, W.
" 6	Tiverton—Hospital Buildings... ..	Gas Commissioners ... ..	J. Siddals, Tiverton.
" 6	Edinburgh—Chimney Stack ... ..	H.M. Commissioners of Works ... ..	W. R. Herring, Gasworks, Edinburgh.
" 6	Putney, S.W.—Sorting Office ... ..	Glyncorrwg Board School... ..	H.M. Office of Works, Storey's-gate, Westminster, S.W.
" 7	Aberwynn, Wales—School Alterations, &c. ... ..	Glasgow International Exhibition	O. P. Lambert, Architect, Bridgend.
" 15	Glasgow—Exhibition Buildings ... ..	County Asylum ... ..	F. A. Heuley, 141, Buchanan-street, Glasgow.
ril 4	Kesteven—Superstructure of Lunatic Asylum ... ..	"	G. T. Hine, 35, Parliament-street, S.W.



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—</b>			
Feb. 24	Llantadarn, Wales, Water Supply Scheme	Aberystwyth Rural District Council	G. Jones and Son, Architects, Aberystwyth.
" 26	Christiania—Porcelain Telegraph, &c., Insulators	Norwegian State Telegraph Administration	Commercial Department, Foreign Office, S.W.
" 27	Merthyr Tydfil—Reservoirs, &c.	Urban District Council	T. F. Harvey, Engineer, Town Hall, Merthyr Tydfil.
" 27	Sheffield—Electric Light Plant	Ecceall Bierlow Union Guardians	J. D. Webster, 19, St. James-street, Sheffield.
" 27	Edinburgh—Electric Light Plant, &c.	Magistrates and Council	Resident Engineer, Dewar-place, Edinburgh.
" 28	Belfast—Erection of Steel Roof, &c.	Great Northern Rly. Co. (Ireland)	Company's Engineer-in-Chief, Amiens-st. Terminus, Dublin.
" 28	Llandilo, Bynae, and Pembrey—Bridges, &c.	Great Western Railway Company	Engineer, G.W. Rly. Station, Neath.
" 28	Oldham—Two Boilers	Corporation Electric Light Committee	Prof. Kennedy, 17, Victoria-street, Westminster.
" 28	Gloucester—Condensers, Air Pumps, &c.	Electricity Supply Committee	R. Hammond, 64, Victoria-street, Westminster.
" 28	Wakefield—Waterworks	Corporation	C. C. Smith, Engineer, Townhall, Wakefield.
" 28	Rhos, Denbighshire—Construction of Railway	Great Western Railway Company	Engineer, Paddington Station, London.
March 1	Manchester—Passenger Lift at Town Hall	Corporation	Rison, Town Hall Steward, Manchester.
" 1	Llanidloes—Reservoir	Town Council	A. Davies, Town Clerk, Llanidloes.
" 2	Cairo—Iron Canal Bridge	Public Works Department	The Inspector, Second Circle of Irrigation, Cairo.
" 3	Edinburgh—Aqueduct, Bridges, &c.	Water Trustees	J. Wilson, 72a, George-street, Edinburgh.
" 4	Sheffield—Bridges	Improvement Committee	C. F. Wike, City Surveyor, Town Hall, Sheffield.
" 13	Letterkenny, &c., Ireland—Railways	Gas Commissioners	T. M. Batchen, 9, Ship Quay-street, Londonderry.
" 15	Dundee—Electrical Plant	Gas Commissioners	W. H. Tittensor, Dundee-crescent-road, Dundee.
" 25	Edinburgh—Chemical Plant	Gas Commissioners	W. R. Herring, Engineer, Gasworks, Edinburgh.
May 17	London, E.—Construction of Wells, &c.	Poplar Union	E. J. W. Stevens, 34, Victoria-street, S.W.
June 30	Shanghai—Tramway Concession	Municipal Council	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
<b>IRON AND STEEL—</b>			
Feb. 24	Swansea—Supply of water-pipes, &c.	Town Council	Waterworks Engineer, Guildhall, Swansea.
" 24	London, S. W.—Steel Cylinder, &c. for Bridge Piers	Uganda Railway Committee	Crown Agents for the Colonies, Downing-street, S.W.
" 25	London, S.W.—Gas Fitters' Work	H.M. Commissioners of Works	Office, Storey's Gate, Westminster.
" 27	Hastings—Gas Fittings, &c.	United District School Board	A. Wells, Architect, Queens-chamber's, Hastings.
" 28	Pontypool—Fire Appliances, &c.	Guardians	T. Watkins, Clerk, Union Offices, Club-chambers, Pontypool.
" 28	Ilford, Essex—Fencing	Urban District Council	H. Shaw, 7, Cranbrook-road, Ilford.
" 28	London, E.C.—Sewer Ironwork, &c.	St. Luke's (Middlesex) Vestry	Surveyor, St. Luke's Vestry Hall, City-road, E.C.
" 28	London, E.C.—Railway Stores	South Indian Railway Co. Ltd.	Sir G. B. Bruce, 3, Victoria-street, Westminster.
March 1	Rugby—Fencing	Urban District Council	D. G. Macdonald, Surveyor, Rugby.
" 1	Christiania—Bogie Wagons, &c.	Norwegian State Railways	Commercial Department, Foreign Office, S.W.
" 6	Glasgow—Tramway Rails, &c.	Corporation	J. Young, 85, Renfield-street, Glasgow.
" 7	Gorton—Railway Carriages	Cheshire Linss Committee	T. Parker, jun., Carriage Superintendent, Great Central Railway Works, Gorton.
<b>ROADS AND CARTAGE—</b>			
Feb. 24	Hardingstone, Northants—Materials, &c.	Rural District Council	J. Harviland, 2, St. Giles's-square, Northampton.
" 24	Warley, Near Halifax—Quarrying Setts	Urban Council	J. Eastwood, Surveyor, Luddenhall.
" 24	Totnes—Repair of Main Roads	Rural District Council	T. W. Windatt, Clerk, Union Workhouse, Totnes.
" 25	Cupar, Scotland—Quarry, Casting and Breaking Metal	County Council	T. Attkin, Surveyor, County Buildings, Cupar.
" 25	Bedford—Road Metal	County Surveyor, Shire Hall, Bedford.	
" 25	Hexham—Making New Road, &c.	Bridge End Committee	G. F. Surtees, 7, St. Cuthbert's-terrace, Hexham.
" 25	Johnstone, N.B.—Forming Crossings, Street Channels &c.	Police Commissioners	P. Kerr, Burgh Surveyor, Johnstone.
" 25	Llandaff, Cardiff—Works and Materials	Rural District Council	The Surveyor, Council's Offices, 35, St. Mary-street, Cardiff.
" 25	Meriden, Coventry—Supply of Granite	Rural District Council	A. Seymour, 11, Priory-street, Coventry.
" 25	Northampton—Team Labour	Rural District Council	R. W. Wood, 14, Guildhall-road, Northampton.
" 25	Chelmsford—Team Labour	Essex County Council	J. Sheldon, Chief Surveyor, Duke-street, Chelmsford.
" 25	Horncastle, Lincolnshire—Road Material	Rural District Council	J. E. Chatterton, Clerk, Horncastle.
" 25	Lewes—Materials, &c.	East Sussex County Council	F. J. Wood, County Surveyor, County Hall, Lewes.
" 27	London, W.—Materials	St. Mary Abbots' Vestry, Kensington	W. C. Leebe, Town Hall, Kensington High-street, W.
" 27	Sheffield—Works and Materials	Highway and Sewerage Committee	C. F. Wike, City Surveyor, Town Hall, Sheffield.
" 27	Motherwell, Scotland—Road Metal	Commissioners	Burgh Surveyor, Town Hall, Motherwell.
" 27	Culham, Abingdon—Hartshill Stone	Rural District Council	B. Challenor, 59, Sturt-street, Abingdon.
" 27	Nottingham—Materials, &c.	County Council	E. P. Hool-y, Shire Hall, Nottingham.
" 27	Macclesfield—Materials	Rural District Council	Assistant Clerk, Union Offices, Macclesfield.
" 27	Wolverhampton—Street Works	Streets Committee	J. W. Bradley, Borough Surveyor, Wolverhampton.
" 28	London, E.C.—Works and Materials	Shoreditch Vestry	H. M. Robinson, Clerk, Shoreditch Town Hall, Old-st., E.C.
" 28	Stratford, E.—Street Works	County Borough of West Ham	L. Angill, Town Hall, West Ham, E.
" 28	London, S.E.—Works and Materials	Lewisham Board of Works	Surveyor, Town Hall, Catford, S.E.
" 28	Dover—Supply of Broken Flints	Town Council	E. W. Knocker, Town Clerk, Castle Hill House, Dover.
" 28	Selby—Asphalte or Tar Macadam	National Schools Managers	Rev. A. G. Tweedale, The Vicarage, Selby.
March 1	London, S.E.—Materials	St. Saviour's Board of Works	G. R. Norrish, Surveyor, Emerson-street, Bankside, S.E.
" 1	Bournemouth—Works and Materials	Town Council	F. W. Lacey, Borough Surveyor, Bournemouth.
" 1	Rochester—Cartage, &c.	Corporation	City Surveyor, Guildhall, Rochester.
" 1	Clacton-on-Sea—Road Works	Urban District Council	A. R. Robinson, Surveyor, Town Hall, Clacton-on-Sea.
" 1	Dunmow, Essex—Stone, Gravel, &c.	Rural District Council	J. S. Macgregor, Highway Surveyor, Great Dunmow.
" 1	Hardingstone, Northampton—Team Labour	Rural District Council	G. A. Norton, Surveyor, Far Cotton, Northampton.
" 1	Litherland, Lancs.—Materials	Urban District Council	W. B. Garton, 25, Sefton-road, Litherland.
" 1	Middleton, Lancs.—Street Works	Urban District Council	W. Welburn, Borough Surveyor, Town Hall, Middleton.
" 1	Northampton—Materials	Rural District Council	W. Tomalin, 14, Guildhall-road, Northampton.
" 1	Wakefield—Team Labour and Materials	Rural District Council	F. Massie, Engineer, Tetley House, Wakefield.
" 2	London, W.—Asphalte Paving	St. James's Vestry, Westminster	T. H. Munsey, Vestry Clerk, Vestry Hall, Piccadilly, W.
" 2	Brixworth, Northants—Materials	Rural District Council	W. H. Wykes, District Surveyor, Northampton.
" 2	London, E.—Blue Guernsey Granite	Bethnal Green Vestry	F. W. Barratt, Vestry Hall, Church-road, Bethnal Green, E.
" 4	London, S.E.—Ballast and Sand, &c.	Bermondsey Vestry	F. Ryall, Vestry Clerk, Bermondsey Town Hall, Spa-road.
" 4	Wolverhampton—Materials	Corporation	J. W. Bradley, Borough Engineer, Wolverhampton.
" 4	Bridgewater—Haulage, &c.	Rural District Council	T. M. Reed, Clerk, Workhouse, Bridgewater.
" 6	London, N.W.—Horsing, &c., Dust Vans	St. Pancras Vestry	C. H. F. Barrett, Vestry Hall, Pancras-road, N.W.
" 6	Abingdon—Supply of Hartshill Stone	Rural District Council	B. and E. M. Challenor, 59, Sturt-street, Abingdon.
" 6	Belford—Road Works, &c.	Rural District Council	A. J. Ware, District Surveyor, Belford.
" 6	London, S.E.—Granite, &c.	Rotherhithe Vestry	J. J. Stokes, Town Hall, Lower-road, Rotherhithe, S.E.
" 7	Maidstone—Road Works	Kent County Council	E. W. Ruck, 86, Week-street, Maidstone.
" 8	London, S.W.—Materials	Fulham Vestry	Town Hall, Waltham Green, S.W.
" 14	Bath—Road Materials	Urban Sanitary Authority	C. R. Fortune, City Surveyor, Guildhall, Bath.
<b>SANITARY—</b>			
Feb. 25	St. Anne's-on-Sea—Sewers, &c.	Urban District Council	H. Bancroft, 88, Mosley-street, Manchester.
" 25	Ardley, near Barnsley—Scavenging	Urban District Council	T. Harper, Surveyor to Council, Stairfoot.
March 1	Burton-upon-Trent—Stoneware Pipe Sewers	Corporation	G. T. Lynam, Town Hall, Burton-upon-Trent.
" 1	Litherland, Lancs.—Removal of Night Soil, &c.	Urban District Council	W. B. Garton, Surveyor, 25, Sefton-road, Litherland.
" 3	Uxbridge—Drainage Works	Rural District Council	J. Anstie, 10, Marchwood-crescent, Ealing.
May 12	Johannesburg—Sewerage Scheme	Urban District Council	Town Engineer, Johannesburg.

## COMPETITIONS.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
Feb. 24	Northwich—Two Story Dwelling House	£20, £10, £5	Northwich Salt Compensation Board, Wimmington-street.
" 28	Knutsford—Laying-out Cemetery, &c.	£20, £10	W. J. Downes, Surveyor, Urban District Council, Knutsford.
" 28	London, S.W.—Covered Sanitary Dust-cart	£25	Clerk, London County Council, Spring Gardens, S.W.
March 1	Northwich—Dwelling-house on Land Liable to Subsidence	£20, £10, £5	Salt Compensation Board, Northwich.
" 4	Beverley—School Buildings	£25, £10	Beverley Grammar School.
" 22	London, E.C.—Additions to Town Hall	£50, £25	Shoreditch Vestry.
" 30	Doncaster—Design for Master's House	£50, £25	Doncaster Grammar School Trustees.
" 31	Ramsgate—Concert Hall, Reading Room, &c.	£50, £20, £10	T. G. Taylor, Surveyor to Corporation, Broad-st., Ramsgate.
" 31	Forfar—Isolation Hospital	£31, 10s., £21, £15 15s.	Dundee and Forfar District Committees.
April 14	Bradford—Cartwright Memorial Hall and Art Gallery	£150, £100, £50	City Surveyor, Bradford.
June 1	Leeds—Market Hall and Shops	£150, £100, £50	Corporation.
No date	Hexham—Vagrant Wards at Workhouse	£20	J. H. Nicholson, Clerk, Midland Bank-chambers, Hexham.
"	London, S.W.—Design for Board Room, Offices, &c.	£100, £60, £40	Wandsworth and Clapham Union Guardians



## Property and Land Sales.

**ERMILE PARK**, near Cobham, Surrey.—A FREEHOLD BUILDING ESTATE of about 40 acres, with possession.

**MESSRS. DRIVER and CO.** have received instructions to offer to AUCTION at the MART, Tokenhouse-yard, Lothbury, NEXT SPRING (unless previously sold by private contract), the above property, situate in a favourite residential district, about a quarter of an hour's walk from the Oxshott and Fairlie Station, and about a mile and a half from Cobham. The estate comprises Building Land, ripe for development, the higher portion (sloping to the south) offering charming views over the intervening country (from Downs); and a Residence known as "South Lodge," with stabling and garden; Eight small Villas, the Cottages, and the "Griffin" Beerhouse. On a portion of the estate brickearth is being worked, and be included in the sale as a "going concern."

Particulars and plans, when ready, can be obtained of **MESSES JUPP, Esq., Solicitor**, 48, Lime-street, E.C.; or of **Messrs. DRIVER and Co.**, 23, Pall Mall, S.W.

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REVERSIONS (Absolute and Contingent), LIFE INTERESTS and ANNUITIES, LIFE POLICIES, Shares and Debentures, Mortgage Debts and Bonds, and Kindred Interests,

on the FIRST and THIRD THURSDAYS in each month throughout the year, at the MART, Tokenhouse-yard, E.C.

The following are the appointments fixed for 1899:—

1st	June 15th	October 5th
2nd	July 6th	October 19th
3rd	July 20th	November 2nd
4th	August 3rd	November 16th
5th	August 17th	December 7th
6th	September 7th	December 21st
7th	September 21st	

at the MART, Tokenhouse-yard, E.C. Telephone No. 999

**Order of Trustees.**—Preliminary Advertisement.—Reheold Building Estate, Streatham, near West End Road Railway Station.

**MESSRS. FIELD and SONS**, and **Messrs. WILFORD and WILSHIN**, who are jointly concerned, will SELL by AUCTION, at the MART, at early date, a valuable FREEHOLD BUILDING ESTATE, known as High View Park, comprising 16a. 0p., lying immediately at the rear of and with access from Leigham Court-road; also a contiguous Reheold Building Site of 2a. and 5p. in a new road intended to connect Canterbury-grove with Thurlby-

Particulars and plan, in due course, of **Messrs. KINGS-PORTMAN and Co.**, Solicitors, 23, Essex-street, and of **Messrs. WILFORD and WILSHIN**, Auctioneers, Anerley, S.E.; and of **Messrs. FIELD and SONS**, Agents.

and Syndicates, Building Societies, Capitalists, and others.

**VER.**—Important Freenold Building Estate of over 40 acres, with residence, known as Barrow Point, occupying a beautiful position close to the quaint old village of Pinner, within five minutes from the railway station on the Metropolitan line, and extending to an area of about 1 mile of Pinner Station on the London and North-Western Railway, having easy access from the West-end and City. The whole ripe for immediate building operations, and admirably adapted for villa residences of a superior class.

**MESSRS. FAREBROTHER, ELLIS, EGERTON, BREACH, GALSORTHY**, and others, beg to announce that the above valuable PROPERTY, which they recently offered for Sale by auction, may now be treated for privately. Apply to **Messrs. FAREBROTHER, 29, Fleet Street, Temple Bar**, and **18, Old Broad Street, E.C.**

**CONTRACTORS, CAPITALISTS, and OTHERS.**—Valuable Quarry, Light Railway, and Estate, situate in South Wales, to be sold as a whole. Further particulars apply to **J. W. DAVIDSON**, Esq., 6, Castle Street, Liverpool.

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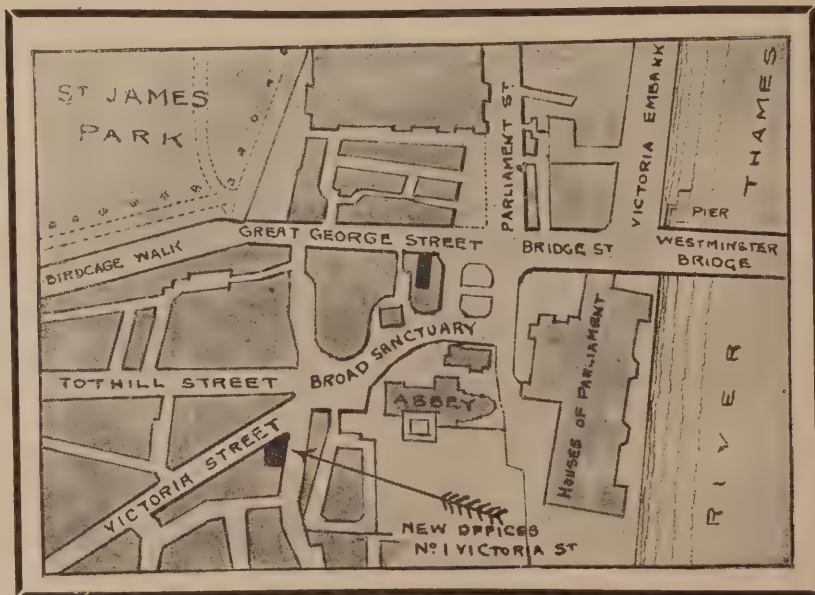
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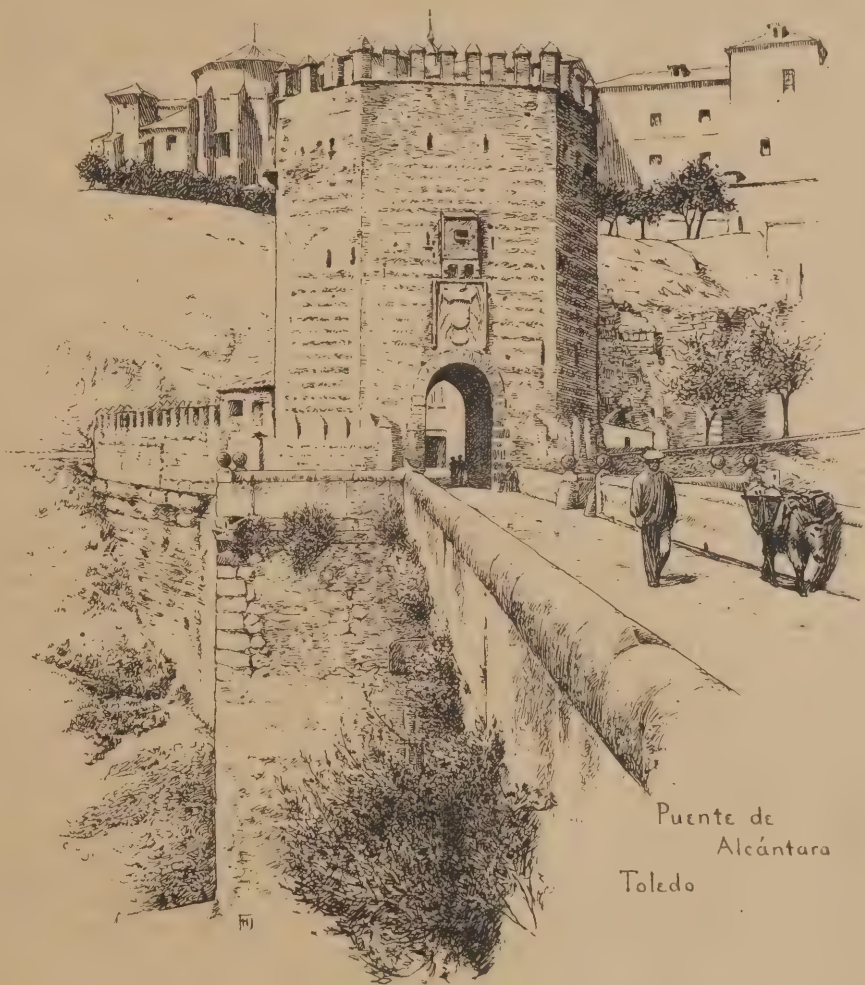
### On "Going to Nature."

It was lecture-night at the Arts and Crafts School.

The girls, with big pinafores nearly covering their gowns, and the men, in all manner of holland sacks and other workshop *déshabille*, came trooping into the architectural room with note books and portfolios, and arranged themselves, for the most part, separately on the men's or women's side of the gangway as if in church. A few invited guests filtered timidly in among the elect, and assumed a discipular air as became the occasion. It was a strange assembly of listeners; curiously un-English, one would have said ten years ago, before the arts and crafts spirit had penetrated even to the exceptional workman. But here at least is the exceptional workman—the unmistakable artisan still, though with a marked tendency to long hair and primitive eye-shades tied with string—learning in the same class with the architect, the draughtsman, and the business-like middle-class girl, whom fate has at length brought over from plaque and tambourine painting to the higher walks of decorative design. The lecturer was a popular teacher in the school; gifted, happily, with the power of conveying enthusiasm as well as knowledge, and having the rarer grace of inviting his pupils to laugh heartily at his own mistakes. It is not every art-master who would exhibit so frankly his school-day painting-book with its crude and laborious plant-studies from life, or tell the story of the yellow-centred auricula whose dusty pollen was "realised" by a layer of gum sprinkled over with the domestic flour-dredger! But while thus genially encouraging beginners with the records of his own misguided youth, Mr. Christopher Whall (for it was he), displayed at the same time such samples of patient industry in pencil-drawing, both from his own studies and from those of other students, as might chasten any budding hopes as to a primrose path to power. In addition to these drawings of natural forms, there was upon the walls an interesting collection of children's paintings, roughly portraying their own fancies without instruction from others, and illustrating to some extent that naive simplicity and lightness of touch of which the lecturer deplors the absence in modern art. The imaginative mind of youth, he said, likes to brood and dream over such fancies, which are indeed its most precious possession; and neither in individuals nor in nations can this instinct be thwarted with impunity. The natural love of the thing drawn can be easily unlearned in academies,

but they can never teach it. No less instructive was the record of the speaker's entrance at the age of sixteen into the classic shades of South Kensington, where, according to his brief but eloquent diary of that period, he "began school, and was put back from nature to curves." This entry became the text of some vigorous criticism of a system aiming at mechanical perfection of lines and curves apart from any intelligent knowledge or love of living things. Under this method the real beauty of the world was never put before the student as an object of study; the result was merely to turn out ready-made designers for the pottery firm or

proficiency could ever atone for. Going to nature in such a spirit, the trained eye would search keenly for every detail, every hint, that could be brought within its vision, and would know far more of the subject treated than would finally appear on paper. Study those artists, the speaker concluded, who make beauty their object, rather than those who make exact transcripts from nature, and know nothing of the selection of the poetic in their treatment of life. But perhaps the most memorable and suggestive portion of the lecture was the speaker's vivid impromptu descriptions of the flight of butterflies, their colours and habits, and their choice of ver-



Puente de  
Alcántara  
Toledo

DRAWN BY F. HAMILTON JACKSON, R.E.A. (See p. 51.)

carpet factory of the day. In such a training the chief use of flowers was as "excellent things to make a design of." As a redeeming corrective to this process in his own case, he had fortunately come under the influence of the late Lord Leighton, who of all men in his own generation at the Academy schools had had the greatest enthusiasm for nature, and had always treated the human figure as if he so loved it as to desire to bring out, not its peculiarities, but its beauties; to seek for its poetic elements rather than to gain a striking effect. Only by direct, intimate, and enthusiastic study of natural forms, by entering with his own heart into the joy of living, could the student hope to retain that freshness of insight, that childlike buoyancy of imagination, the loss of which no technical

dure and atmosphere. With the aid of a handsome case of specimens, he introduced the audience to the "purple emperor," flying with the dignity of a falcon; the "red atalanta," flapping his wings in a suburban garden; and his small gregarious cousin passing like the flame of a candle over hyacinths in mid-May. Then the proprietor of the specimens, Mr. Selwyn Image, who was suddenly discovered at the back of the hall, had to be brought to his feet for a speech. This demand he answered by a ready offer to prepare a similar case of butterflies, named and mounted, as a gift to the school—a proposal which was, of course, received with enthusiasm. Amid such diversions the life of a London arts-and-crafts scholar need not lack reward. E. W.



## On Reflection.

### The Popular Error.

THOSE who have the cause of Art at heart desire most to see it dissociated from galleries and museums where at best it is among ill associations; they desire to see it no longer *exclusive* in application but pre-eminently *inclusive*, so that it shall be assimilated with the life of the people, and grace and idealise the humble contrivances round which the life and labour of the people is occupied; and to see it live in the utensils of kitchen and dairy. As Wordsworth said of Poetry, that it was the health and spirit of all knowledge, so may it be said more widely of Art, that it is the crowning privilege of peace and prosperity, even as it is the essence of education. At present the perception may be held hardly to exist. It is characteristic of the popular attitude towards those objects which are esteemed and acquired by the people as being beautiful, that they are not valued. Showy, tawdry furniture, decorations, and unending "ornaments" are bought, worn out, wantonly or carelessly broken, and thrown aside to make room for material for another stratum on the rubbish heap. It is thus apparent that the popular æsthetic sentiment is not a love of the beautiful extended to unworthy and debased objects, but a mere thoughtless, barbarous, jackdaw instinct, for acquiring bright, novel, and glittering things. An object which truly appeals to the taste, however cheap and easy of acquisition it may have been, establishes itself in the regard by process of years, and does not tire.

### Coming Memorials.

THE Committee entrusted with the work of organising and applying the subscription funds for the Gladstone and Millais memorials have now advanced so far with their respective projects as to have settled upon the practical forms the memorials shall take, and come to some conclusion upon the vexed question of sites. £27,500 has now been actually subscribed or promised towards the Gladstone Memorial Fund. It has been decided to chiefly apply this to the raising of monumental memorials in the capitals of Scotland, England, and Ireland. A sum of £8000 has been allocated to a memorial in London, and the site favoured is Gwydyr House Gardens, or Cambridge Green. It is proposed that Mr. Hamo Thornycroft, R.A., shall be offered the commission for this work. The amount allocated to the Edinburgh scheme is £6000; but no definite decision has been come to upon the subject of the memorial to be raised in Dublin. On the occasion of a late meeting of this General Committee, presided over by H.R.H. the Prince of Wales, the Duke of Westminster stated that sums varying from £1000 to one penny had been received in subscription to the fund from all parts of the United Kingdom. The popular enthusiasm for an adequate memorial to Sir John Millais seems hardly less remarkable. At a meeting—held by a curious coincidence on Mr. Ruskin's eightieth birthday—and presided over by the Prince, the happy omen of the occasion was well justified by the sum of £727 which was collected in the room. St. Paul's has been declared an impracticable site, and we think very rightly so; and it has been decided to place the statue on the principle flight of steps in front of the entrance portico of the National Gallery of British Art. Mr. Thomas Brock, R.A., is to be asked to undertake this work. We think the site is a most suitable one, as it is most apt in its associations. The statue will be distinguished by its site, and should confer distinction upon the building within whose precincts it is to stand. We hope that the design of all these

statues will attain to more than a mere illustration of the person and character of the subject. There are few statues in London, however pretentious and magnificent in purpose, that eulogise the person or the event to whose honour they are raised, or that decorate or distinguish the locality in which they are erected.

### An Acquisition.

IN Mr. J. F. Middlemore, who, introduced by Sir W. Walrond and Mr. Austin Chamberlain, took his seat in the House of Commons last week as a member for North Birmingham, the cause of Architecture and the arts has a worthy champion. Mr. Middlemore, though he has served as a member of the Birmingham Council for ten years, is better known as a philanthropist and patron of the fine arts than as a politician. His name is closely associated with the Museum and Art Gallery, of which Birmingham is justly proud; and only lately he crowned his previous beneficences by offering to present to the gallery his famous collection of paintings by Burne-Jones, Holman Hunt, and, in particular, G. F. Watts, of whose works he possesses some of the finest examples. But Mr. Middlemore's usefulness in this cause of popularising Art and of educating the public extends far beyond the influence of his gifts, munificent though they are. He has a sound understanding of the true significance and privileges of the Arts, and a great conviction and enthusiasm for his subject, and his popularity and municipal distinction in his native town have given him numbers of opportunities of inculcating these useful lessons, which an executant or a lecturer would be unable to find. As an instance of the direction of Mr. Middlemore's aims and aspirations in his favourite hobby, we may quote from a letter which some weeks ago appeared in the "Spectator" above his signature. "Who," he exclaims, "can measure the influence which St. Paul's Cathedral has on the tens of thousands who pass it every day; these cannot be unaffected by the dignity and graceful serenity with which it rears itself above the ignoble buildings which crowd and jostle each other about its base. It seems a perpetual summons to a less worldly and higher life than we lead.

For myself I have much hope for our Art future, chiefly because we are gradually becoming conscious of, and dissatisfied with, the ugliness of our lives, and we are beginning to look with questioning and critical eyes at every new building which is erected in our midst." We have no doubt that Mr. Middlemore in his now opening parliamentary career will serve well the interests of those who have the cause of the Arts at heart. We trust now that the future leader of the House will not be allowed without challenge to compare with a pickle factory the most entirely satisfactory building raised of late years; and that Mr. Middlemore will support Earl Wemyss' protest and secure that the design for the new Government buildings in Parliament Street shall satisfy a higher tribunal than the personal discretion of the Chief Commissioner of Works before they are sanctioned; and that this design shall be publicly exhibited, as has been a course frequently adopted in the case of other Government buildings.

**The New Infectious Diseases Hospital, Chester**, which is nearing completion is being erected from the plans and under the supervision of Mr. H. Beswick, county architect, Chester, the builder being Mr. W. W. Freeman. The whole of the wards are being warmed and ventilated by means of Shorland's patent Manchester stoves with descending smoke flues, Manchester grates, and Shorland's patent exhaust roof ventilators and inlets.

## Enquiries Answered.

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### LEAD BURNING.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR.—Could you inform me through the columns of your paper of any treatise on Lead Burning, or where I could get reliable information on the subject.—Yours &c.,  
High Wycombe. T. W. R.

There is a chapter devoted to Lead Burning in Mr. Hellyer's "Principles and Practice of Plumbing," one of the series of technological handbooks edited by Sir Trucman Wood and published by George Bell and Sons, York Street, Covent Garden, W.C. This book, the published price of which is 5s., would probably be of service to you.

### REPRODUCING DRAWINGS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—I have been lately taking in the BUILDER'S JOURNAL and find it most interesting and instructive, and the beautiful illustrations give it an additional charm. It was very pleasing to see the new features in the last few numbers. Would you kindly give me some advice as to the reproduction of drawings. I am wanting to have some fine ink line drawings reproduced and do not know whether to have it done with "blocks." I rather lean to the photographic method myself though I am ignorant as to its limitations if any.—Yours truly,  
Catford, S.E. W. H. GODFREY.

The question whether line blocks or lithographs are preferable is to a great extent a matter of taste. For certain classes of work lithography gives the best results, but for such drawings as you mention line blocks are at least equally good, and they have the additional advantage of being considerably cheaper.

### MOISTURE DURING FROST.

To the Editor of THE BUILDERS' JOURNAL.

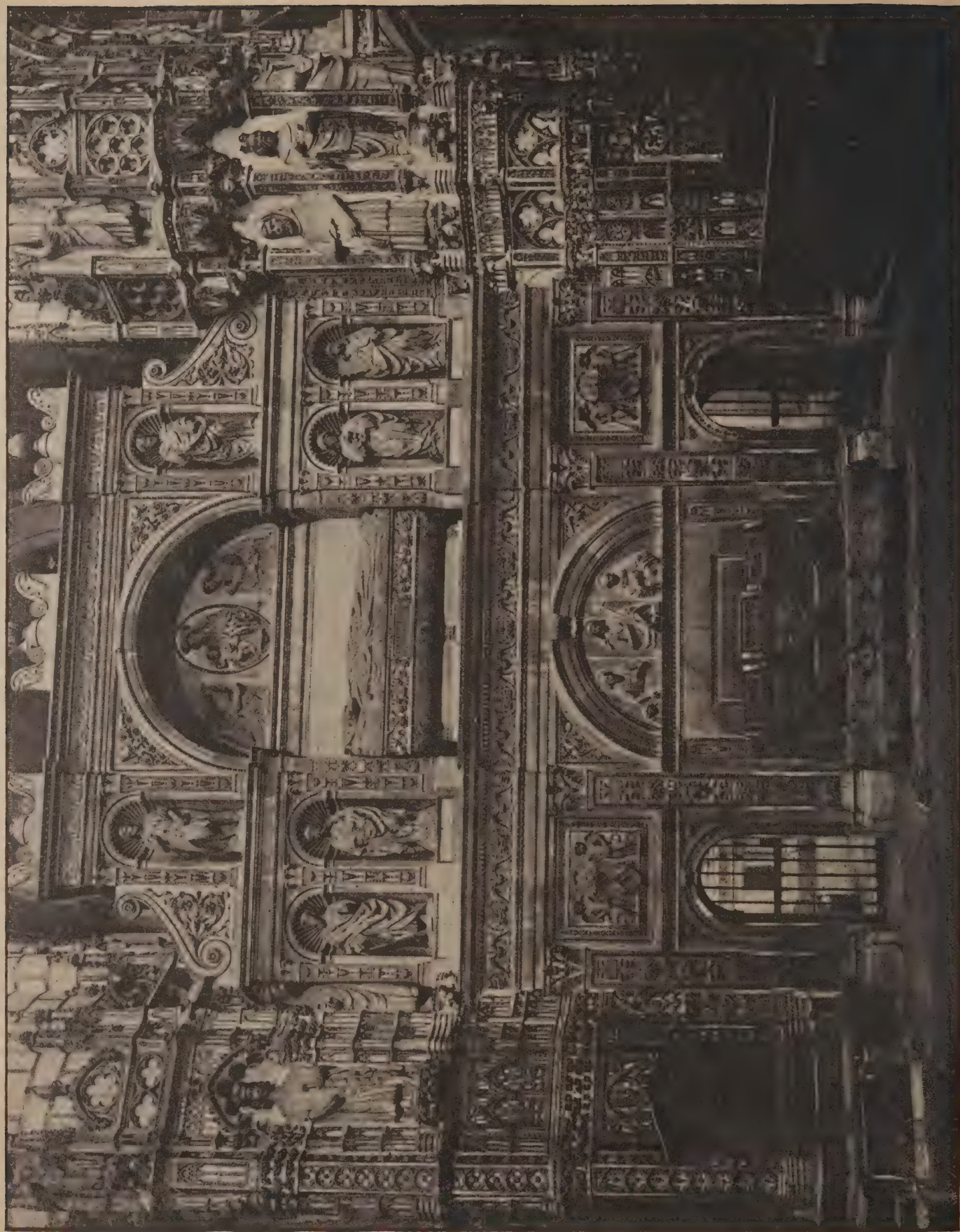
SIR,—I have a cottage, the inside walls of which after frosts appear a little moist. Yet they are all lathed and strapped and painted instead of being papered, what can be the reason of that.—Yours, &c. FROST.  
Glasgow.

The moisture on the walls after or during frost may be nothing more than a natural phenomenon. Although ordinary paint is not absolutely non-porous, it may be considered to be so for all practical purposes, and, therefore, any idea of the moisture penetrating the outer walls and finding its way through the painted plastering may be at once set aside as beyond the bounds of probability, if not of possibility. It is extremely likely that the moisture is nothing more or less than aqueous vapour condensed from the air. When a thaw occurs after frost it is usually accompanied by a considerable rise in temperature, and the air is quickly submerged with moisture which rapidly condenses upon contact with any cold surface. A painted wall would be much colder than a wall covered with paper in the usual way; and upon condensation taking place upon the surface of the former—even if in equal degree with the latter—it would be more apparent to the senses than would that upon the papered wall by reason of the absorbent character of paper. The same phenomenon might occur during frost or cold weather upon the heated air of the room coming in contact with the cooler surface of the painted walls. This is of frequent occurrence in halls and places of worship when the ventilation is not quite what it might be, and it is not at all uncommon to find the painted walls of such buildings streaked and disfigured by the stains of tiny streams of the moisture of condensation.

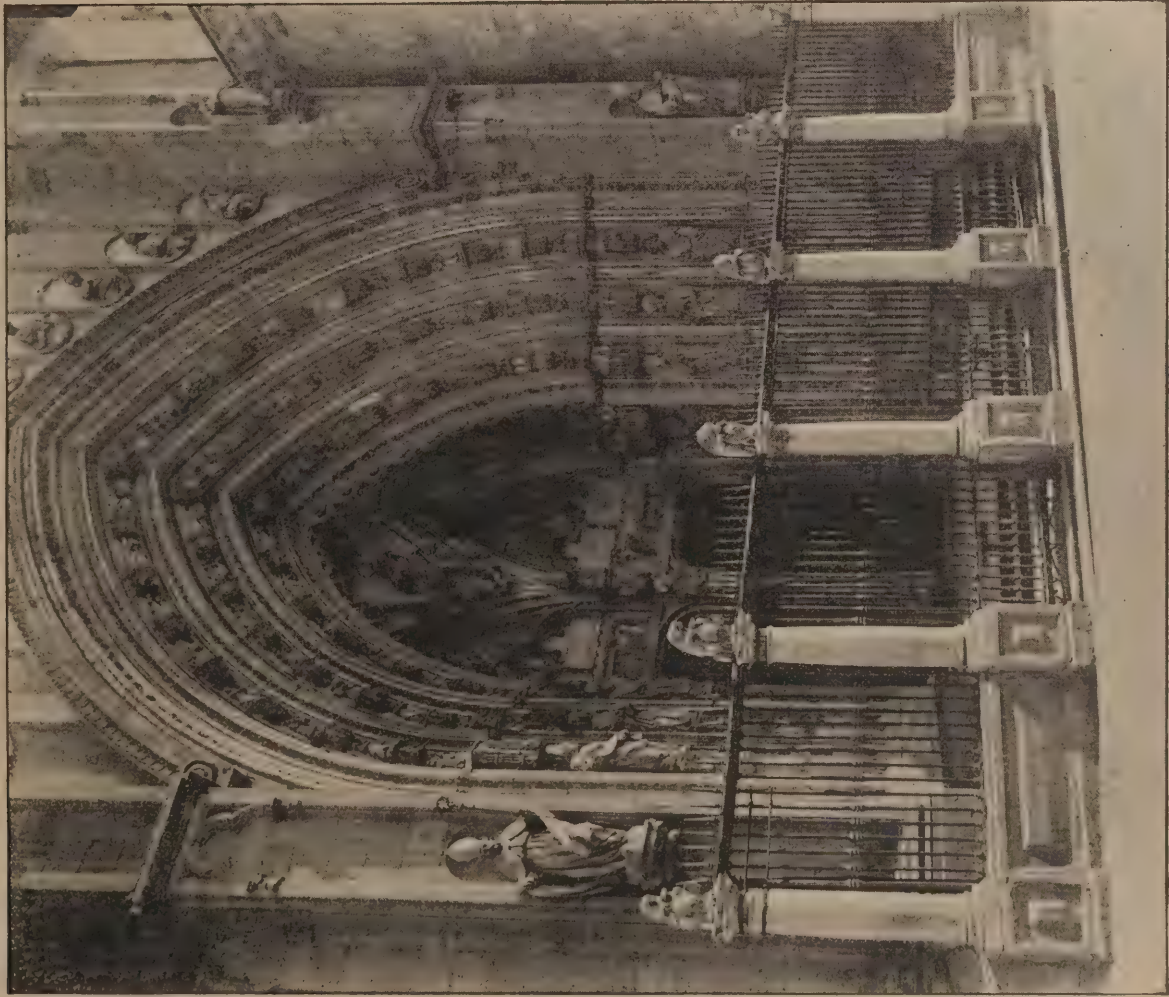


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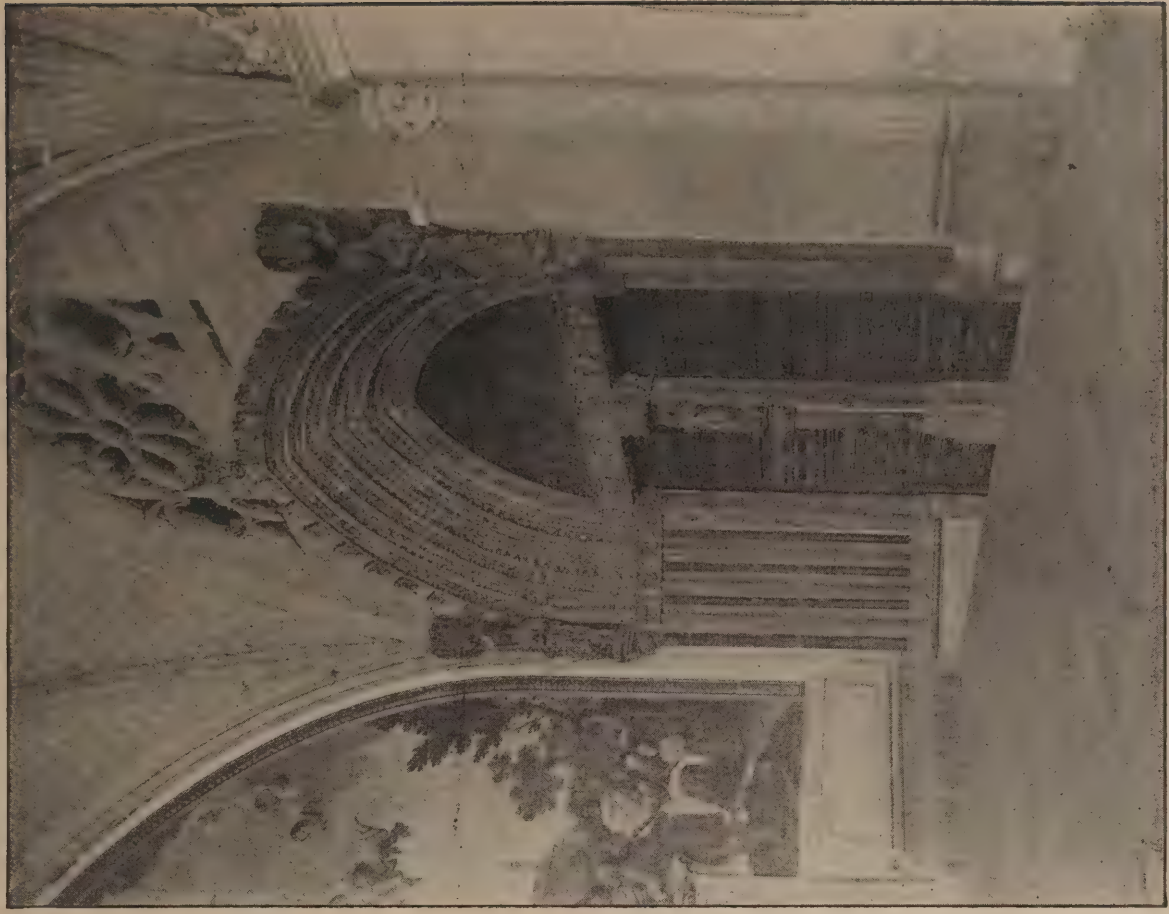








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Patio of a house  
Toledo

DRAWN BY F. HAMILTON JACKSON, R.B.A.

## SPAIN: Its Picturesque Cities and Monasteries.

### VII.—TOLEDO.

By F. HAMILTON JACKSON, R.B.A.

THE mountains of Toledo, with their associated ranges of hills, form the watershed between the valley of the Guadiana and the valley of the Tagus. Toledo itself lies some distance north of them, upon the latter river, and about two and three-quarter hours away from Madrid in a southerly direction. It is about 2400ft. above the level of the sea, and is almost surrounded by the Tagus, which here bursts through a rent or "Tajo" of the granite mountains, from which, perhaps, it takes its name (which in Spanish is "Tajo"), though other fanciful etymologies have been invented. The streets are narrow, winding, and ill-paved, and are also most intricate and confusing to the visitor, which qualities would, however, make the city easier to defend and add to their coolness in summer. I remember trying to take a friend to the Post Office after having been there once myself. Three times did we walk around the maze within which it was hidden before I succeeded in again finding the right way in. The houses are most of them massive in construction, built of stone, and the 350 years' dominion of the Moors has left many traces, among others in the universal patio, around which the rooms are grouped, which becomes a pleasant, airy room in summer under its awning. The town is now well supplied with water, as it was in Moorish times, when there was a water-wheel 135ft. high which forced water up pipes, supplying as much as 600,000 buckets daily, as late as 1568. Soon after this date the wheel was damaged by a flood, and was never repaired, and until a few years ago all water used had to be either collected in rain-water

tanks or carried up to the town on the backs of donkeys.

Toledo, the chosen city of the early annalists and antiquarians, claims to be the most ancient city in Spain. It has even been asserted that the sun first rose over it because it was the centre and throne of the world, and though this claim was made satirically, the language used by some of its sons when speaking of it is scarcely less exalted. "The crown of Spain, the light of the whole world, free from the time of the mighty Goths." So Padilla speaks, with a convenient failure of memory as regards the Moorish conquest. Some have ascribed its foundation to Jubal (who is frequently the founder of cities in Spain!), or to Hercules, the latter ascription being perhaps more likely, as it is merely a synonym for the Phœnicians. The derivation of the name seems to be either "Toledoth," the Hebrew "city of generations, or the Arabic "Attalah," "a place of look out," and Jews, if not Moors, have inhabited the city from time immemorial. One supposition is that the original settlement was much augmented by Jews, who fled from Jerusalem on its capture by Nebuchadnezzar, and it is certain that when taken by the Moors a large portion of its inhabitants were of that nationality. It was taken by Fulvius Nobilior in 193 B.C., and was then described as a small city in a strong situation. Coins of the Roman Republic have been found, bearing a figure of a horseman with lance in rest, and the word "Tole . . . ." Christianity was introduced into Toledo by St. Eugenius, a disciple and friend of St. Denis of France, and the list of its bishops begins to have some regularity from the time of the peace of Constantine, the city never ceasing to be a great ecclesiastical centre, and being chosen by the Spanish Church for the seat of its celebrated councils, which were really convocations and parliaments, the first of which was held in A.D. 400. The Gothic King Leovigild, who consolidated the monarchy, removed his court from Seville to Toledo, and his successor, Recaredo, who reigned in 586, established the Catholic faith over the hither-

to prevalent Arianism. Seventy or eighty years later, under Wamba, the city became very prosperous and important, and its wealth enormous. This king recovered from poison, given to him by Ervigius; but having been laid out for burial, clad in a monk's dress, was compelled to enter the cloister (for the cowl once put on cannot be taken off) thus leaving the kingdom to usurpation and confusion. The corruption of the Court of Witiza and the quarrels between the usurper and the rightful heirs were causes of the downfall of the monarchy, to which must be added the long-prepared revolt of the Jews, provoked by the intolerant and cruel decrees of Sisebuta and other Gothic Kings, which finally confiscated their property and made them slaves, driving them to revolt and to correspondence with their kinsmen in the north of Africa; which resulted in the appearance of Tarik before the walls of Toledo in 712 with a force largely composed of Jews, or of the descendants of those Yemenite tribes which three centuries before Solomon had embraced the Jewish religion and spread over Western Africa, becoming a portion of the Berbers. To this force the Jews opened the gates while the Gothic soldiery was celebrating a feast day. At first the conquerors treated the conquered with great tolerance, but when the rigid and exclusively Mohammedan Arabs arrived the tolerance turned to persecution. Cordova was made the capital of the Khalifate founded by Abdur-r-rahman, and the Jews and Mozarabs again began a series of revolts which paved the way to the recapture of the city by Alfonso the Sixth in 1085, who then took the title of Emperor.

The remains of Roman work are small. Near the church of Cristo de la Vega the plan of a circus can just be traced, and the church itself was the praetorian temple, converted into a church by Sisebuta in 621. In it were buried the tutelars of Toledo, St. Leocadia, and St. Ildefonso. The former, born in 306, was cast down from the rocks above by Dacian, and a chapel was raised on the site of her fall. In this many councils were held, during one of





PUERTO DEL SOL, TOLEDO.

which (held in 660) she appeared "clad in a mantilla," and informed the president, St. Ildefonso, that "her mistress lived through him." This referred to a work written in defence of the Virgin Mary, and the saintly author was so pleased that he borrowed King Recesvinthus's dagger wherewith to cut off a corner of her veil as memorial, quite in the modern fashion of securing relics! This corner was shown to Philip II. in 1587; at least, he was told that it was this fragment of the veil. A procès-verbal of the scene in the Council was drawn up (not till 775, alas!) by Cixile, Archbishop of Toledo. The church was the finest in the peninsula at that time, but most of the columns were afterwards removed either to Cardinal Mendoza's Hospital de la Cruz or to the trascore of the cathedral, and the apse is all that now remains, surrounded by external sunken round-headed arch work.

Below the Puente de San Martin are the piers of another older bridge. Above it, on the crest of the hill, are towers and ruined wall, which belonged to its defences. These are called the Palace of the Gothic Kings, and it is said that from this place Rodrigo, the last king of the Goths, saw Florinda bathing in a Moorish bath below, the end of which episode was the conquest by the Moors; but the "bath" called "La Cava" is really a Moorish alcoba or pavilion, with ogive and horse-shoe arched openings on its four sides, and not a bath at all. Near the Puerta del Sol is a little church called Cristo de la Luz, which was a mosque during the Moorish dominion, but which contains pillars and arches dating from earlier times. This earlier part consists of a square only 22ft. across, which is vaulted in nine compartments. The horse-shoe arches which support the walls from which the vaults spring themselves spring from the capitals of low columns scarcely the height of a man and having no bases. Above the arches and a string course the walls are pierced with five lobed open arcades, but in the central compartment the ajimez double-arched windows are cusped and supported by shafts. The apse is a later addition, and is built of brick and stone, and decorated externally with Moorish arcades. There is a charming old garden at the back of it where roses grow and blossom plenti-

fully, and where there is a picturesque water-tank under a pergola of vine. This is the mosque at which Alfonso VI. stopped, on his entry into Toledo, on Sunday, May 25, 1085. He had the first mass said by the Abbot D. Bernardo, the celebrated French Archbishop of Toledo, and his shield still hangs within it blazoned with a golden cross on a red ground. It derives its name from a legend that the Cid's horse was one day passing the church when it stopped and knelt reverently. The wall opposite being opened, an image of Christ was found within a niche, lighted up by the identical lamps, which had been placed there by the Goths several centuries before!

Close below Cristo de la Luz is the Puerta del Sol, the best preserved of the Moorish gateways. The lower arch is of the usual form, the walls being built of granite below, and of brick above, ornamented with intersecting arcades—a beautiful work. But one can understand, when looking at it, how easily the artillery of Ferdinand made the Moorish fortifications untenable. The old road wound down from hence to the gate, now blocked up, and therefore called Puerta Lodada, past the church of Santiago, which is a curious mixture of Moorish work and Renaissance imitation of antiquity. The present road bends to the right, and issues through the Puerta Visagra, a gate built in 1575 by Philip the Second, who adorned it with the eagle and shield of Charles the Fifth, and with statues by Berruguete. The road to the left, outside the walls, passes the old gateway—Lodada—which is a Moorish work of the ninth century, with slits for arrows above the great horse-shoe arch. Within this arch are two narrower ones, one of which leads to a very narrow winding passage, a frequent precaution observed by the Moors in fortified gateways. The name "Visagra" is the Arabic "Bib Sakra," "gate of the country," and the rich pastoral and cereal district between Illescas and Aranjuez (to which this road conducts) is still called La Sagra. This line of wall is the outer one, built for the most part by Alfonso the Sixth in 1109. It begins at the Alcántara Bridge, passing by a suburb, Las Covachuelas (which means secretaries of state) to the Puerta Visagra, and joining the old walls some little way farther on, near the

Hospital for Lunatics. The inner line is that of the Gothic fortifications of Wamba, which were accepted and strengthened by the Moors. Of this line the principal defensive works were the Castle of San Servando (an outwork on the other side of the Bridge of Alcántara, which was garrisoned by the Templars until the dissolution of the order in 1306) the Alcázar which crowns the hill above the bridge, and the bridges and gates themselves. The other ancient gate is the turreted Puerta del Cambron, rebuilt in 1576 when the old Gothic gate was pulled down. In the inside niche of this gate is a beautiful statue of St. Leocadia by Berruguete; below the figure is an inscription with a vain prayer that she may expel ennui, "Tedium," from Toledo!

Close by is the Puente St. Martin, a work of the fourteenth century, the main arch of which is 95ft. high and 140ft. across. It was originally built in 1212, and a legend says that the wife of the architect saved her husband's reputation by setting fire to the centre before its removal showed that the construction of the bridge was bad. However that may be, it had to be rebuilt by Archbishop Tenorio in 1390, having been broken down by Henry of Trastámara, and the towers are of that date, though Moorish in shape. There was an earlier bridge here, a Moorish work, built in the middle of the ninth century by the Khalif Mohammed, of which the foundations may still be seen rather further down the river. The other bridge, Alcántara, was built by Al Mansour in 997 to replace one of the eighth century. It was fortified in 1217 by Enrique the First, who erected the tower that leads to the city—very Moorish in appearance, by the way. An inundation occurred in 1258, after which it was largely repaired, if not rebuilt, by Alfonso the Learned. It is a fine work, very much like the Puente San Martin, except that it is more surprising, for its single arch leaps with one bound magnificently from one side of the river to the other. The gate away from the town was built by Philip the Second, a poor work, though containing a statue by Berruguete.

The other remains of Moorish style are the Synagogues of St. Maria la Blanca and El Tránsito, and several houses and church towers. The first stands within a rose garden facing the shop where the productions of the manufactory of arms are sold, and is in plan a basilica with five naves, divided by rows of octagonal pillars, which number thirty-two in all. The central nave is 60ft. high and 15ft. wide, the lateral ones 12ft. broad and from 40ft. to 50ft. high. The capitals show a Byzantine feeling in design mixed with the Moorish character. The spandrels of the arches are decorated with graceful arabesques, and above them rises the cusped wall arcade which separates the naves, above which again are stalactite archlets, which rest upon twin pillars. The roof is artesonado, with coupled beams, and the transition to it is by a very elaborate frieze; much of the ornamental detail is in plaster. In 1405 St. Vincent Ferrer's diatribes excited the neighbours to expel the Jews from this quarter, which was the greater Jewry, where the wealthiest Jews lived. Since that time the synagogue has been in succession church, penitentiary, barrack, military store, dancing hall, &c., and it is a marvel that anything remains! Quite near is El Tránsito, built in 1357 by Simon Levi, treasurer of Pedro the Cruel, who killed him three years after and confiscated his wealth. It is built of brick, and is very plain outside, but elaborately decorated, chiefly with plaster work, within. It is a nave without aisles, 76ft. long by 31½ft. wide and 44ft. high. On the western wall was the pulpit from which the Rabbis explained the law, the whole surface being covered with the richest ornamentation. On the side walls is a wide frieze of stuccoed vine leaves, with the arms of Leon and Castile, and stars and bosses, and above is an arcade of seven foiled arches, supported on half pillars; this runs right round the building. The roof is artesonado, and the building is lighted from the west end. Along the walls, close to the frieze, are Hebrew inscriptions, among which is one which praises the Castilian king.



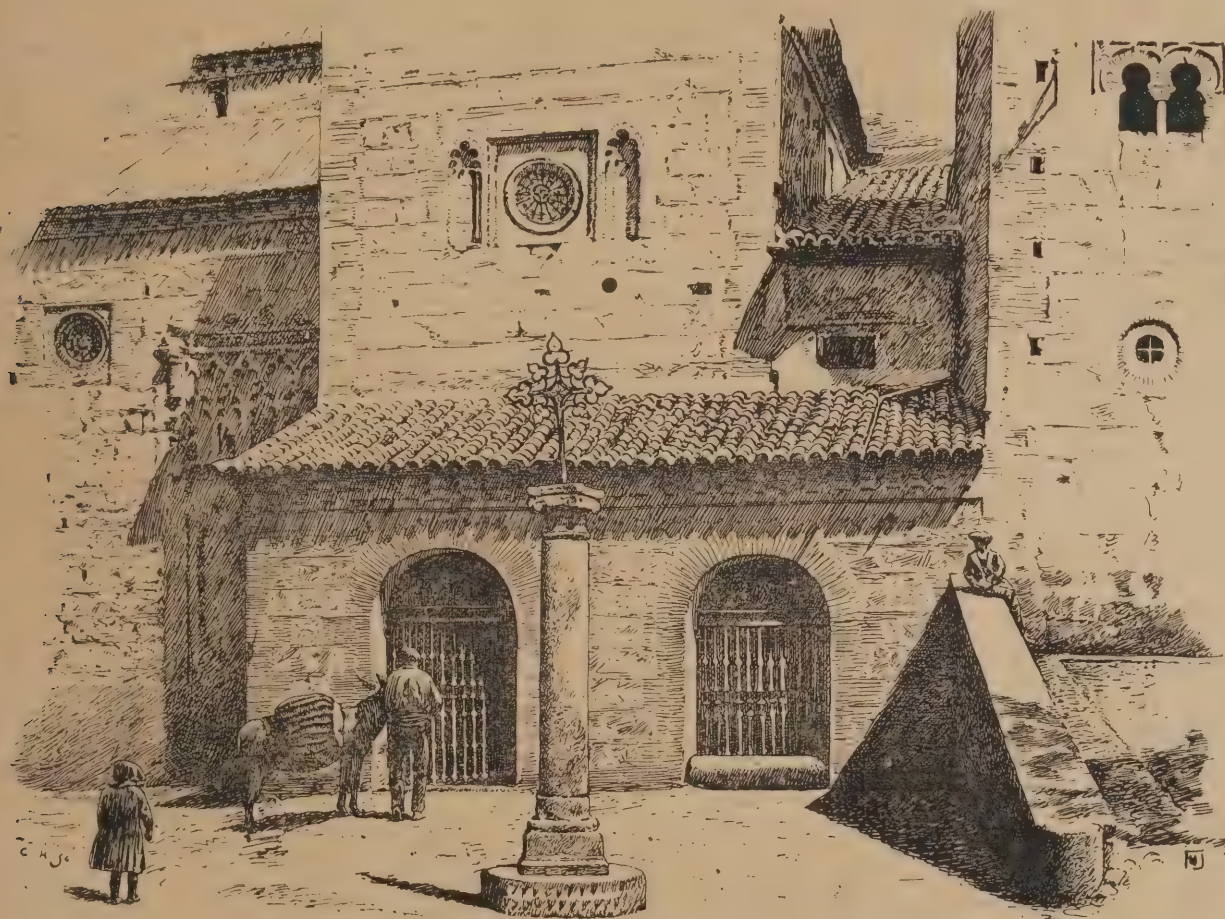
In 1494 Isabella gave this building to the knights of Calatrava, and called it San Benito. The name "El Tránsito" came from a picture of the death of the Virgin which was formerly here. These buildings are now under the care of the government as historical monuments, and when I was in Toledo "El Tránsito" was being restored, and the east end could be seen, the altar put up when it was made into a church having been removed.

Around these synagogues extended narrow, winding streets, inhabited by the Toledan Jews. The greater Jewry was defended by a fortress garrisoned by them, and they were so numerous that when the Inquisition was established in 1478, no less than 17,000 offered to be "reconciled to the Church!" The Spanish Jews, Sephardim as they were called, were of a very high caste, and had many curious customs peculiar to themselves. The synagogues are now sur-

It is time that we came to the cathedral, the greatest wonder of Toledo, which contains one of the finest interiors in the world. The outside cannot be very well seen. From the Plaza del Ayuntamiento, in front of the western façade, a good view of that part may be had, which includes the one great tower which is finished; it was completed in 1535 by Cardinal Tavera. It rises 325ft. into the air, the thin spire, with which it ends, being encircled by a crown of iron rays near the top, and terminated by a colossal cross. This tower was commenced at the beginning of the fifteenth century, and the architects were Rodrigo Alfonso and Alvar Gonzalez. It is composed of three stories, the topmost of which is octagonal and surrounded with pinnacles, standing on a square base, and is so elaborate in its details as to look like a colossal filigree custodia. To the right rises Ximenez's Mozarabic chapel, with its Cupola and Gothic open work, while between

transept; that in the north is called the gate of the Clock, or of the Fair—from the clock tower here, and from a fair which is held just outside in the month of August. It dates from the fourteenth century, and on the jamb are certain enigmatical figures. The work is rather stiff and rude, but outside is a magnificent Gothic railing of the end of the fifteenth century from the hand of Maestro Paulo.

Within the cloister are two more doorways—that of St. Catharine, a very fine fourteenth century work, with a central pillar on which is a figure of the saint beneath a canopy; this supports a lintel, which bears coats of arms within octofoils supported by little angels, the tympanum above being filled with a painting of the Annunciation, and the carving a good deal gilded. The other, the Puerta de la Presentacion, also called "del Niño Perdido," from the usual legend of the child supposed to be sacrificed by the Jews, is an excellent



Church of Santiago  
Toledo.

DRAWN BY F. HAMILTON JACKSON, R.B.A.

rounded by deserted, tree-planted plazas, in place of the swarming streets of the days of Toledan prosperity. The house of Simon Levi was inhabited after his time by the mediæval necromancer, D. Enrique de Villena; it is now a ruin inhabited by paupers. The Casa de Mesa, the Taller del Moro, and Las Tornerias are the principal houses built in the Moorish manner. The first is the work of Christian artificers after the conquest, but the principal hall is covered with lace-like patterns in stucco, the roof is artesonado, and the window at the end of the room is Moorish in form though Gothic in detail. The others have much the same character. The Taller del Moro, by the bye, was used by the Chapter as a store-room and workshop, "Taller" meaning workshop; but there is a story that its name was due to the Moorish Governor of Huesca, a certain Ambron, having invited the refractory chiefs of Toledo to dinner at this house, and having greeted them on their arrival by means of an executioner, who sliced off their heads to the number of 400!

them are three elaborate portals. These are called respectively the gates of Pardon, of Hell and of Judgement—the last being also named "de los Escribanos," because the Guild of Notaries has the right of entering by this door once a year when the members go to take the oath before the high altar. Over it is an inscription recording the date of the taking of Granada, of the expulsion of the Jews, and of the completion of the cathedral. Save for this annual opening, the great gates remain closed except for Royal personages. The gate of the Lions, so called from the six lions holding shields which are seated upon the columns outside, between which the railings stretch, was wrought by Maestro Egas in 1466 in a white stone which hardens with time and looks much like marble. Like the western doorways, it consists of a deeply recessed Gothic arch, profusely moulded and decorated with rows of figures under elaborate canopies. It was badly restored and added to in 1776, and more bad sculpture has been added in modern times. This gateway is in the south

piece of plateresque sculpture, and was begun in 1565 and completed by 1600. The arch is 40ft. high and 20ft. broad, the statues, medallions, and reliefs are good, and above the keystone is an oval medallion representing the Presentation in the Temple.

The interior, which is 404ft. long by 204ft. broad, is divided into five naves; that of the centre is 116ft. high, and the vaults rest upon eighty-eight piers formed of groups of shafts varying from eight to sixteen, the capitals of which are of simple foliage. Between the rows of pointed arches the 750 stained glass windows shine. These are superb, and towards sunset especially glow like jewels. They are some of the earliest in Spain, but are mostly the work of foreigners, either Flemings or Frenchmen. Around the aisle of the apse runs a row of low, small arches, enclosing little rose windows which are particularly fine in colour (these are the earliest windows), and at each end of the transepts is a fine rose 20ft. across. There is also a large rose window 30ft. across at the west end. The vaulting



was for a long time without a roof, but it was found necessary to cover it with tiles.

The choir, which occupies the usual position in Spanish cathedrals, is 70ft. by 45ft., and contains a great deal of splendid sculpture and other decoration. The lower series of stalls, carved in walnut wood, was finished by Maestro Rodrigo in 1495. The style is florid Gothic, and in medallions are represented the sieges and captures of cities from the Moors by Ferdinand and Isabella. Being contemporary, the record of costumes, &c., is very valuable, apart from the artistic skill shown. The upper row dates from the sixteenth century, and is the work of the two Berruguete and Philip Vigarni, who undertook it after a long contest with other carvers, presided over by the Chapter. It was finished in 1543, the year in which Vigarni died. Berruguete's work is on the right of the Archbishop's throne, and Vigarni's on the left. The stalls are of walnut, the recesses in which they stand being made of alabaster, with jasper columns dividing them. Vigarni lies buried near his work. The reading desks of gilt metal with bas-reliefs of scriptural subjects, divided by female figures, are a masterpiece of Villalpando. The principal lectern consists of a sixteenth century eagle, upon a Gothic base made in Germany in 1425, a very fine work, with niches containing figures and flying buttresses projecting, the whole resting upon lions. There is generally a heap of choral books at its foot, with bosses and corners of silver and other metals in their bindings, which makes a picturesque group. These choral books are many of them finely illuminated, and date from the fifteenth century. There are two other smaller lecterns of gilt bronze with good reliefs and statuettes, the work of the Vergaras in the sixteenth century. The *reja* is from the hand of Cespedes. In the *trascoro* are to be seen many of the columns of coloured marble brought from St. Leocadia, and above the arches is a row of fourteenth century reliefs representing scenes from Old Testament history, a very unusual thing in Spain.

The *reja* of the *capilla mayor* is by Villalpando, and is made of copper, iron, and brass. It took ten years to make, being finished in 1548, and he received for it £4700—equal in modern money to £20,000. It is 46ft. wide by 21ft. high, and is considered a masterpiece. It was formerly gilt and silvered all over. The pulpits outside are also by Villalpando, and are made of bronze taken from the tomb of Alvaro de Luna, broken up in 1449 by order of Henry the Infante of Aragon. The *retablo* is of wood, painted and gilt, and was put up in 1500-4 for Cardinal Ximenes by twenty-seven artists! It is considered one of the finest in Spain. The place where it stands was the chapel "of the ancient kings," founded by King Sancho the brave as a burial chapel for the royal family, but in 1498 Cardinal Ximenes obtained from the King leave to enlarge the *capilla mayor*, and arches were erected around the high altar, railed in with gilt *rejas*, above which are elaborately decorated niches containing the ancient tombs and effigies. Here repose the Emperor Alfonso VII. and the Infante Don Pedro de Aguilar, Don Sancho el Bravo, and Don Sancho el Deseado, and several Infante archbishops who have no inscriptions or statues. The piers are decorated with panelling in coloured marbles and with a multitude of statues of kings, archbishops, saints, and angels (which are rather large faced, like our early English statues), and on the right is open work Gothic tracery of the period of the construction of the Cathedral. On the left is the tomb of Cardinal Mendoza—a very fine work in the plateresque style, as impressive as the great tombs to be seen in Italian churches and quite as well executed. In front of it are three ancient chairs which belonged to the Inquisitors, now used by the celebrant and his assistants. There are fine candelabra in front of the altar, some said to have been brought from Old St. Paul's, London.

It is impossible to go the round of a cathedral which is so full of beautiful and interesting things, and which contains no less than twenty-three chapels, closed in with excellent *rejas*, but a few of these must be mentioned. In the

chapel of Santiago, which was erected by the constable Alvaro de Luna in the richest flamboyant Gothic in 1442 as a burial place for his family, was the effigy which rose to a kneeling position when Mass was said; this was destroyed by the Infante of Aragon when he entered Toledo. The alabaster tombs now there were sculptured by Pablo Ortiz for his daughter Maria. Don Alvaro lies in armour and the robes of his order, his hands crossed over his breast. At the corner are knights of Santiago kneeling in prayer. At his feet is a helmet crowned with ivy and laurels, and close by is a kneeling page, which may be a portrait of the one who, "faithful unto death," accompanied his master to the scaffold at Valladolid in 1451. At the corners of his wife's mausoleum stand four Franciscan monks, and at her feet her lady-in-waiting is reading prayers over her mistress. In this chapel are other fine tombs and an elaborate *retablo*. Next is the chapel of the later Kings, built in 1374 by Enrique the Second, in front of the chapel of St. Ildefonso, but removed to its present site in the sixteenth century because it stood in the way of processions. It is a work of Covarrubias, and a very beautiful example of plateresque. Here rest, under gilded niches, Henry the Second and his wife Juana, 1379 and 1381, their son Juan the First and his wife Leonora, and Henry the Third and his wife Catherine (daughter of our John of Gaunt). Juan the Second, by whose orders this chapel was built, lies at Miraflores, but his statue kneels among his ancestors. In this chapel are also a suit of Moorish armour, said to have belonged to the Prince Abu Malek, and a standard taken at the battle of Salado in 1340.

On the other side of the detestable "traspasado" is the chapel of St. Ildefonso, who is said to have been such a favourite of the Virgin that she attended matins in the cathedral sitting in his seat, and at another time placed a chasuble on his shoulders, which they say they have still got at Oviedo. He was Primate of Toledo, and died in 617. The chapel is octagonal and Gothic in style; it contains a few good tombs. In the *Capilla de los Reyes Viejos* is a fine *reja* by Cespedes, and some pictures, said to be in oil, dated 1418, by a Toledan artist. The next chapel, that of St. Lucia, is very early, and contains sepulchral inscriptions of the thirteenth century.

The end of the transept, which contains the portal of the Lions, is a very fine piece of composition and execution in a curiously mixed Gothic and plateresque style. The niches, which contain tombs, and the tracery at the sides of the door are Gothic, and so is the central pillar, bearing a figure of the risen Christ, and the carving on the tympanum, which shows a genealogical tree of the Virgin in relief; but above is a plateresque piece of ornamented sculpture, with a coronation of the Virgin in a circular cartouche in the centre, flanked by two statues in niches divided by ornamental columns, carved by G. de Borgona (Vigarni). A frieze runs above these figures from wall to wall, crowned by the balustraded gallery of a fine organ, where the style reverts to late Gothic. The external doors are of bronze, and were made in the sixteenth century by Villalpando and Diaz de Corral; the internal were carved in wood by Aleas and Miguel Copin, and they cost 68,672 maravedis, a large sum in those days. They are most elaborately worked in low relief, with an incongruous mixture of children, centaurs, vases, battles, &c. At the left of the door is a simple little *reja* of good design.

The chapels in the nave which are most noteworthy are—that of St. Eugenia, which contains a beautiful tomb in the style of the Saracenic work of the thirteenth century, with an Arabic inscription, the tomb of the Toledan Alguazil Fernan Gudiol, who died in 1278; that of "La Antigua," with a group of the Virgin and Child within a deeply recessed Gothic niche, before which the banners of the Spaniards were blessed on the eve of any expedition against the Moors; and the "Capilla de la Virgen de Piedra," which is believed to stand on the site of the altar of the former cathedral, and the very spot upon which the Virgin alighted with the *casulla* for San Ildefonso. The chapel is about 10ft.

square, and rises in a lofty pyramid of Gothic tracery made of marble, and gilded. The *retablo* is of alabaster and gilt bronze, and is the work of the two Borgonas (Vigarnis), Covarrubias, and Almonacid. On the Epistle side is the sacred stone on which the Virgin alighted, encased in red marble and trailed off. The faithful adore it by kissing. The Mozarabic chapel at the west end is particularly interesting, as being the only place in which mass is now said in the ancient Gothic manner. When the Moors conquered Toledo they allowed the Christians to retain six churches, which still exist on the same sites. After the reconquest there was considerable strife between the partisans of the Gregorian mass and those of the ancient Gothic form, which finally resulted after five centuries of struggles, in the general use of the Gregorian form except in these six churches, and in this chapel, which was founded in 1504 by Cardinal Ximenes, perhaps as a hint to the papacy that Spanish prelates considered ancient Spanish rites and customs of great value. Since that time the use has been still further restricted to this one chapel. The ritual is very simple, there is no auricular confession, and many of the prayers and collects are familiar to Englishmen, having been adopted in our Prayer Book. There is nothing of great artistic interest in the chapel, except Juan Borgona's fresco of the Capture of Oran by Ximenes—not that it is particularly well painted, but it is interesting for details of costume and of the evolutions of troops. The winter chapter-house is entered from behind the high altar. It is a curious mixture of Renaissance and Moorish. The ceilings of both ante-room and chapter-house are richly artesonado, and the work of celebrated artificers. In the ante-room are some elaborately carved Renaissance wardrobes by a pupil of Berruguete, and the door is a fine piece of involved geometric sunk panelling in the Arab fashion. On the walls of the chapter-house are excellent frescoes, by Juan de Borgona, of the acts of the Virgin; these are quite Perugian in appearance. Below them are portraits of the primates which have been painted from life since the time of Ximenes, and include his portrait. In the *vestuario* are kept some very finely embroidered vestments and frontals, and close by is a florid Gothic silver-gilt *Custodia*, 9ft. high, and decorated with 260 statuettes, the masterpiece of Enrique de Arfe, 1524. The arch-episcopal cross planted at the Alhambra at the taking of that fortress is also here, and in the same rooms are the bones of the Gothic kings Wamba and Recesvinthus.

The cloisters were erected in 1389 by Archbishop Tenorio on the site of the Jews' market. One account says that he purchased the site from them, another that as they would not sell he stirred up the mob to burn the houses of the unbelievers, and then raised these beautiful cloisters in their place. The walls were painted in fresco in the style of Gaddi, with, among other things, groups of heretics burning. These frescoes no longer exist, having been effaced by order of the chapter; fortunately, as the cloister is below the level of the street the damp has caused the works to perish with which they were replaced. In the wall is inserted a slab which was found in 1581 while the foundations of St. Juan de la Penitencia were being dug; it bears a Gothic inscription recording the consecration of the earlier cathedral in the year 587. These cloisters are very finely proportioned, and the central garden, which is above the level of the ambulatories, is railed in with a fine seventeenth century railing. The upper story was finished by Cardinal Ximenes. Above the summer chapter-house is the chapter library. It is difficult to get permission to see its contents, but it is very rich in Hebrew, Greek, and Arabic MSS., and Italian early poetry. The printed books are mostly Italian, having been brought from Italy by Cardinal Lorenzana.

Alfonso the 6th guaranteed the old cathedral to the Moors in the same way as they had set aside the six Mozarabic churches for the Christians, allowing them still to use it as a mosque, but Bernado, the first archbishop, backed by the Queen Costanza—French like



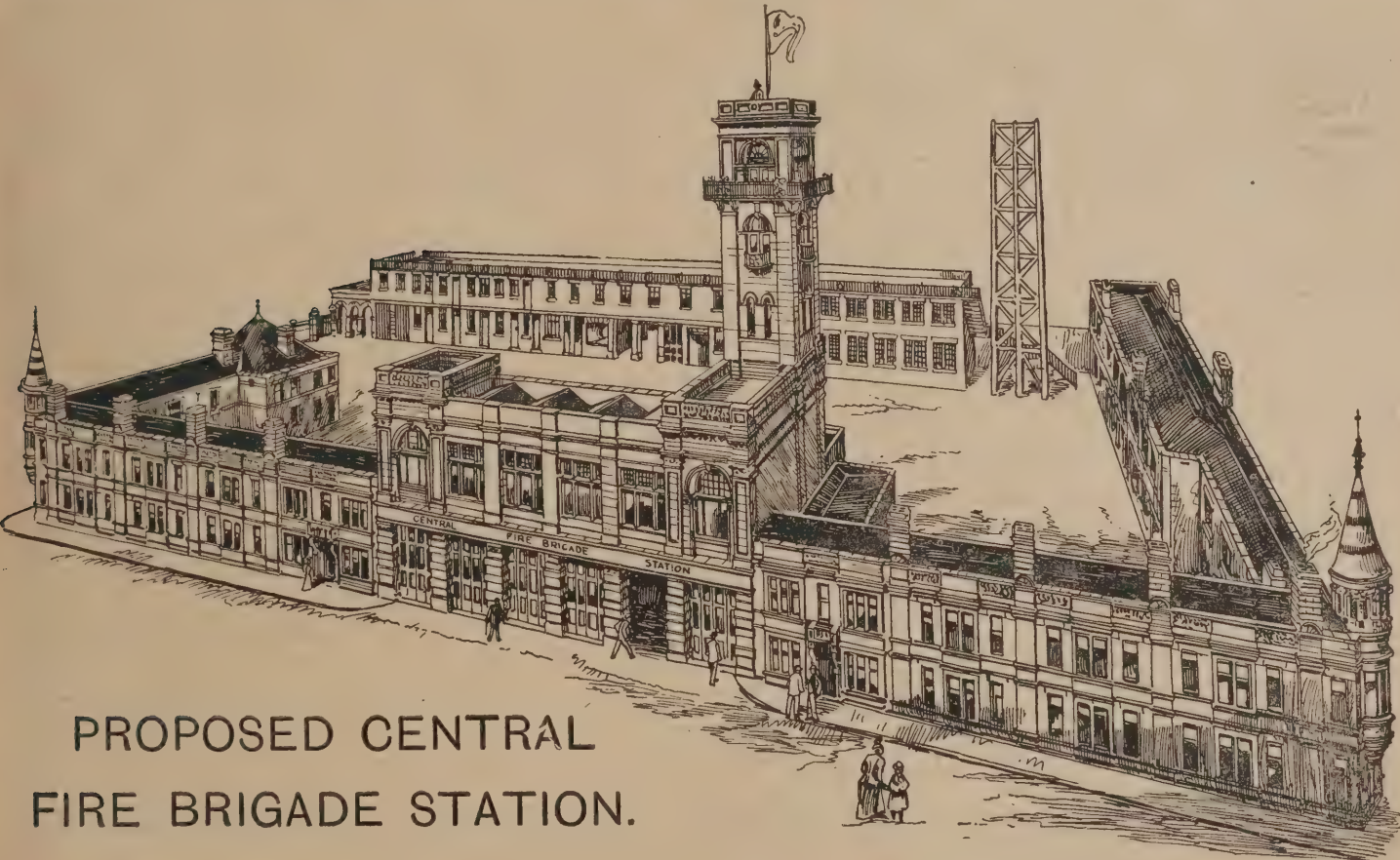
himself—dispossessed the Moors on the night of October 25th, 1086, by destroying all traces of Moslem worship. The Alfaqui interceded for them with Alfonso, and procured their forgiveness, for which reason his statue was placed on one of the piers of the Capilla Mayor. The building was pulled down in 1226 by St. Ferdinand, who laid the foundation stone of the existing cathedral. The architect was Pedro Perez Diaz, who lies buried in the sacristy of the Capilla de los Doctores, near the Sagrario. He was one of the best architects of the century and died in 1285. It will be observed that all the architects' names recorded are Spaniards, Rodrigo, Alfonso, Alvar Gomez, Martin Sanchez, and Juan Guas, though Cean Bermudez enumerates 149 artists, many of them foreigners, who during six centuries were employed by the richest prelates in Spain to make this a temple worthy of the primacy, a dignity which was long held

BRADFORD CENTRAL FIRE  
BRIGADE STATION.

AN UNSATISFACTORY COMPETITION.

BEFORE discussing the merits of the designs submitted in this competition it will be well to place before our readers the heads of the conditions upon which designs were to be based. These were briefly, limit of cost £15,000, and the accommodation required consisted of engine house to accommodate five engines on the ground floor, with duty room; stabling for eight horses, harness room, store room, and washing shed. Recreation room and hay chamber on the first floor. Chief officer's house to contain sitting room

to contain on one floor a living room, three bedrooms, bathroom, w.c., and coal-place, staircases and balconies. Carriage entrance to yard, hose tower not less than 17 yards high, boiler and engine-house, mechanics' and blacksmiths' shop, joiners' shop, laundry, loose box and additional stabling for six horses. Conveniences in the yard for the use of men. The site is rectangular, 352ft. by 122ft., and has frontages to Nelson Street, Caledonia Street, and Duinen Street. The entire area of the site is sunk below the road levels from 8ft. to 10ft., and herein consisted the difficulty in dealing with it. The designs placed first by the sub-committee, empowered by the Corporation to consider the matter, consist of three distinct schemes, the plan published herewith and two alternative schemes. Only one report, however, was submitted, and one perspective

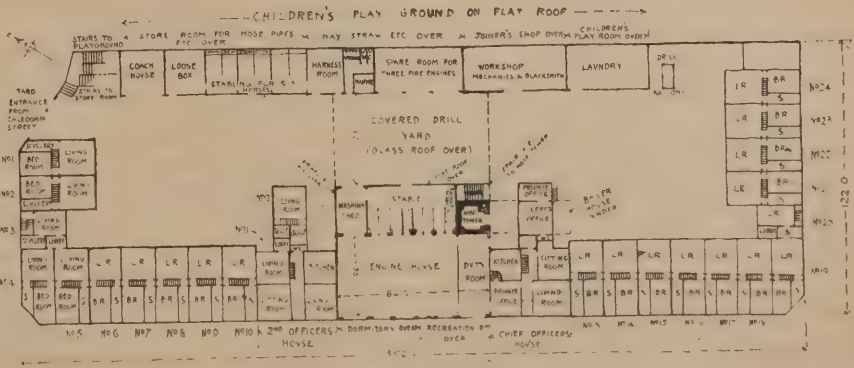


PROPOSED CENTRAL  
FIRE BRIGADE STATION.

by the master mind of the day. The chapter consisted of nearly 100 dignitaries and prebendaries. Here, as at Leon and Burgos, the Pope and the King of Spain were Canons, and the monarch was always fined 2000 maravedis for non-attendance *in coro* on the three days from Christmas to St. John the Evangelist. The cathedral was twice plundered, the first time by Padilla's mob in 1521, and again by General La Houssaye, the sacker of Escorial, in 1808.

(To be continued.)

The Lord Aberdare Statue at Cardiff is to be unveiled on March 2nd. The temporary site of the statue is in Howard Gardens, until the erection of the new buildings of the University College in Cathays Park. The New Church of St. Peter, South Tottenham, has just had its foundation stone laid. The new church, which is to be Early Gothic in style, will provide accommodation for 800 persons, and will cost about £8000. Admiralty Works at Chatham, already in progress, or about to be commenced, include the erection of extensive naval barracks, the building of a large naval hospital, the construction of new powder magazines, and the erection of a new gunnery school.



CITY OF BRADFORD CENTRAL FIRE BRIGADE STATION. ONE OF THE DESIGNS PLACED FIRST BY THE SUB-COMMITTEE.

living room, scullery, and conveniences in yard, office adjoining engine house, all on the ground floor with three bedrooms, bathroom, and w.c. on the chamber floor. Superintendent's house the same as chief officer, with the exception of the office, which was not required. Twenty-four dwellings in flats, with a flat roof for the childrens' playground, each dwelling

drawing. The committee appear to have been unable to come to any decision upon the relative merits of these three designs, and have apparently pitted them, combined, against all other competitors, which, to say the least, is decidedly unfair to the other men. We take no exception to any number of alternative plans, but we do say this: that when alternative plans are submitted for the entire



scheme, as in this instance, there should be a distinct set of drawings and report for each scheme, which should be distinguished by a different mark or number, and not form part of any other set of drawings.

The designs placed first are No. 38, and the authors are Messrs. Mawson and Hudson, of Bradford. They propose to fill in the entire site to the level of the roads with hard rubbish; the engine-house is placed in the centre of Nelson Street front, with stable, &c. adjoining at rear. The chief officer's and second officer's house are placed on either side, and the dwellings occupy the rest of the frontage on either side, and are returned along Caledonia and Duinen Streets. The workshops, laundry, and additional stabling are placed in a range of buildings at the back of site adjoining Bowling Beck. There appear many serious objections to this disposition of plan. To mention a few that occurred to us in looking at the scheme. The engine house, with stabling at rear, cuts into the middle of the yard, and divides what should be a fine drill ground into two portions, both of which are inadequate for fire brigade purposes. The drill ground at Belfast is 156ft. by 84ft.; here the largest clear area is 80ft. by 67ft. Superior designs in this respect are Nos. 18 and 40. The arrangement of engine house, duty room, stable, washing shed, and chief officer's house seems to be adapted from Belfast, and though this combination is the best piece of arrangement in the plan, it is placed in the wrong position on site; had it been at the Caledonia Street end, or even Duinen Street, it would not then have divided the dwellings into two portions, or made it necessary for the firemen's wives to cross what may be called the administrative part of yard to get to their laundry, or the children to cross the same to get to their playground. Again, the authors have placed the laundry adjoining the workshop, which is a bad arrangement; while to amuse the firemen's wives, when engaged in the pleasant occupation of washing their husband's linen, they have thoughtfully erected a drill balcony 70ft. high adjoining. In this scheme the dwellings are arranged, contrary to the conditions, in two-story through houses, with a staircase between the living room and the bedroom. The roofs of the firemen's dwellings were asked to be made a playground for their children, but the authors considered the smoke from the chimneys so deleterious to health that they preferred to let the children play on the top of the stables and manure heap adjoining the dye works! Four of the dwellings have only one bedroom each—viz., Nos. 3, 11, 12, and 20.

Over the engine-house is the recreation room, dormitory, kitchen, bath-rooms, and w.c., while on the flat over the stable is a urinal and w.c. An iron staircase from the flat runs up the exterior of the tower to a watch-room at the top, 94ft. high.

The first alternative plan is precisely similar to the last, and has the engine-house in the same position and arranged in a similar manner; it differs, however, in respect of the firemen's dwellings, which are arranged in flats.

The second alternative scheme is a variation in the plan of engine-house, which is, however, still in the same position on site; in it the engine-house is made 132ft. by 35ft., and the stalls for horses on duty, instead of being placed at the back of the engine-house, are placed on each side of the engine, "so that they are immediately adjoining their work, and are more separated in case of sickness or infectious disease." It is truly something new to learn that cattle are fit for fire work when they are afflicted with sickness or infectious disease! Yet, lo, "this is a very economical arrangement, and the latest improvement in the construction of fire brigade stations." Notwithstanding, to make up for the loss of space caused by the lengthened engine-house, the authors propose to place five firemen's dwellings on the second floor over the recreation room.

The authors cube out their building (though which design is by no means clear) at 870,258 cubic feet, which at 4d. per foot gives a price of £14,504; they, however, state that it can be executed for the amount

named, viz., £15,000. When we consider that it will take upwards of 12,000 yards of hard rubbish to make up the site to the road level, and that foundation walls up to that level have to be constructed before starting to provide any of the accommodation required, it appears still more mysterious that the committee should have selected a plan that is not only full of faults, but needlessly extravagant in its arrangement. Possibly it may have been the piano in the recreation room, which of course is included in the estimate, that tickled their fancy.

We should have stated that a very stringent clause in the conditions required all designs to be sent in anonymously, and "on no account must any distinguishing colour, mark or device, be placed on any of the drawings, description, statement, envelope or case by the competing architects or their agents." The authors of the selected design, unrestrained apparently by such a curb, blossomed forth into scrolly shaded titles, most curious and wonderful to see, and they called in their photographer to make them prints of their plans; these they pasted neatly in their report, and a photograph of the ground plan they pasted in a space round which the scrolly work clustered on their perspective drawing.

We have seen a few "cooked perspectives," but never do we recollect seeing a more misleading drawing than the one submitted by these gentlemen. It is a bird's-eye view of a sort to show more of the vertical walls than the roof, yet the drill yard appears from this to possess a width equal to if not greater than its length.

It must be recollected that the competitors have each spent at the least from one to two months in evolving a scheme for these buildings, they paid the Corporation of Bradford a deposit to be admitted to the competition, in many cases the original conditions were returned on account of unsatisfactory clauses, and upon their being amended, these competitors were asked to enter by the Corporation; they complied, expecting to receive merely justice. What is the result?

A selection is made by a sub-committee appointed to consider the matter; an exhibition of the designs is suddenly advertised in the local press; no notice is sent to competitors that any exhibition is being held or contemplated. The forty odd professional gentlemen who have spent their time and money in dealing with a difficult problem, are treated in the most cavalier manner, while a local firm rides rough shod over the conditions.

We trust that in view of the further competition for the Cartwright Memorial that the Bradford Corporation will see fit to re-open the exhibition of the designs submitted for this fire station, and appoint the professional assessor alluded to in their conditions to adjudicate upon the designs, and thus allay the unfavourable feeling which has been created in professional circles.

Our illustration of the perspective view is reproduced from the "Bradford Observer" by the courtesy of the editor. The plan is from a sketch made at the exhibition.

**An Epidemic Hospital** is proposed to be erected near Arbroath for the whole of the district. It appeared that there had been a proposal before the Carnoustie Local Authority to erect a cottage hospital for that burgh, and the matter has been adjourned for a month in order to give Carnoustie an opportunity of declaring whether it would go in with Arbroath and the county district in the hospital which the Burgh Public Health Committee have resolved to erect.

**Proposed Strand Improvement.**—A considerable street improvement will be effected in the Strand in connection with the development of the Duke of Norfolk's estate. It is intended to demolish the whole of the buildings between Arundel Street and Norfolk Street, these including the East Strand Post Office. In place of the condemned places of business will be erected a large block designed to provide accommodation for shops and offices. The post office will be given much more commodious premises.

## DESIGNS FOR MUNICIPAL OFFICES.

THE plans and elevations reproduced on one of our inset plates were submitted in a competition issued by the Urban District Council of Eastleigh.

The main building is entered from Leigh Road, and on the ground floor are shown—clerk's general and private offices, with strong room; collector's office, with room for safe; surveyor's office, with room for plans and samples; medical officer's room; cloak room and lavatory, and two w.c.'s, store, and stair leading to caretaker's house, with private entrance for caretaker from Romsey Road; and also a door communicating directly with yard and fire and stable offices. A stair from the yard leads to the heating chamber, under the medical officer's room.

On the upper floor are the council and committee rooms (which may be thrown into one large room by a broad door made to lift upwards); a ladies' retiring room with lavatory, a gentlemen's retiring room, cloak room and lavatory, also a store and a passage to caretaker's house.

The fire station and stable offices are entered from Romsey Road, and over the cart entrance and men's room are placed the caretakers' rooms.

The buildings were proposed to be constructed of brick throughout, but the doors and windows of elevations to Romsey and Leigh Roads were to have stone dressings. The roofs were to be slated. The floors of vestibule and lower hall were to be laid with mosaic, and the walls to have a dado of ornamental tiling. The floors and walls of cloak rooms, lavatories, and w.c.'s were to be tiled, the wood being of yellow pine.

The buildings are so planned that all the drains are well concentrated, all running into one main pipe going through the cart entrance. The pipes were to be of fireclay, suitable traps, inspection eyes, &c., being placed where required.

It was proposed to heat the building throughout by open fires, with the exception of the entrance and upper hall and council room, which would be treated by hot-water pipes. Incandescent gas burners were to be used for lighting. The cubical contents are 171,500ft., which, taken at the average price of 6d. per cubic foot for all the buildings, makes the cost £4285, and, allowing 5 per cent. for architect's fees, the total cost would amount to £4499 5s.

The buildings were so designed that they could easily be enlarged at any future time. The author is Mr. John G. Mitchell, of Edinburgh.

**A Bust of Mr. Gladstone** is to be placed in the debating hall of the Oxford Union Society. The work has been entrusted to Mr. E. Onslow Ford, R.A., and is to be paid for with the funds subscribed by past and present members of the society.

**The Coal Smoke Abatement Society** held a committee meeting last Tuesday week, at 6, Onslow Gardens, with Sir William Richmond in the chair. The Duke of Westminster, who expressed a wish that a younger man than himself might be found to accept the presidency, showed his practical sympathy by giving £100. The membership of the society is increasing rapidly, and the first public meeting will shortly be announced.

**A New Police-Station and Branch Library** is to be erected at the junction of Woodhouse Lane and Reservoir Street, Leeds. The new building will be set back to the line of the present railings on the side of the Moor. It will contain not only a police office, a branch free library, and news room, but also an inspector's room and a waiting-room for tramway passengers. At the junction of the two thoroughfares the building will be surmounted by a small tower, in which it is the intention of the Corporation to place a two-dial clock. The total cost of the scheme is estimated to amount to about £6000.

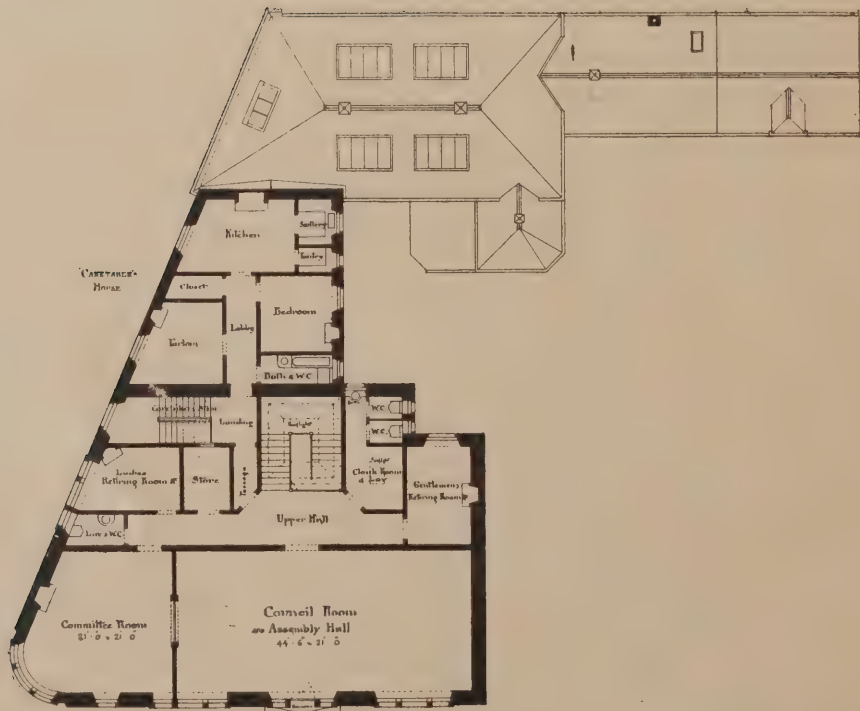
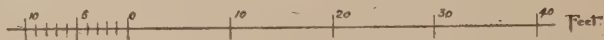


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ELEVATION TO LEIGH ROAD



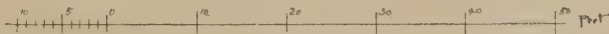
PLAN OF UPPER FLOOR



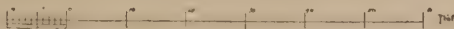




ELEVATION TO ROMSEY ROAD



PLAN OF GROUND FLOOR





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Correspondence.

FOUNDATIONS FOR FACTORIES.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—There appears in your issue dated Feb. 15th, a report of a paper on "Factory Design," by Mr. J. H. Pearson. May I point out how misleading to the young engineers and architects to whom the paper was delivered are the writers remarks upon Foundations? He is reported to have said "where great weights had to be carried and the soil was of a soft nature it was desirable to employ a continuous and substantial bed of concrete over the whole site, in order to obtain a uniform pressure." (The italics are mine).

I wish to state that this is about the best way to obtain a very variable pressure on the soil and consequent unequal settlements and injury to the building, with the rare exception of a building possessing equal loads equally distributed over the area of the site. There is no soil that will not subside more or less under pressure, and this it will often continue to do over a considerable length of time depending upon the constructive character of the soil. I am at the present moment undertaking some experiment upon a certain site to determine its bearing capacity and this continual subsidence is a striking feature. Every structure therefore sinks somewhat into the soil, usually however, ceasing to subside a short time after being fully loaded. No precaution that can be taken will prevent this; our efforts must therefore be directed towards obtaining a perfectly uniform subsidence, and it will then be of little importance whether the building sinks an eighth of an inch or an eighth of a yard.

It is due to Mr. Pearson to say that I am aware that he is not alone in his belief in the efficacy of continuous slabs of concrete over the whole site—"floating" the building as the advocates of this method are sometimes pleased to term it. Additional bearing area provided in the foundations without regard to the amount and position of the loads—and that is what a whole-site foundation means—is not only no help to the support, but a positive source of danger. Pressure on foundations must be considered as an upward reaction as well as a downward pressure. In the appended

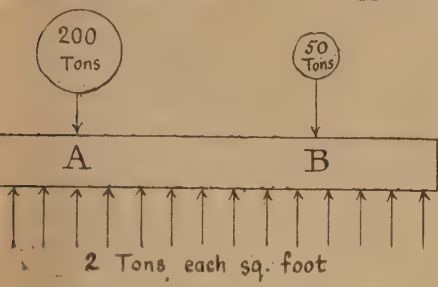


FIG. 1.

sketch (Fig. 1) I assume that the ground has capacity of resistance equal to 2 tons per sq. foot. It is obvious that the upward resistance at A cannot so effectually meet load A as that at B can meet load B; the foundations, therefore, cannot remain in stable equilibrium, and the whole superstructure will tilt over towards A. Again, if the distance between A and B be considerable then the slab of concrete may be expected to belly-up and rupture between A and B by reason of the action from below. It is simply a case of an inverted loaded beam.

Whatever the soil, soft or hard, there is only one safe method, viz., to proportion the area of the foundations exactly to the load to be carried, and to place the centre of pressure of each part in the centre of its bearing area. Columns and piers naturally divide up and separate the bearing areas—the centre of the column being the centre of the area—but with regard to irregular masses of superstructure, the centre of gravity of each mass should be over the centre of its bearing area, while with continuous walls, the width of the trenches

should vary in exact proportion, not to the thickness of the wall but to the load thereon. For example: It is found that the safe bearing area of the site of a factory is  $1\frac{1}{2}$  tons

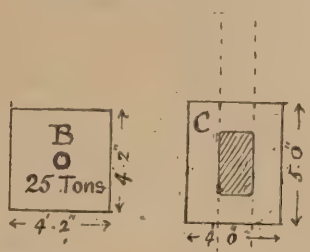
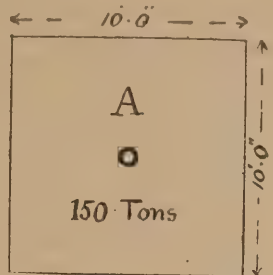


FIG. 2.

per foot super. In Fig. 2, column A carries 150 tons. Then we have  $\frac{150}{100} = 100$ ft. super, as the bearing area for A, say 10ft. by 10ft. B, an intermediate column, takes only 25 tons and requires a base of 17ft. super, say 4ft. 2in. by 4ft. 2in. C is a brick pier in a line of arched openings in a wall, and takes 30 tons; so a foundation block, 4ft. by 5ft. is a suitable size. The last illustration of walls and piers requires an extra word. If the wall is of equal height or the load otherwise uniform, then inverted arches could be used under the openings, and a continuous trench and foundations could be employed, which, in case of considerable weights,

of about 11,000 square feet, and the structure and its stock when complete weigh together approximately 15,000 tons. A bed of Portland cement concrete, 3ft. thick, was spread over the whole surface of the site just above the water level, the bottom being of running sand. The building has been up nearly five years, and there has not been the sign of a settlement in the structure or its foundations, which I ascribe entirely to the continuous bed of concrete.

It will be observed that the weight above named approximates closely to the  $1\frac{1}{2}$  tons to the square foot given by J. D. in his example and diagrams No. 2. The weights upon the

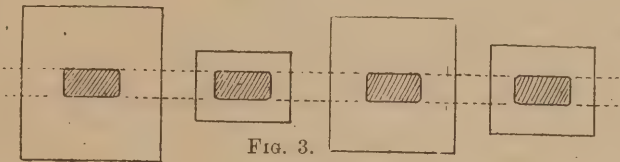


FIG. 3.

would help to narrow the trench (giving room for machine bases and what not—often of great importance) without detriment to the structure. But if there are causes combining to produce unequal loads along the wall, then each bearing should be separate, and it is every bit as important to contract the bearing area of the lighter loaded piers, as to provide sufficient area for the heavier loaded piers. Fig. 3 is the plan of an arcade of equal-sized but irregularly loaded piers, showing how the

floors of the building I have alluded to necessarily vary considerably owing to the shifting of the stock (bales of compressed paper). At times as much as 150 tons have to be sustained by a single basement column, whilst an adjacent one may at the same instant have only half that load to carry.

In these circumstances one would expect the slab of concrete, if J. D.'s theory were tenable, to "belly up" and "rupture" between the bases of the iron columns. As before mentioned this disastrous result has not occurred. At the present time I am concerned in the erection of a larger building than the foregoing, and where heavier loads have to be carried. The continuous bed of concrete has been adopted for the foundations with equal success.

Without further traversing J. D.'s letter, I hope the instances I have given, based upon practice, will prove to him that his theoretical deductions obtained by experiments are inaccurate.—Yours truly, J. H. PEARSON.

32, Finsbury Pavement, E.C.



FIG. 4.

formation blocks may be varied. In the case of equal loads equally spaced, they should be treated as separate loads and their proper area discovered; then if these areas approximately reach one another, there can be no harm in their being joined up in one slab (see Fig. 4).

J. D.

Balham, S.W.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—I had satisfaction in reading in your issue of the 22nd inst. a letter from a correspondent whose views accorded with mine in that part of my paper upon "Factory Design" referring to the "relationship between architect and engineer." May I say that I am pleased to observe that the interest in my paper is sustained by a letter from J. D. in your columns of this week, although my remarks upon "Foundations" have evoked his adverse criticism. I am glad to have the earliest opportunity of replying, and can only say that the theoretical deductions of J. D. are not from my experience borne out in practice.

In advocating the desirability of employing a continuous and substantial bed of concrete over the whole site of a building where the soil is of a soft nature, in order to obtain uniform pressure, I illustrated fully by drawings and diagrams at the meeting a building combining warehouse and factory, in the erection of which I was professionally concerned, where this plan

BRADFORD FIRE STATION COMPETITION.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—I note your remarks in last week's issue of THE BUILDERS' JOURNAL re Fire Brigade Station Competition at Bradford.

I was one of the competitors who sent in drawings in response to the invitations issued by the Bradford Town Council. Up to the present I have not received any official intimation as to the result of the above competition, and have had to rely on the notices given in the local press.

I went on Saturday week to Bradford, to inspect the forty-four sets of drawings on view at the Free Library. Like your correspondent, I was unable to discover which of the three alternative sets of drawings sent in by the winning competitors was selected for the first premium. In the printed particulars issued by the Corporation to the competitors, "Condition" No. 12 states that: "The walls on plans and sections are to be shown in black; the elevation and perspective must not be coloured, but finished in Indian ink." Yet in the face of this condition, I find that all three



of the premiated sets of Drawings are coloured. Further, in "Condition" No. 17, it is stated that: "any design, the preparation of which does not comply with the foregoing conditions will be rejected."

Any further comment upon this is needless. To say the least, it is most unfair to other competitors who have, like myself, adhered to the conditions laid down. There are also other details shown on the winning set of designs at variance with the conditions.

In the meantime I should feel obliged by being placed in communication with other competitors who may feel, along with myself, aggrieved at the injustice done towards us with respect to this competition.—Yours respectfully,  
GEO. HEPWORTH.

## Views and Reviews.

### "TIMBER."

The special annual issue of "Timber and Wood-working Machinery" contains in an attractive form a vast amount of information likely to be useful to all dealers in timber and users of wood-working machinery. Among the more notable contents may be mentioned: "The Timber Docks of London," by E. Vize-telly and W. L. Bird; "The Export Trade of the North Pacific Coast of America," by Frank B. Cole; "Kew Gardens and the Timber Trade," by Edwin Collins; "Sea-going Rafts on the Pacific," by Edward K. Bishop. All these subjects and many others are dealt with in a capable manner by the various writers, and the illustrations are often of exceptional excellence. But perhaps nothing in the book is more worthy of general attention than Mr. J. Stafford Ransome's forcible plea for the maintenance of the prestige of British machinery. He points out that of late years strenuous efforts have been made by German makers to push their trade in Great Britain, and this has led British makers to endeavour to compete in price with them. "This," says Mr. Ransome, "unquestionably is legitimate enough, but it is rather a mistaken policy on our part, for if one competes in price with such people one must assuredly compete for the record of inferiority too. Our extremely large trade has hitherto been due solely to the fact that people generally have had confidence that in buying their machines from English makers, they were sure to have the best which were procurable. This feeling every British manufacturer should endeavour to keep going and to stimulate. For awhile our cheap machines do not materially affect our prestige in our home trade, where all the purchasers of wood-working machinery know the various firms who make it, and can buy a good machine if they want to, or an inferior one if it suits their pocket better to do so. But that some of our makers should sink the quality of their machinery to the level of that of some of their Continental competitors is not only humiliating as a policy, but is likely, unless checked, to have most disastrous effects with regard to the good name of British wood-working machinery abroad."

"Timber and Wood Working Machinery." Special Illustrated Issue, 1899. The Boleph Press, Limited, 1s.

### THE DUTCH GALLERY.

At the Dutch Gallery, 14, Brook Street, Hanover Square, is to be seen an interesting collection of designs, interesting because they are (with the exception of three) the work of a master and his pupil, and have therefore an affinity in style unusual in an exhibition room, while showing the difference due to the individuality of the two designers. They are mostly designs for fountains or for portions of them, and are the work of Mons. A. Legros, once Slade professor, and the Countess Feodora Gleichen. *Place aux dames!* We will speak first of the lady's work. Of her contributions the best is perhaps a small circular relief called "Venite adoremus," which shows three little angels adoring the infant Christ (who has an enormous nimbus by the bye). The composition fills the space

quite prettily, the lines of the wings and the posing and grouping of the figures being harmonious. The model for a well, to be executed in stone or bronze and wrought iron has a pretty motif of graceful crouching figures at the angles of a well-head, shaped like the capital of a column; but the other details are conceived on the scale of the model, and not on that proposed for execution, and if ever carried out on that scale would prove disappointing and heavy. The projects for fountains are not sufficiently architectonic, or not spontaneous enough. The very free form of design adopted requires for success equal freedom and apparent fortuitousness in arrangement, and these drawings are too evidently put together, a defect from which the master's work also is not always altogether free. On the other hand, the design for a sundial, with the three fates separated by sweeping scrolls upon a triangular base, is distinctly impressive, and an unnumbered drawing of a hollow sundial shows a pretty group of children supporting it, and amorini racing hand in hand around the base, suggesting the sunny hours passing rapidly, an ingenious idea. The children playing with the water in the large fountain in which master and pupil have collaborated are also nicely posed, and the Countess Gleichen shows considerable fancy in her work throughout. Why this fountain should have the ugly square head which finishes it above M. Legros' strongly modelled mask one does not understand, but the defect of most of the designs is the lack of appreciation of the architectural setting necessary. The mouldings are generally such as one would expect from a painter, and one might suggest that the assistance or counsel of an architect would sometimes be of advantage.

Of M. Legros' designs the most charming is a pencil drawing, numbered 27, a design for a fountain, showing a very broadly spreading basin, below the rim of which the water escapes from the mouths of satyr masks whose horns are pulled by children appearing above curling waves between each couple, the whole forming a band of sculptured ornament surrounding the basin. These great satyr masks seem to have a fascination for M. Legros, and the collection contains seven designs for them, as well as two executed in high relief (one, a portion of the fountain which he is making for Welbeck Abbey) while one foundation is decorated entirely with them in a quite unconnected way. One is always glad to see M. Legros' masterly studies of heads in chalk or silver point, and the present exhibition contains several of the highest excellence. The drawings numbered 2, 3, and 6, are unsurpassable for the delicacy of their modelling and the beauty of the technique, especially around the eyes and nose. Here, too, is the female torso in bronze, of which a cast stands opposite the refreshment room at South Kensington, a work of great beauty and distinction.

Mr. Lanteri shows a cleverly planned and modelled sketch for a fountain, which, while very accomplished as craftsmanship, shows a lack of sympathy in design between the laxity of curve of the central group and the architectural forms of the basin and base below.

In the gallery are also some proof woodcuts of the modern artist wood engravers, which are interesting, and a few drawing of excellence by Phil May, Meissonier &c.; and as one leaves one's eye is caught by an astonishing piece of realism by Ph. Rongean—an oil painting on a panel of a bunch of asparagus against a dark background—nothing more—but the colour and texture are nature itself and the technique simple and masterly. A. W.

**Illuminating the Embankment.**—Steps are to be taken almost immediately to light the Victoria Embankment and Westminster Bridge by electricity. Tenders have been sent in for the engines and dynamos to work the installation, and plans for the generating station are in course of preparation. The amount sanctioned for the work is £25,300, but it is expected to cost a good deal more before the lighting is complete.

## Keystones.

**Rebuilding of the Old Bailey.**—The city surveyor (Mr. A. Murray) and Professor Aitchison (the President of the Royal Institute of British Architects), are engaged in preparing the instructions to the six competing architects who will be asked to submit plans for a new Sessions House in the Old Bailey. The new building will probably cost over £150,000 to erect.

**Pictures at St. Paul's.**—Just now, when the decoration of St. Paul's Cathedral is being actively carried out, a letter written by Sir Joshua Reynolds, which will shortly be put up to auction in London, is of special interest. "I fear," he writes, under date October 16th, 1773, "our scheme of ornamenting St. Paul's with pictures is at an end. I have heard that it is disapproved of by the Archbishop of Canterbury and the Bishop of London." For the sake of the advantage that would accrue to the arts by establishing a fashion of having pictures in churches, six painters agreed to give each of them a picture to St. Paul's. The pictures were to be placed in that part of the building which supports the cupola, which was intended by Sir Christopher Wren to be ornamented with pictures or bas-reliefs, as appears from his drawings.

**A New Technical Institute for Shoreditch.**—Within a few months a technical institute, that is better adapted than the present school in Hoxton Street, will be opened in Shoreditch. The building is Ask's School in Pitfield Street, which was taken over by the London County Council some time ago. The present structure affords ample accommodation in the way of class-rooms, workshops, and lecture-halls. The first-named have, however, been enlarged, and other extensive structural alterations have been made since the building was vacated by the boys in the summer of last year. Electric light is to be installed throughout the school, and when this work is completed many of the apartments will be ready for the fittings. Among the subjects which will be taught at the institute are drawing, wood-carving, clay modelling, cabinet-making and joinery, dressmaking, electrical fitting, and plumbing.

**A Parish Home for Peterhead** is shortly to be erected, and the following tenders have been accepted: Mason, William Stuart and Son; carpenter, W. B. Taylor; plumber, John Ferguson; slater, Mackintosh and Cannon; plasterer, William Shand; painter and glazier, Alexander Ferguson; amounting in all to £2929 6s. 6d. Provision is to be made in the new homes for thirty-two beds, in place of twenty-five in the present building, while in addition there will be suitable accommodation for aged couples, and wards for treating the sick. The building is to be two stories high, with projecting wings at either side and in the centre, and a back wing of one story. The centre length of frontage will be 103ft., the depth of the main building 30ft., inside wings 55ft. each, and the ground space of the centre and back wings about 70ft.

**The March Number of the Architectural Review** will contain an authoritative article by Sir Reginald D. Balgrave, on the site of the scaffold upon which King Charles the First was executed, with an interesting illustration of the Banqueting Hall in Whitehall. Sir Reginald Balgrave is in a position to write upon this matter, having made a very careful study of the subject. Other interesting articles will be: The Chapel of St. Peter the Martyr in the Chapel of St. Eustorgio, Milan, by Alfredo Melani, fully illustrated from photographs procured on the spot; an account of the restoration of Lake House, near Aylesbury, with illustration showing the scaffolding and the method employed to make good the ravages of time and weather; the letterpress is written by G. Ll. Morris; Mr. H. Wilson writes upon "Drawing," with illustrations from the studio of John D. Sedding; and the Rev. W. J. Lofti contributes a further number of the series of Arts in Ancient Egypt.



# Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,

March 1st, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

No. 3 of "Specification," which has just been published, is far and away the best number that has yet appeared. It is double the size of previous issues, containing 628 pages and about a hundred illustrations. But the bulk of the work is among the least of its recommendations. The greatest possible pains have been taken to render the information given absolutely reliable; the work of the hundred contributors who have been engaged has been carefully checked by a large staff of specialists of the highest eminence in their respective spheres. As the information is arranged in an attractive and convenient form, the publication forms a work of reference of the utmost value to all architects and builders.

**The London Government Bill.** AMONG the provisions of the London Government Bill, introduced last Thursday by Mr. Balfour, are several which somewhat intimately affect the building trades. It is proposed to transfer to the local municipalities that are to be established certain powers that have hitherto been vested in the County Council. The new municipalities will have the sole right to make orders in respect of subsoils or foundations for buildings, the construction, repair, alteration, and level of buildings; they will make bye-laws regulating offensive businesses, the structure of premises, and other matters; they will have power to promote bills for local street improvements; they will have the care of the smaller open spaces, and upon them will devolve such duties as the inspection of slaughter houses under L.C.C. bye-laws. The Bill also makes provision for the devolution of further powers in the future by agreement with the County Council.

**The Decorators' Institute.** AN Institute has just been incorporated for those engaged in the Art and business of painted decoration. The objects of the new Institute are similar to those for which Institutes of Engineers, of Architects, and of Surveyors have been formed. The idea seems to have originated within the present decade, and to have taken more definite shape at a meeting of the "National Association of Master Painters" at Manchester in 1894. Endeavours were made to obtain a charter last year but, objections being raised, it was decided to incorporate the Institute under the non-trading clauses of the Limited Companies Act; and, after some years of persevering effort the Institute was finally registered as incorporated on January 21st this year. The first meeting of the Provisional Council since incorporation was held at Painters' Hall on February 8th. This Council consisting of twenty-five members is representative of England and Wales, Scotland and Ireland,

Mr. Crace of London being President. The council at once proceeded to elect officers and arrange for the organisation and working of the Institute. Mr. W. H. Pitman was elected treasurer, Mr. G. Petter, auditor, and Mr. F. W. Englefield (of Messrs. Pritchard, Englefield, and Co., Solicitors), secretary. The first general meeting is appointed for March 23 at Painters' Hall, Little Trinity Lane, where the new Institute's headquarters will for the present be situate. In noticing the definite formation of this Institute, it is only just to say that, although it will have its headquarters in London, its origin and its preliminary organisation are almost entirely due to the initiative and the persevering efforts of representatives of the northern counties, and particularly also of Scotland, where Mr. Thomas Bonnar, of Edinburgh, and Colonel Bennett of Glasgow, have been its constant and energetic supporters. Most valuable of all, however, have been the indefatigable services of the interim secretary, Mr. W. B. Crawford, of Glasgow, to whom no trouble or difficulty seemed deterrent, and no labour superfluous.

**Art and the Funeral Cortege.** It is the custom at Venice, so we are informed by Professor Melani, for each friend of the defunct to send a torch each to the funeral. It is then easy to see that the worth and the celebrity of the deceased are measured by the number of torches sent, in fact, in some cases this number mounts up to two or three hundred. It is easy to imagine the effect of all these torches when carried into the church—as they usually are—where they poison the atmosphere with the dense smoke, and soil and tarnish the objects of Art, the plate, stuffs and furniture, &c. This state of affairs arrived at such a pitch that at a recent synod held at St. Mark's it was decided to forbid henceforth the entrance into the church of the torches which accompany the deceased.

**What is an Architect?** It would appear that an architect must on occasion be prepared to keep a sea-side lodging house. The following advertisement appeared in the "Times" last week: "Architect's assistant wanted, at the seaside. Must be a married man, and fully qualified to design and complete without supervision, working drawings, specifications, and level and survey. Furnished residence with good garden provided. Salary £2 10s. per week, which wife could supplement if desired by catering for paying guests. Address, stating previous experience, age, and qualifications, to X. 924, 'The Times' Office, E.C." No doubt there will be rush of "fully qualified" architects to secure this prize. Think of the paying guests!

**Sir E. Poynter's New Panel.** A mosaic from the design of Sir Edward Poynter, P.R.A., has just been fixed in the central hall of the Houses of Parliament, over the entrance to the corridor leading to the Commons Lobby. The panel was executed by the Venice and Murano Glass Company Limited, of St. James's Street. It represents St. David, supported on either side by allegorical figures. On the left of the spectator is the Spirit of Ancient Welsh Poetry, represented by a female form clothed in a blue garment with a green mantle, and in her head a crown of oak leaves. The figure of Religion or Theology on the right is draped in purple and grey; in her left hand is a burning lamp and in her right a book. St. David, arrayed in full pontificals, is in the act of preaching. His right hand is raised and his left holds a small book. The ample chasuble is of rich amber shaded with gold, forming a pleasing contrast with the white under-vestments. The border underneath the picture shows the Welsh emblem, the leek, and also the quarterings of the Welsh principality. In the centre is the inscription "St. David for Wales." Welsh members were complaining not long since of the neglect of Welsh interests by the Government, and the House of Commons generally. Is this artistic glorification of the Principality designed to make amends for past neglect?

## The New Government Buildings.

THE Earl of Wemyss, in a letter to the "Times," points out, with reference to the new Government Buildings to be erected in Parliament Street, how fine an opportunity is now afforded for beautifying the metropolis with noble Architecture, and he suggests that before the designs are finally settled and approved they should be exhibited in public, so that all who take an interest in London Architecture may have an opportunity of seeing and criticising the selected design. It appears that under Mr. Layard's rule at the Office of Works a model was made of all that district of London where Government public buildings existed or were likely to be built; all the houses, &c., were made removable, so that any intended public building could be placed *in situ* and judged as to its general effect and how far it harmonised with its surroundings. The Earl of Wemyss suggests that this model should be produced, and that models of the proposed buildings should be made and tested *in situ*.

## Cottage Workhouses.

It is not likely that architects will in future be called upon to design, or builders to erect, many more workhouses or industrial schools of the barrack type. The trend of public opinion is strongly in the direction of housing the pauper population, both children and adults, in cottage homes rather than in these great institutions. Mr. Hutton's bill, which has for its object the provision of cottage homes for the aged poor, passed its second reading in the House of Commons last week, and although the measure will have to be extensively altered in Committee if it is to be made workable, the House is committed to the principle of the thing. The Lambeth guardians, at their meeting last Wednesday, had under consideration a report of a special committee recommending the erection of cottage homes at Norwood for 100 aged and deserving indoor poor. This was suggested as an alternative to the enlargement of the workhouse, which would otherwise be necessary. The consideration of the matter was adjourned for a month.

## The Compensation Act.

THE Workmen's Compensation Act does not seem to be working so smoothly and satisfactorily as could be desired. At Sheffield County Court last week Judge Waddy said he entertained a strong view that the Act was doing damage instead of good to the unfortunate workman. The Act seemed almost to consist of exceptions. Two prominent advocates had said that two out of three accidents which came before them were exempted from the Act. Another recent commentator on the Act is Sir Wilfrid Lawson. His comment is as follows: "If you fall thirty feet slap bang on the street, You'll get cash if your head be split; But if, cutting it fine, you fall just twenty-nine, In that case you won't get a bit. So the moral is this, if I'm not far amiss, If you are a wise working man, If you find you've a call to accomplish a fall, Then tumble as far as you can."

## For Industrial Peace.

MR. RITCHIE has submitted to the Employers' Parliamentary Committee and the Parliamentary Committee of the Trade Union Congress his proposals for the avoidance of trade disputes. Mr. Ritchie does not advocate compulsion. He desires to see established in every trade that which already exists in several, viz., a conciliation board consisting of employers and employed, to whom, in the first instance, every dispute should be referred. Failing agreement at this tribunal, the dispute should then go before a central conciliation board, composed of employers and employed, representing all the trades. Until a final pronouncement is made by the central board there should be no strike or lockout. The proposals seem eminently reasonable. The present dispute in the building trade would almost certainly have been amicably adjusted had any such machinery as Mr. Ritchie proposes been in existence.



## COLOUR DECORATION.

BY COLE A. ADAMS.

(Continued from page 40.)

WHAT is the best style to adopt for *fin de siècle* decoration? asks the bewildered student. The hum from the battle of the styles fought in the sixties is now at rest, and we are content to admit in the nineties whatever is the fancy of the day, until may be, at no long future, an Architectural Association student will be found, sketch-book in hand, lost in admiration of the severe simplicity of Gower Street architecture. Yes, all is changed, and we are agreed that there is now no style in architecture which is worth dying for. For some years past men's faith in thirteenth century work as the *ne plus ultra* has been rudely shaken, and the influence of a younger school of clever architects, led by Sedding, changed our faith, or say, admitted into it greater latitude, and in the Church of the Holy Redeemer, Clerkenwell, and Holy Trinity Church, Sloane Street, we feel this force of Sedding's power and recognise what his teaching was; that we were free to adapt from the various styles what seemed most fitting and to cast aside the bonds of formalism which required chapter and verse for every feature introduced into a building. He declared, trumpet-tongued, that he, for one, would not be "cribbed, cabined, and confined" by canons which the older men had laid down, and maintained that salvation was also to be had in the "flat and pointed" with a little Classic, of a kind that would have made the men of the schools smile and wonder. Yet under Sedding's inspiration we feel, and more especially those who knew and loved him, the influence of his magic; and even though we may refuse to go all the way with him, we cannot but recognise the power and that something which it is difficult to define, but which we call genius.

### Sedding and his Imitators.

What Sedding's status will be in the hierarchy of art we must leave to the future; with the restraint that his genius imposed, what we feel, perhaps, inclined to condemn, we are compelled to condone. It is in his followers that we have to look for results, and we have not had to wait long for them; the illustrations published in the professional journals are many of them strange and eccentric. They exhibit a likeness to the work of the master, but the spirit is wanting in them. But though these efforts may fail, are they not the outcome of the cry for freedom from the shackles of formalism? If men, in the joy of this freedom, may here and there stray into the paths of licentiousness, let us not be too severe in our condemnation. In every known style under the sun there is truth and beauty, and a likeness which makes them all akin, and as the bee sucks the honey from every flower, so may we gather the sweets where we will. Who shall say that we are not to make use of ornament, no matter where we find it, if we have the wit; not a mere copying, but ideas worked out from it? "Whatsoever was written aforetime was written for our learning," may we not employ the words without irreverence? Evolution is at work now, as it ever was and ever will be.

### The Artist's Perplexities.

And what a perplexing state of things exists in our midst, and what difficulties it creates. The artist-decorator may, in the course of his practice, be called upon to decorate a church built in the Classic style, the Renaissance, the Romanesque, the Byzantine, the Mahomedan, or the Gothic; he will be required to do so in the correct style, as it is called, of the period of which the particular church is an example. Another time it will be a theatre, a concert or ball room, or mansion where maybe particular rooms are to be decorated in particular styles. Is it not, however, appalling, this demand upon the artist? No wonder if he bewails the age in which he has been born, and, from sheer weariness, closes his eyes and dreams of a time

in which one style was in vogue and one only; no newspaper critics, no art journals, no books on art, no cant and jargon of the stereotyped order—the one style, which yet gave infinite latitude to the ordered mind and the inventive genius. Small wonder that, with time to work out his idea, the Greek artist excelled in beauty of design which never lacked grace, and that quality of fitness and repose also to be found in the best Japanese art, which, alas! in its turn threatens now to become a thing of the past.

### Artist and Client.

One of the problems in colour decoration is to employ only those colours which will look well both by daylight and artificial light. These will be influenced again by the amount of daylight which is obtainable in the place which is to be decorated. Here only experience will guide you correctly, and here I may say how very difficult it is to prepare any sketch or drawing to show what you propose. Some artists positively refuse to do so, and no wonder. Still, there are clients who insist on having an idea of what the design is to be, and who will see a sketch first, and to a young artist just starting on his career, not to show what he is going to do may be fatal to his employment. Therefore, if it is insisted on, show as little colouring as possible, enough to give the general scheme, and guard yourself by saying that circumstances may compel you to alter as you go along. When the client has approved of a scheme, the best thing that can happen for both client and artist is, that the former shall go abroad for a short time and not see the work through all its stages until finished; for should the client not absent himself, but look in to see how the work is going on, he will in all probability destroy his own peace of mind and that of the artist.

### Conditions of Lighting.

Now interiors have to be used by daylight or by artificial light, and by both day and artificial light. By daylight, as picture galleries, banks, Courts of Justice. By artificial light, as theatres, ball-rooms, and other places of amusement, and by both day and artificial light, as churches, assembly and concert rooms, &c., and private houses. Under these conditions of lighting come others, and upon the way in which they are met will depend largely whether the decoration is successful or otherwise. A quiet half-hour in the place where you are called upon to show your skill, with sketch-book in hand, will be time well spent. If the place is used by daylight note what amount you have at your disposal, or will have when the windows are upholstered; what is the aspect, north, south, east, or west. Then to what use the apartment is to be put, and whether it is wanted for summer or winter use. Then, again, at what time of the year you see it, so as to judge of the amount of light; if a sombre and subdued effect is sought for, or a bright and cheery one. If, again, the apartment is to be used at night, obviously your colours must be tried by artificial light, and your experiments made by that kind of light which is to be adopted. If for day and night use you must use those colours which look well by day and night.

### Colour Trials.

The design thought out, you must first try the colours you are proposing to use upon the walls or ceiling, noting whether they are what you intended, and how one colour goes with another, always judging of this at the distance it will be when executed, and settling this upon the spot. This trial of colours upon the spot is of the first importance, as many are the changes that take place, and what looks well in one place looks bad in another. The experiments may be in colour only, without any design upon them, or you may, better still, put up full-size coloured cartoons *in situ*, and judge of the effect. Do not hurry over this stage of your work; it may take you hours only trying the colours and effects. Decoration needs the exercise of all the virtues, and patience in particular, and you cannot properly decide questions of colour with watch in hand nearing the hour at which your

train starts. Let him who thinks of embarking on the pursuit of decoration think on these things. When you get the colours and the design settled somewhat to your liking, you may consider yourself happy; vigilance will still be required, but the worst is over. If you have a good, intelligent, and honest foreman of painters, another great weight is taken off your shoulders; and by all means in your power interest those who are carrying out the work for you, and do not spurn their advice. It may be that you have to collaborate with some figure or landscape artist, and then your whole scheme of colour has to be subservient to his work. In fact, no two cases will be alike, and it will call forth all your powers of intelligence to meet and overcome the many difficulties that may arise.

### The Artist's Reward.

And the payment for all these years of study spent upon decorative work? Your payment must be in the first place the delight of doing colour and design, for it is seldom you are paid adequately for the labour and time it involves. You will sometimes find clients who are under the impression that the five per cent. will cover your expenditure of brains and time, and be genuinely surprised when you tell them that such payment is totally inadequate. A gentleman connected with a large firm of decorators once told me that they reckoned 20 per cent. in their estimates for the "brains," and for good work requiring special skill and much time, this is not excessive. Where a price is given for the work complete, a man knows what he is spending—stock, lock, and barrel—and pays the bill cheerfully. But if *plus* the actual cost of the decoration, a client has to pay the architect for his brains, skill, and time on the designing, he frequently feels aggrieved. Unreasonable, is it not? But a fact. Perhaps the best advice, from a purely commercial view, is to get what you honestly can, acquire a name and fame by judicious self-advertisement, strive to cultivate a manner, to become the fashion, by letting it be known far and wide by the blast of the sound of your own trumpet, that *you* are the artist to employ, and then Society will pay you anything in reason—and out of reason—you like to ask.

### The Discussion.

The Chairman, in opening the discussion, suggested that the lecturer's remarks as to the unsuitability of mosaic on flat surfaces were a little too sweeping. He instanced some of the work in St. Paul's Cathedral as an example of very beautiful work on a flat surface. He thought Japanese stencil work was worthy of close study, and urged the desirability of a closer sympathy between artists and architects.—Mr. L. A. Shuffrey, in proposing a vote of thanks, spoke of the importance to the architect of actual practice in painting. He did not like glazed tile work, but he advocated the use of polished marble.—Mr. J. D. Crace seconded the vote of thanks. He said that great injury was sometimes done to a building by the failure of the artist to get into sympathy with the architectural intention of the building. It was most important to try to realise what system of colour would best bring out features which were intended to be the expression of form in the building itself.—Mr. H. W. Pratt instanced the decoration of St. Paul's Cathedral as a case in which a method of decoration never intended by the architect had been adopted; he worded what Sir Christopher Wren would think if he could see the havoc that was being made with his magnificent building.—Mr. E. Howley Sim, and Mr. Matthew Garbutt continued the discussion, the vote of thanks was heartily agreed to, and the meeting terminated.

No. 17, Fleet Street, is to be pulled down and rebuilt, and set back 5ft. to widen the street. This quaint old building is nearly opposite Chancery Lane, and is spoken of as the palace of Henry VIII. and Cardinal Wolsey. The gateway to the Temple forms part of the building, and will also have to be set back.



# Professional Practice.

**Axminster.**—The chancel of Axminster church has recently been enriched by the addition of choir stalls, altar rail, and credence table, from designs by Mr. W. D. Caroe, M.A., architect of London. The credence table is a gift of the late Mr. G. A. Spottiswoode, Chatton Hall, Axminster. The work throughout has been executed in English oak, finely carved and traceried, and was carried out by Mr. Wm. Dart, Ecclesiastical Works, Crediton.

**Birkenhead.**—The new Liberal Club at higher Tranmere, Birkenhead, which is the gift of Mr. W. H. Lever, is now in course of erection. The building is of a Renaissance character, and will be of red brick with Brynteg ne dressings. The accommodation will include assembly hall to seat 400, billiard room, three tables, smoke room, reading room, refreshment bar, kitchen, store cellars, storerooms, and cloak rooms, retiring rooms, &c. The contract is let to Messrs. John Lee, and W. M. Bebbington, Cheshire, and the work is being carried out from the plans of Mr. T. Taliesin Rees, A.R.I.B.A., architect, Birkenhead.

**Blenau Festiniog (N Wales).**—The contract for the County Police Buildings, which are now being erected, has been let to Mr. Lachlan, whose tender was the lowest. The building will be erected of local stone and red sandstone designs. The design, which was selected in open competition, is from the office of Mr. T. Taliesin Rees, A.R.I.B.A.

**Bootle.**—The new Welsh Congregational chapel to be erected in Trinity Road, Bootle, has been entrusted to Mr. T. Taliesin Rees, A.R.I.B.A., Birkenhead. The design was selected from a number sent in a limited competition. The building will be erected in red brick and terra cotta.

**Dublin.**—The United Presbyterian Church in Lower Abbey Street has lately been enhanced by the addition of a memorial window, situated above the organ and behind the pulpit. It is circular in design, consisting of a large central opening, surrounded by six smaller circles, cusps, &c. The centre has been filled with a figure of Our Lord, while the surrounding panels contain pictorial representations of the four Evangelists, and of St. Andrew, and a floral design with memorial inscriptions. The tracery of the window is of an early English pattern, and the glass ornamentation, which follows the style of Albert Parker, has been designed with a view to preserving a harmony between it and the interior. Mr. Joshua Clarke, of North derick Street, Dublin, who has recently completed over thirty stained-glass windows in Ireland, was intrusted with its production.

**Lurgan.**—A new and handsome edifice has been erected by the Baptist congregation in Lurgan, just been opened for public worship. The building is located on Windsor Avenue. The church has been erected by Messrs. Redmond and McCullough, Lurgan, to plans by W. Redmond. The design is Gothic in style, and the building is of red brick, covered with red sandstone. It is 50ft. long, 10ft. wide, and is capable of seating 250 persons. The pulpit is an ornate modern, of rich unpretentious, structure, and the interior finish is chaste and agreeable. Modest vestries are situated at the rear of the edifice.

**Mistley.**—A new infants' school, annexed to the Norman Schools at Mistley, has been erected. The cost has been nearly £700. The architects were Messrs. Baker and May, and the builder was Mr. T. Canham, of Weeley. The building is an extension of the existing school, which were built at a cost of £4000 in 1856, "for the education of the children of the poor in the principles of the Church of England."

# Under Discussion.

## ALBRECHT DURER.

The ninth of the series of fortnightly lectures on Art subjects, at the Glasgow Corporation Galleries, was delivered on the 18th Feb. by Mr. J. Wilhelm Rowntree, of York, whose subject was "Albrecht Durer." Mr. Rowntree first alluded to the great commercial importance of Nuremberg during the Middle Ages, and pointed out that with its commerce its citizens enjoyed a large measure of freedom, and thereby a flourishing school of Art was fostered, just as in Glasgow the commerce and freedom of to-day have also evolved the famous Glasgow School. The highly interesting conditions of life under which the young Durer developed were sketched in a graphic manner. He was born when the Renaissance had made rapid progress south of the Alps; in his own country the great Reformation movement was in process of evolution, and Albrecht Durer was a friend and correspondent of many of the first leaders of that tremendous contest. The many circumstances in his life were then dealt with, and thereafter a most complete and exhaustive series of illustration of his works were shown on the screen, and commented on with much vigour and discrimination.

## STYLE IN ARCHITECTURE.

Mr. Leslie Ower, F.R.I.B.A., delivered a lecture on February 18th, to the students' section of the Dundee Institute of Architecture. There was a large attendance, and Mr. C. Soutar, the honorary secretary, presided. Mr. Ower's subject was "The evolution of style in Architecture." In the course of his lecture he said what the British style might be like when it had arrived at its perfection—whether it would be akin to Renaissance, Gothic or Classic; whether the chief material would be stone or brick, or iron, or concrete, or some new thing undreamed of in our philosophy—it would be idle to speculate. Meantime let them with unprejudiced minds and honesty of purpose strive to satisfy the wants and aspirations of the age they lived in, using judiciously but fearlessly the new inventions, materials, and opportunities which their scientific age and powerful nation had so abundantly provided for them, designing with beauty and building with truth, assured that thus, and thus only, would they worthily fulfil their part in the creation of a national style of that great and noble art which they all so much loved and admired. The lecture was illustrated by lantern views of ancient and modern buildings.

## COMING EVENTS.

### Wednesday, March 1.

EDINBURGH ARCHITECTURAL SOCIETY.—A. Balfour Paul, on "The Treatment of the Staircase." 8 p.m.  
MANCHESTER MUNICIPAL SCHOOL OF ART LECTURES.—T. J. Cobden-Sanderson on "Bookbinding as an Art." 7.30 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.) Inspection and demonstration in the Parish of St. George's, Hanover-square, at 2 p.m. Conducted by Mr. Albert Taylor.

NORTHERN ARCHITECTURAL ASSOCIATION.—J. Walton Taylor on "The Bricks used in Northumberland and Durham." 7.30 p.m.

ROYAL ARCHEOLOGICAL INSTITUTE.—(1) H. S. Cowper, F.S.A., on "The Influence of the Roman Occupation on the Distribution of Population in Cumberland and Westmoreland." (2) W. H. Knowles on "An Effigy of a Knight in Warkworth Church, Northumberland." 4 p.m.

BRITISH ARCHEOLOGICAL ASSOCIATION.—The Rev. W. S. Lach-Szyrma, M.A., on "Thoughts on Ancient British Costume." 8 p.m.

SOCIETY OF ARTS.—Wilton P. Rix on "Leadless Glazes." 8 p.m.

ST. PAUL'S ECCLESIASTICAL SOCIETY (Chapter House, St. Paul's).—J. Lewis André, F.S.A., on "The Mural Paintings of Sussex Churches." 7.30 p.m.

### Thursday, March 2.

LONDON INSTITUTION.—The Rev. Canon Benham, D.D., on "St. Alban's Abbey." 6 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.) Prof. A. Bortock Hill, M.D., on "Trade Nuisances." 8 p.m.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—The First Conversation at the Galleries of the Royal Institute of Painters in Water Colours, Piccadilly. Exhibition of Paintings in Pastel.

INSTITUTION OF ELECTRICAL ENGINEERS.—G. Marconi on "Wireless Telegraphy." 8 p.m.

INSTITUTION OF CIVIL ENGINEERS.—Student's visit to the works of Maudslays, Sons, and Field, Westminster Bridge-road, S.E. 2.30 p.m.

### Friday, March 3.

ARCHITECTURAL ASSOCIATION. A. Saxon Snell on "Public Baths." 7.30.

GLASGOW AND WEST OF SCOTLAND TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMAN'S SOCIETY.—James McKisack, on "Half-Timber Work," with limelight illustrations. 8 p.m.

INSTITUTION OF JUNIOR ENGINEERS.—W. R. Cooper, M.A., on "The Direct Production of Electricity from Carbon." 8 p.m.

ROYAL INSTITUTION.—Lord Rayleigh on "The Mechanical Properties of Bodies." IV. 3 p.m.

SOUTH KENSINGTON MUSEUM (Lecture Theatre).—William Burton on "Pottery." II. 3.30 p.m.

### Saturday, March 4.

ARCHITECTURAL ASSOCIATION.—Third Spring Visit. SANITARY INSPECTORS' ASSOCIATION.—Professor W. W. F. Pullen on "Furnaces and Smoke Prevention."

BRITISH INSTITUTE OF CERTIFIED CARPENTERS.—Visit to the Prudential Assurance Office at 3 p.m. H. A. Davey on "Shoring," at 6 p.m., at Carpenters' Hall.

### Monday, March 6.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.—Exhibition of Institute Drawings. Nomination of Officers.

LIVERPOOL ARCHITECTURAL SOCIETY.—Edward S. Prior, M.A., on "Business in Architecture."

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—A. C. Dickie, on "Some Early Christian Churches in Palestine." 8 p.m. Preceded by a business meeting, including election of Royal Gold Medalist.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Alfred Hill, M.D., on "Diseases of Animals in relation to Meat Supply; Characteristics of Vegetables, Fish, &c., unfit for food." 8 p.m.

SOCIETY OF ARTS.—(Cantor Lectures).—Archibald Sharp, A.M.I.C.E., on "Cycle Construction and Design." III.

VICTORIA INSTITUTE.—Meeting at 4.30 p.m.

### Wednesday, March 8.

EDINBURGH ARCHITECTURAL ASSOCIATION.—James Campbell Irons on "The Architectural Antiquities of Leith." 8 p.m.

MANCHESTER MUNICIPAL SCHOOL OF ART LECTURES.—Hugh Stanners, F.R.I.B.A., on "Storation in Manchester."

NORTHERN ARCHITECTURAL ASSOCIATION.—Annual Meeting at 7.30 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Inspection and demonstration at the L.C.C. Municipal Lodging House, Parkes-street, Drury Lane, at 3 p.m. Conducted by Frank Ruddle, of Estates and Valuation Department L.C.C.

SOCIETY OF ARTS.—Ordinary Meeting at 4.30 p.m.

## CURRENT PRICES.

### OILS AND PAINTS.

Castor, French	per cwt.	1 4 0	—
Colza, English	per cwt.	1 2 6	—
Copperas	per ton	2 0 0	—
Kerosine, water white	per cwt.	1 5 0	1 15 0
Lard	per ton	23 10 0	82 10 0
Linseed	per cwt.	0 17 9	0 17 10 1/2
Neatsfoot	per gal.	0 2 6	0 4 0
Paraffin	per cwt.	0 10 0	0 19 0
Pitch	per cwt.	0 8 0	—
Tallow, Town	per cwt.	1 1 6	—
Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 12 0	—
Glue	per cwt.	1 19 6	2 18 6
Lead, white, ground, carbonate per cwt.		0 19 0	—

### METALS.

Copper, sheet, strong	per ton	80 0 0	82 0 0
Iron, bar, Staffs, in London	do.	6 5 0	7 10 0
Do. Galvanised Corrugated sheet	do.	11 0 0	11 10 0
Lead, pig, Spanish	do.	14 2 6	14 5 0
Do. English common brands	do.	14 5 0	14 7 6
Do. sheet, English, 1lb. per sq. ft. and upwards	do.	16 10 0	—
Do. pipe	do.	17 5 0	—
Nails, cut, 1/2 in. to 6 in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Straits	do.	109 0 0	—
Do. English ingots	do.	112 0 0	113 0 0
Zinc, sheets, English	do.	27 10 0	28 10 0
Do. Veille Montaigne	do.	31 0 0	—
Do. Spelter	do.	28 0 0	28 5 0

### TIMBER.

#### SOFT WOODS.

Fir, Dantzic and Memel	per load	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Laths, log, Dantzic	per fath.	4 10 0	5 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Deals, Archangel 2nd & 1st per P. Std.	do.	9 15 0	10 5 0
do. do. 4th & 3rd.	do.	10 0 0	11 0 0
do. do. unsorted	do.	7 5 0	8 5 0
do. Riga	do.	8 5 0	9 5 0
do. Petersburg 1st Yellow	do.	14 0 0	14 15 0
do. do. 2nd	do.	8 0 0	9 0 0
do. do. Unsorted	do.	8 0 0	9 0 0
do. do. White	do.	7 15 0	9 15 0
Do. Swedish	do.	9 15 0	12 10 0
Do. White Sea	do.	10 15 0	18 0 0
Do. Quebec Pine, 1st	do.	22 15 0	24 5 0
Do. do. 2nd	do.	11 10 0	—
Do. do. 3rd &c.	do.	7 5 0	9 10 0
Do. Canadian Spruce, 1st	do.	8 15 0	9 0 0
Do. do. 3rd & 2nd	do.	7 5 0	7 15 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	do.	6 10 0	7 7 6

Flooring, Boards, 1 in. prepared, 1st	per square	0 12 6	—
Do. 2nd	do.	0 10 9	0 11 6
Do. 3rd &c.	do.	0 9 6	0 10 6

#### HARD WOODS.

Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 0 0	5 0 0
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, lin., Cuba	per ft. sup.	0 0 4	0 0 4 1/2
Do. Honduras	do.	0 0 4 9 1/2	—
Do. Tobago	do.	0 0 4 1/2	—
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 5 1 1/2	—
Do. African	do.	0 0 3 11 1/2	—
Do. St. Domingo	do.	0 0 5 1 1/2	—
Do. Tobago	do.	0 0 5 5 3/2	—
Oak, Dantzic and Memel	per load	8 5 0	9 15 0
Do. Quebec	do.	4 12 6	—
Teak, Rangoon, Planks	do.	8 10 0	13
Wainscot, Riga (Bauk)	do.	3 15 0	—
Do. Odessa Crown	do.	3 15 0	—
Walnut, American	per cub. ft.	0 1 9	—



## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

**ASTON MANOR.**—For the erection of walls, piers, &c., Upper Wotton, for the Urban District Council. Mr. H. Richardson, C.E., Council House, Aston Manor:—

	With Concrete Coping.	With Brick Coping.
Halbert and Ladbury ...	£1,268 4 0	£1,301 14 0
Oldfield and Jeacock ...	1,191 0 0	1,160 0 0
G. Law ...	1,175 0 0	1,175 0 0
T. Elvins ...	1,150 0 0	1,130 0 0
W. Hopkins ...	1,110 0 0	1,130 0 0
Curral and Lewis ...	1,117 4 2	1,122 8 8
R. Merton Hughes ...	996 0 0	994 0 0
W. and A. Heaps ...	967 6 6	967 0 0
G. Trenham ...	908 7 6	1,000 18 6
E. Garfield, Birchfield-road, Aston Manor (accepted) ...	905 10 0	917 0 0

**BANBURY.**—For additions to public swimming-baths, for the Town Council. Mr. N. H. Dawson, C.E., Town Hall, Banbury:—

J. S. Kimberley ... £1,478 Orchard and Son, Banbury (accepted) ... £1,393

**BAKEWELL.**—For the erection of an infirmary and additions to workhouse, for the Union Guardians. Mr. E. M. Longsdon, architect, Town Hall, Bakewell. Quantities by the architect:—

T. Allsop and Son ... £6,572 Henry Jordan, Horsley

Cox, Wilson, and Son ... 6,381 Wood House, Derby\* £5,794

Geo. Knowles ... 6,058 \* Accepted.

**CARDIFF.**—For the erection of private improvement works, for the Corporation. Mr. W. Harpur, C.E., Town Hall, Cardiff:—

Streets.	James Rich.	Thos Rees.	Frank Ashley.	Wm. Ellis.	Chas. Davies.	Eliz. Osmond.
Colwin-place ...	£181 8 11*	£106 13 9	£222 2 0	£194 9 5	£185 5 11	£186 18 3
Corbett-avenue ...	69 4 6	70 8 6	105 5 0	78 14 7	71 11 0	67 1 2*
Beacon-street ...	137 13 10*	149 14 6	—	140 10 6	140 14 1	144 11 9
Meadow-street ...	184 14 5*	200 10 9	—	183 16 4	189 1 2	194 6 11
Bloom-street ...	160 17 8*	174 13 0	—	167 11 4	164 15 6	168 19 3
Romilly-lane ...	125 12 1	—	—	127 8 8	125 17 6	115 18 4*
Singleton-road ...	471 13 5	—	—	393 19 4	387 2 2*	398 12 10
Moorland-road ...	457 8 1	—	—	415 2 4	439 19 1*	452 19 8
Pontypidd-street ...	117 16 2	—	—	113 19 8	113 8 5*	117 0 4

\* Accepted.

**GATESHEAD.**—For the erection of a nurses' home, Coatsworth-road:—

Mr. R. Draper and Son ... £2,321 4 7 J. Ross ... £1,929 7 3

A. Pringle ... 2,321 0 0 G. T. Manners ... 1,896 0 0

T. and R. Lamb ... 2,068 0 9 Turner Bros. ... 1,887 0 0

Morrison and McBean ... 2,053 18 0 J. Wales and Co. ... 1,850 0 0

Woodall & Wilson ... 2,042 5 0 J. C. Mather, Gateshead\* ... 1,797 18 3

H. and B. Arkless ... 1,938 7 0 \* Accepted.

**LAPFORD (North Devon).**—For certain painting, paper-hanging, and repairs to "Kelland Barton," for Wm. Ford, Esq. Mr. Edgar M. Leest, architect, Public Hall-chambers, Devonport. Quantities by the architect:—

Saunders & Hull ... £180 0 5 W. J. Hooking ... £95 8 0

Wm. Gibson ... 113 0 6 West and Co. ... 89 0 0

Bealey ... 100 0 0 H. Grant ... 88 0 0

Plymouth House Decoration Co. ... 100 0 0 Gill and Son ... 82 0 0

Limited ... 99 10 0 Thomas & Jennings ... 80 0 0

T. Skinner ... 99 10 0 R. Gough ... 74 18 6

Tucker ... 99 10 0 Fisher Bros., North Tawton\* ... 69 10 0

Hoskin ... 99 3 9 \* Accepted.

**LONDON.**—Removing three temporary iron buildings, &c., from the Lee-street site and re-erecting them upon the Browhill-road site, for the London School Board:—

T. Crawley ... £1,450 0 0 J. & W. T. Hunter ... £1,150 0 0

Humphreys, Ltd. ... 1,348 0 0 T. J. Hawkins & Co., Ashford, Middlesex\* ... 1,092 7 6

W. Harbrow ... 1,320 0 0 \* Accepted.

Crogon and Co. ... 1,250 0 0

J. Milson and Co. ... 1,221 0 0

**LONDON.**—Removing and rebuilding offices (all departments), Bushmore-road, further away from the school building, to allow for the provision of halls, and providing new drainage. For the London School Board:—

G. Munday and Sons ... £2,738 E. Lawrance and Sons ... £2,475

G. S. S. Williams & Son ... 2,683 Stevens Bros. ... 2,392

L. H. and R. Roberts ... 2,596 F. Bull\* ... 2,318

W. Akers and Co. ... 2,589 \* Accepted.

**LONDON.**—For improvements to Cranbrook-road School, for the London School Board:—Halls for boys, girls, and infants; infants' teachers' room on arches; re-arranging stepping and lighting to centre class-rooms; providing stock-rooms for all departments. Revised accommodation: Boys, 464; girls, 464; infants, 574; total, 1,502. (Rooms interfered with placed on seat basis):—

J. Chessum and Sons ... £8,010 F. and F. J. Higgs ... £2,470

McCormick and Sons ... 5,828 E. Lawrence and Sons ... 5,338

W. Shummur ... 5,793 Wilmot and Sons ... 5,200

J. Grover and Son ... 5,695 C. Cox (accepted) ... 5,189

**LONDON.**—Erecting manual training centre, Haber-road (on arches), for forty boys, and drawing class-room. For the London School Board:—

Kirk and Randall ... £2,381 F. and F. J. Higgs ... £2,739

A. White and Co. ... 2,935 J. Garrett and Son ... 2,739

W. J. Mitchell & Sons ... 2,930 J. and C. Bowyer ... 2,637

J. Smith and Sons ... 2,912 J. Marsland ... 2,637

G. E. Wallis and Sons ... 2,887 E. Triggs ... 2,530

W. Johnson & Co., Ltd. ... 2,810 Edwards and Medway\* ... 2,522

\* Accepted.

**LONDON.**—Enlargement of Kenmont-gardens School, for the London School Board. Boys, 52; girls, 52; infants, 40 (seat basis); total 144. Providing halls for departments, new girls' staircase, additional water-closets for girls, new boys' teachers' water-closet; removing galleries from infants' room, and providing new Kindergarten gallery in babies' room, and stepping floors; and removing, adapting, and re-fixing infants' partition, also providing new drainage scheme:—

C. Wall ... £7,054 E. Triggs ... £6,274

T. H. Green ... 6,797 O. Craske ... 6,200

T. Gregory & Co. ... 6,547 J. Longley & Co. ... 6,183

J. and M. Patrick ... 6,607 R. A. Verbury & Sons ... 6,161

W. Scrivener & Co. ... 6,343 Lathey Bros.\* ... 6,011

\* Accepted.

**NEWMILNS (N.B.).**—For the construction of a storage reservoir, Auchruglin Burn. Mr. P. C. Hart, C.E., 134, St. Vincent-street, Glasgow, and 32, John Finnie-street, Kilmarnock:—

William Simpson, Bonhill, Dumbarton-shire ... £1,292 15 0

Glenfield Company, Ltd., Kilmarnock (valves, &c.) ... 82 8 0

**SALISBURY.**—For the erection of a railway hotel and stables for Messrs. Gibbs, Mew and Co., Limited, Messrs. John Harding and Son, architects, 58, High-street, Salisbury. Quantities by architects:—

Stephens, Bastow & Co. ... £3,998 E. Hale ... £2,775

Annett and Son ... 3,500 Wort and Way ... 2,698

Jenkins and Sons ... 3,046 T. Dawkins, Barford, street, Martin, Salisbury\* ... 2,430

Long and Sons ... 2,800 \* Accepted.

Webb and Co. ... 2,800

**SWINDON.**—Accepted for the erection of "Even Swindon Hotel." Mr. W. H. Read, architect, Corn Exchange Swindon:—

C. Williams, Swindon ... £3,065

## "ROOFING" and other FELTS

In Rolls 25yds. Long, 32in. Wide. Any quantity sent off at a moment's notice.

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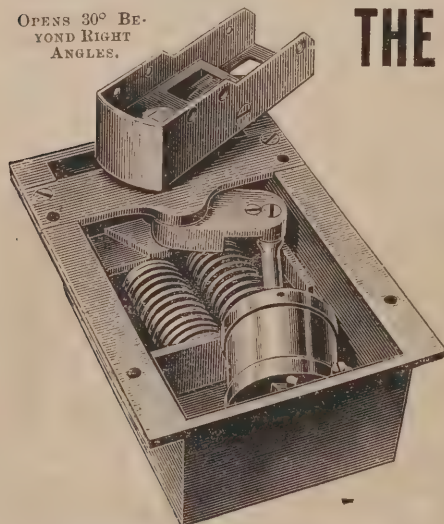
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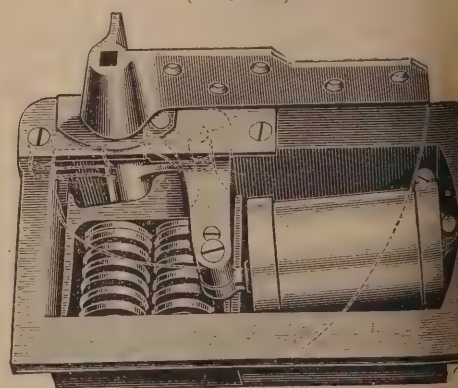
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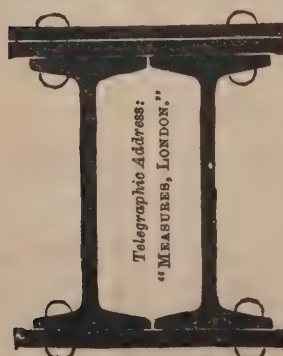
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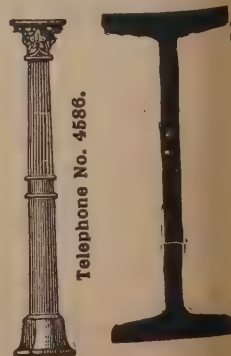
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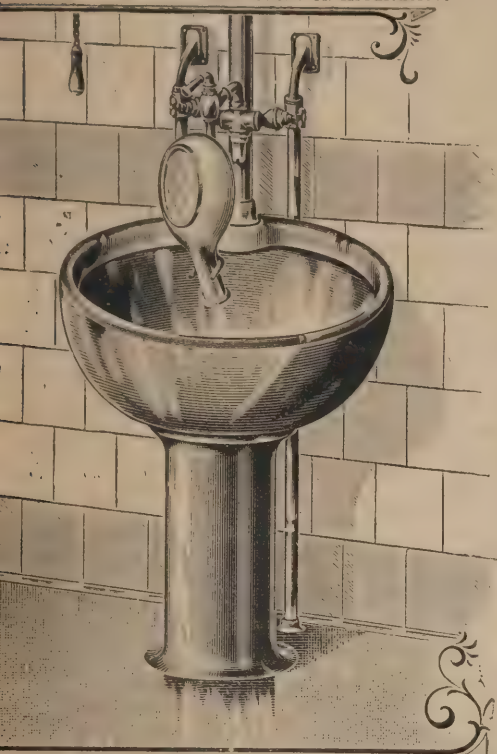




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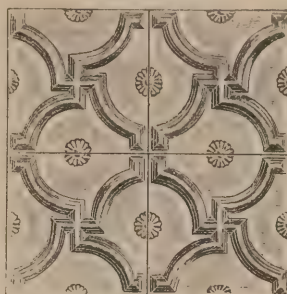
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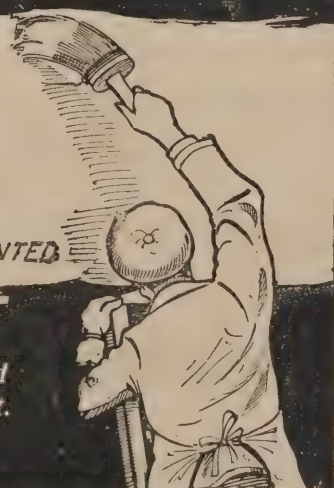
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ROGERSTONE (Mon.)—For the erection of fourteen houses at Rogerstone (Mon.), for Mr. A. Dardis, Messrs. Swallow and Creighton, architects and surveyors, Dock-street, Newport (Mon.) Quantities by the architects:—

	A	B
W. P. Forward	£1,900 0	£5,035 9 4
Newport Gen. Builders		
Limited	4,850 0	5,000 0 0
Powell and Mansfield	4,800 0	5,099 0 0
Newman and James	4,665 12	4,779 12 0
D. Jones	4,562 0	4,781 12 0
D. Lewis	4,560 0	4,769 0 0
W. Sier	4,500 0	4,700 0 0
Thomas and Son	4,500 0	4,680 0 0
C. H. Reed	4,450 0	4,650 0 0
A. S. Morgan and Co.	4,430 0	4,750 0 0
D. J. Davies	4,436 6	4,570 0 0
A. Lawson	4,300 0	4,510 0 0
J. Jenkins	4,180 0	4,343 0 0
J. Moore	4,176 13	4,333 14 0
W. Bambury	3,795 0	3,950 0 0
W. Baglow	3,780 0	3,850 0 0
J. Partridge	3,700 0	3,950 0 0
J. Lendbeater	3,650 0	3,863 0 0
G. Martin and Son	3,477 0	3,695 0 0
J. Pritchard	3,519 0	3,669 0 0
J. Lewis	3,157 0	3,296 0 0
Smith Bros., Newport*	3,070 0	3,220 0 0

\* Accepted.

Estimate A faced all round with stock bricks.  
Estimate B faced all round with best pressed facing bricks.

WALLINGFORD.—For the erection of children's quarters, for the Wallingford Board of Guardians. Messrs. Charles Smith and Son, architects, 164, Friar-street, Reading:—

Bartlett Bros.	£1,910 10 0	J. H. Margetta	£3,235 0 0
Wm. Stokes	3,560 0 0	Higgs & Sons	3,250 0 0
Walden & Cox	3,468 10 0	Spear & King	2,975 0 0
T. J. Kingerlee	3,397 10 0	W. Hawkins	2,955 0 0
E. C. Hughes	3,321 0 0	Brashur & Sons	
G. H. Tucker	3,300 0 0	Wallingford*	2,937 0 0

\* Accepted subject to the approval of the Local Government Board.

WIMBLEDON.—For the erection of an isolation hospital, Gap-road, for the Urban District Council. Mr. C. H. Cooper, C.E., Council Offices, Broadway, Wimbledon:—

Tonge	£25,232	Speachley and Smith	£22,100
Minter	23,534	Cheesum	21,521
London	23,333	Garratt	21,439
Godson	22,612	Bulled and Co., Croy-	
Pattinson	22,326	don (accepted)	20,197
General Builders, Ltd.	22,179	Gough	19,964

WIMBLEDON.—For new depot, Haydon's-road, Wimbledon, for Messrs. Eastwood and Co. Mr. O. Maxwell Ayrton, architect:—

Pearson and Co.	£1,560	Holdstock and Mould	£1,278
F. G. Minter, Westminster (accepted)	1,439		

## CONTRACTS OPEN.

### COWES URBAN DISTRICT COUNCIL GAS DEPARTMENT.

The Cowes Urban District Council invite TENDER for the ERECTION of COAL STORES, comprising steel and iron structure on concrete foundations and covered with wrought-iron roof in two spans; each 35ft.

Plans may be seen at the office of the Engineer and Surveyor to the Council, and specifications and form of Tender can be obtained on payment of the sum of Five Shillings, which will be returned on receipt of a bank note.

Sealed Tenders, endorsed "Tender for Coal Stores," are to be delivered to the Secretary, Mr. W. M. HALLIDAY, 45, High-street, Cowes, on or before MONDAY, the 13th day of MARCH, 1899, not later than TWO p.m.

The Council do not bind themselves to accept the lowest or any Tender.

Council Offices,  
Cowes, I.W.  
February 21st, 1899.

JOHN W. WEBSTER,  
Engineer and Surveyor.

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## THE FORMATION OF SOILS.

By GUY CADOGAN ROTHERY.

(Continued from page xiv.)

**INFLUENCE OF CLIMATE.**—The combined effects of all these agencies of "weathering" are prodigious, but will vary largely in different localities, not so much owing to the prevailing geological formation, but because of the atmospherical and meteorological conditions. This fact is well brought out by Professor Hilgard in contrasting the influence of the arid climate on the granitic rocks of the southern Alleghanies, the plateau west of the Rocky Mountains, and in California and Arizona, with the more humid climate prevailing on the Atlantic slope. In the first instances, and in that of the Sierra Madre, the sharpness and roughness of the rocks are remarkable; but where the granite has been exposed to the Atlantic humidity the granites are "rotten," the mountains being rounded off, while in most positions it is impossible to find sound, unaltered rock at a less depth than forty feet. Climatic conditions influence quite as strongly the qualities of soils, for in humid regions where there is much rain a large percentage of the salts and minerals is washed away, and there is a considerable difference between the upper layers and the subsoils. On the other hand, in dry climates, where the rains are torrential, but rare, and of short duration, salts are washed down to only a slight depth, and then, owing to the lightness of the soil and the heat, capillary action is great, and evaporation is also abnormal, so that the salts are brought to the surface again, which gives rise to the alkaline lands of Asia, Europe, and America. Dry, warm climates generally conduce to a striking uniformity of soil characteristics for considerable depth. Professor Hilgard instances a case of a cellar near Nevada City, California, 7ft. to 10ft. deep, where the red subsoil mass dug out was spread over a part of a vegetable garden close by, and as a venture the annual vegetables were sown on it. They not only did well, but even better than those on portions not covered, which had been cultivated for a number of years. Even material from 30ft. depth, he says, acted similarly, showing that it possessed an abundance of the mineral salts which furnish the nutritive elements to the plant life—a wealth due to the dryness of the climate.

Soils are divided, as regards locality of formation, into sedentary and "transported." The sedentary soils are the result of rock disintegration, which remain in position. They are generally of a loose and stony character, the pebbles being of an angular form. Transported soils are rock debris moved from one place to another by different agencies. They are divided into "drift" soils, moved by winds, ice floes, or landslips, and "alluvial" soils, transported by water. Drift soils are very similar in physical qualities to the sedentary classes, being loose and stony, but more worn and rounded. Water transports soils in various ways. Rains and rivers wash down rock debris, and seas and lakes sap and undermine coasts and banks, earthy matter being carried along by the moving waters, and the solid matter is gradually deposited as the water loses its velocity or becomes calm. The tendency of water is to mechanically separate the rock debris according to their size, shape, and specific gravity. The heavier and most angular solid particles are first deposited, while the lighter matter is carried longer in suspension, moved furthest away, and deposited the latest. Thus alluvial soils are usually very uniform in physical character, though local circumstances may modify general tendencies. Clays are the principal type of fresh water "alluviums," while chalks are the types of sub-oceanic deposits. Lime is washed out by the rain and river water charged with carbonic acid, and is present in sea waters as a minutely separated powder, which under the ordinary restless state of large bodies of water, with their currents and constant upward and downward motion caused by tides, evaporation and

changes of temperature, would not easily gravitate to the ocean bed; but the waters are crowded with small living creatures, the radiaria and diatomaceae, which secrete the lime in order to form delicate shells, they float on the surface of deep seas in profusion, and as they die, the shells fall down very slowly but in a continuous rain. Then there are the globigerinæ, with their comparatively heavy, solid shells, aggregated together, more or less, forming chambered globose segments, often seen as coccopheres, a mass of protoplasm enveloped in calcareous shells. Vast tracts of the Atlantic bed are covered with globigerina mud, which in its first stage appears as a grey coloured ooze of great depth, in which globigerina, coccopheres, larger shells and fish bones are buried. At greater depths the deposit assumes more consistency, while the traces of shells and animal remains become rare and tend to disappear altogether, as it hardens into chalk.

Professor Huxley has shown that chalk formations on land are exactly similar, and consist principally of globigerina with silicious sponges, mollusca, crustacea, and schimoderms. Professor Thompson believes this ocean globigerina mud to be a continuation of the Cretaceous formation. These chalk formations are very compact, but are hollowed out into caverns and channels, by the action of water. Coral polyps also play an extensive part in building up calcareous rock formations with their skeletons formed with the lime extracted from the sea. Polyps are widely distributed over the globe, but the most important are the white coral polyps in seas of warm latitudes. They secrete carbonate of lime to form their skeletons, which are hard, though more quickly formed than the red corals of the Mediterranean. Darwin has shown that white coral polyps cannot live at greater depths than from twenty to twenty-five fathoms; but we know that coral rocks and islets run down fifty and a hundred fathoms in the sea, and then show up well above the waters. This is explained by the gradual sinking of the sea bottom, with perhaps a final rise. The polyps form a fringe on the shallow sea bottom round land, and gradually build from their fifteen or twenty fathoms to the water's edge, then as the bottom sinks they build up and up, so that the roots of these coral tree islands are hundreds of feet below the level of the sea. A very considerable amount of land is due to the work of these coral polyps, for their spiky calcareous skeletons form extensive reefs near the sea-level, in which other animal forms, vegetable debris, drift, etc., is caught up, by which means soil is formed, wherein water floated and wind drifted seeds of water-loving plants, such as the cocoanut palms, etc., germinate, and afford a stronger nucleus for soil formation, aided occasionally by volcanic submarine action, which may cause an upheaval. Molluscs and crustacea also derive the lime for their shell from the sea water. Oyster shells vary considerably in their composition according to locality. At Herne Bay the organic matter in the shells is 0.096, phosphate of lime 0.047, carbonate of lime 0.857; in those of the North Sea, organic matter is 0.041, phosphate of lime 0.011, carbonate of lime 0.948. And yet there is only a very small trace of neutral carbonate of lime in sea waters. It has been suggested that part of this carbonate may be obtained by the molluscs and crustacea direct from the rocks; in which case they would be a direct cause of disintegration, and indirectly of soil formation.

Most alluvial deposits make heavy, dense soils, generally very uniform, though often stratified, owing partly to variations in the deposit, and also to the movements of the earth's crust, which being alternately elevated and depressed, modifies the tendencies of the agencies at work. Thus an alluvial soil may be considerably modified either by the silting up of a river, estuary or lake, or the withdrawal of the water, when other soils may be transported and deposited over it, or be intermixed with it by the action of ice, wind, or landslip. The Fen country offers a very interesting geological lesson. It is quite clear that at one time, when England was joined to the Continent, it formed compara-

tively high land. It was then depressed, probably below the sea-level; this was followed by an upheaval, and we find upon the clays evidence of the Glacial Period, with its formation of Boulder clays and strangely transported rock debris from the far North. Over this a pasture and forest covered land was formed, which, on being depressed and flooded, was encroached upon, and swallowed up by peat-bogs. But there again came a gentle upheaval, so that peat bogs have long since ceased to be actively formed, the living mosses have disappeared, and thus we now find pasture both under and above the peat, and alluvial deposits. These successive changes caused the rivers to alter their beds, eating their way through hills, and bringing down fresh kinds of alluvium.

**CLASSIFICATION OF SOILS.**—Soils are further divided into "gravels," more or less broken up rock debris, generally silicious in nature; "sand," a minute form of gravel, but usually of a silicious nature, though in places calcareous. Sands in Southern Seas are nearly always formed from coral debris, and consequently are calcareous; "calcareous" soils, more or less divided earthy matter with lime; "clay," finely divided granite and plutonic rock debris, containing felspar and potash (Kaolin) mixed with more or less sand, humus, etc., which is of a compact nature, rich in aluminium and silicates; "loam," a mechanical mixture of clay and sand; "marls," mixtures of lime and clay; "humus" and "peat," of a vegetable nature. But these terms are somewhat loose, being capable of varying application, and the soils in each division though bearing certain chemical and physical characteristics in common with their classes, may really differ widely from each other. The size of the particles composing the soil is of the utmost importance, both as regards their relation to health, and their stability and other physical properties. Indeed, the physical characteristics of soils are generally of greater moment than their chemical formation, even as regards agriculture. Professor Hilgard shows how much depends upon physical phenomena. "It makes a material difference," he says, "whether the grains of sand contained in a soil or clay are prevalently half a millimeter in diameter, or the tenth or twentieth part of that amount, sand (or more properly silt) of the latter size is by no means impalpable; and yet a soil containing 50 per cent. of this substance might be exceedingly heavy in tillage, while it would be light if the sand grains approached 0.5 millimeter in diameter. And it would make an equally material difference, whether or not the impalpable matter classed as "clay" were really, in the main, silicate of alumina, or simply silex, or other mineral powder." The physical composition of a soil will largely determine its porosity, permeability, power of absorbing and retaining moisture, atmospheric air and heat. Minuteness of division tends to make a soil "heavy" and less permeable both to water and heat. But very loose, sandy, or gritty soils, though permeable, have no high retentive powers for either moisture or heat.

Capillarity, and, consequently to a large extent, evaporation and radiation, are mainly influenced by physical conditions. In a moderately compact soil the qualities are highly marked, but if the particles are very minutely divided, and a really "heavy" soil is the result, the capillarity is low, as are absorption, evaporation, and radiation. Consequently, "heavy" soils are cold or either very dry or very wet. But while the physical peculiarities are so important, the chemical composition of soils must not be neglected. As Professor Hilgard points out "clays" differ widely according as alumina, silex, or other minerals prevail. The pure Kaolin, a gelatinous mass, which becomes hard like horn, swells up as a sponge when wetted, but if mixed with iron, remains horny in the presence of water. Much iron in a soil increases its absorptive powers as regards atmospheric air. Iron if prevalent also colours the soil, and colour mainly influences the absorption of sunrays. A red or dark yellow, and even a black soil will generally be warmer than a lighter coloured one.



# Trade and Craft.

## THE AMATEUR PHOTOGRAPHERS.

The new 1899 catalogue issued by the Thornton-Pickard Manufacturing Company is a tiny little booklet, of which every amateur photographer would do well to obtain a copy. It contains a number of useful hints to photographers; also illustrated particulars of the Company's well-known specialities, and of many others which, being new, are less known, perhaps, but are, nevertheless, deserving of attention. The catalogue is profusely illustrated with excellent reproductions of photographs which secured prizes in a recent competition held by the Company; none of these are very clever and interesting. The booklet will be sent post free on application to the Thornton-Pickard Manufacturing Company Ltd., Altrincham.

## A NEAT POCKET-BOOK.

The Blackman Ventilating Company, of 63, Abchurch Lane, London, E.C., have issued a very neat and convenient little pocket-book, which is fitted with a pencil and a patent self-opening pencil, and contains, in addition to a number of blank pages for memoranda, a Railway Accident Insurance coupon for £500, available for twelve months. At the beginning of the book are a couple of pages of information, which will doubtless be useful to many, with regard to the Company's ventilating and drying systems. It appears that the Company have delivered 40,000 fans from their works in London into every civilised country in the Western Hemisphere. It is very justly claimed at there must now be a large army of workers who are daily being kept healthier and more efficient by means of the Blackman fans, as an hourly duty of the fans that have been sent out is now one million and a quarter tons of air. The pocket-book is, of course, primarily an advertising medium, but it is none the worse for that account. Indeed, we welcome it as an example of the possibility of introducing trade specialities in a manner that is at once effective and wholly free from the aggressive ugliness that characterises so many present day advertisements.

## A COMPACT FILING CABINET.

There is a great variety of arrangements for filing letters and other documents at present on the market, but the matter is of much general importance, especially to those who have many documents needing preservation, and but little space in which to keep them, that many readers will doubtless be glad to have their attention called to a system that presents many points of unusual excellence. The great desiderata in any filing system are the safe preservation of the documents, compactness, and facility of reference. These requirements are better met in the McKenzie Filing Cabinet than in any other system we have seen. The cabinet, which, by the way, we have lately introduced into our office, is supplied either in solid oak or walnut, or in a cheaper wood stained and polished. It is divided longitudinally into the middle, the parts being connected by strong hinges. Both the body and the wings are divided into compartments, each of which a "Silex" filing case is placed. The cabinet is weighted to ensure stability, and the wings run on castors, to prevent sagging. When closed it has the appearance of an ordinary cupboard. When one of the cases is full it can be taken away to the storeroom without being emptied, and a new case can be obtained, to replace it, at a cost of 3s. The "Silex" filing cases have many virtues of their own; they are strongly made, the sides being of wood, not cardboard; they are fixed with a special catch, which keeps them almost perfectly dust-proof, and each one contains twenty pockets arranged alphabetically. The manufacturers are Messrs. McKenzie and Co., 5, Augustus Street, London, who will make their cabinets of any size and any design that may be ordered; they will also adapt their system to fit a recess.

# INSANITARY AREAS AND HOUSING SCHEMES.

By PETER ADDIE, F.S.I.

IN dealing with this very large question, I will begin by quoting the Acts under which most of the Improvement Schemes have been worked. In 1875 was passed the Artisans and Labourers' Dwellings Improvement Act, 38 and 39 Vict., which was designed to be of great benefit to municipalities in the removal of insanitary areas, and in 1890 followed the Housing of the Working Classes Act, 53 and 54 Vict., the object of which was to make the acquirement of areas easier and less costly. The first step in the procedure is, as is well known, based upon the official representation of the medical officer, which is imperative, but in case that official will not act upon his own initiative, two or more justices of the peace or twelve ratepayers can compel him to submit a representation stating the facts as he finds them.

Immediately upon the passing of the 1875 Act, Birmingham and Swansea adopted it, and formulated schemes both of which I have had the honour of being connected with, in the first place at Swansea, and later at Birmingham. In Swansea what is known as Alexandra Road was evolved and cut through a very squalid and dilapidated area, within which the average death-rate was estimated at 40 per 1000. It included fourteen acres, three acres of which were devoted to streets. The usual stipulation was made for the housing of the disturbed population, but it was shown that local enterprise was sufficient in the undeveloped portions of the Borough to provide for the disturbed population, and the scheme was accordingly modified and the salvages were relieved from the embargo of being used only for the purpose of re-erection of artisans' dwellings. The cost of the scheme was estimated to be for the property required £79,166 and the estimated value of salvages and houses not taken down was £67,078. Deducted from this was the Corporation interest in property to be taken in the Greenhill district, viz., £1044, leaving an estimated permanent charge to the Borough of £11,044. But at that time a very lenient view of human nature was taken, with the result that this amount was very much exceeded, the actual amount borrowed for the purposes being £120,000, and although the waiving of the provisions for re-erecting dwellings helped materially the future development, financially a very heavy charge remained. But this much may be said, that an undesirable colony has been removed from the centre of the town, a marked improvement made upon the death-rate of that particular area, the rateable value has been increased, and a continual source of complaint, both as to health and crime, absolutely abolished. These results go far towards removing any feeling of distrust and complaint of extraordinary cost.

In Birmingham the area dealt with was forty-five acres, about nine acres of which were used for new streets. The representation described the insanitary condition of the district, the crowded and dilapidated state of the buildings, and a high death-rate existing in St. Mary's Ward (namely, 26.82 per 1000, as compared with 13.11 per 1000 in Edgbaston Ward) and suggested measures for remedying the evils described.

Upon obtaining possession of the necessary properties, operations were commenced without loss of time for forming the proposed new streets. Corporation Street, the principal thoroughfare, was commenced in August, 1878, and completed for traffic early in 1882. The width of the street, after much discussion, was fixed at 66ft., of which each footpath absorbs 14ft. The length of the portion now opened is 851yds. The length of the section still to be made is 633yds., making a total length of 1484yds. Several other new streets have been constructed and others materially widened. During the progress of the scheme it was found necessary to obtain modification orders varying the powers originally given, but no unnecessary

difficulties were raised by the confirming authority.

For the accommodation of persons of the labouring classes displaced by the scheme, an outlying area lying between Newtown Row and Summer Lane was acquired, and upon this site sixty-two workmen's houses and twenty retail shops have been erected by lessees of the Corporation. Upon the land in the area set apart for the erection of similar dwellings, 103 houses have been erected by the Corporation.

The total quantity of land purchased by the Corporation is 218,099 square yards, or about 45 acres. This area has, so far, been dealt with as follows:—

	Sq. yds.
Let on building lease ... ..	57,872
Sold or exchanged ... ..	17,393
Site of Victoria Courts ... ..	5600
Site of Artizan's Dwellings in Ryder Street ... ..	9766
Required for new streets and widening old ones ... ..	40,526
Still occupied by rent producing property ... ..	76,375
Cleared for letting ... ..	10,567
	<hr/> 218,099

About 1867 houses and 814 other buildings have been acquired, and of these 1002 houses and 427 other buildings have been taken down. Fifty-seven licensed premises were included in the above, and up to the present time twenty-three have been abandoned, the remainder being still in existence or transferred to new buildings erected upon the area.

The Town Clerk of Birmingham, in a paper read to the Royal Statistical Society on the financial aspect of the scheme, says:—"The dwelling house improvement fund, created under the Artisans' and Labourers' Dwellings Act and Order, has been a great cost to the Corporation, but the results have amply justified the expenditure."

The Dwelling House Improvement Account at March 31st, 1898, was as follows:

	£	s.	d.
Net expenditure on general account ... ..	1,551,137	0	6
Net expenditure on Artizan's Dwellings ... ..	18,000	0	0
Deficiency on revenue account, accumulated during the years 1880-92, now capitalised ... ..	117,011	7	10
Total net expenditure on capital account ... ..	£1,686,148	8	4

The money required for the scheme was borrowed for a term of sixty years, with the exception of the £18,000 expended on the erection of the artizan's dwellings, which was borrowed partly for forty and partly for fifty years.

An amount is provided from income each year for the repayment of these loans, sufficient to repay the whole within the periods for which they have been borrowed. The amount set aside for this purpose last year was £15,023, and the total amount so provided since the commencement of the scheme is £221,977, this sum deducted from the net capital expenditure as above, leaves the present liability in respect of the undertaking at £1,464,171.

In return for this large expenditure, the Corporation are now in possession of an income from well secured ground rents amounting to about £41,000 per annum, which will be further increased during the next four years (without any new lettings) to about £43,000 per annum, but from this figure must be deducted a rent charge of £3000 payable in respect of property acquired from the trustees of the King Edward VI. Grammar School, leaving the net income from the ground rents at £40,000 per annum.

A rental of about £18,500 per annum is also being derived from the shops, houses, and buildings still standing on the improvement area, and after deducting £1000 from this item in respect of rates, repairs, and other outgoings, a net income is available from this source of about £14,500 per annum.

(To be continued.)



## Masters and Men.

**Scottish steelworkers** have just obtained the fourth advance of 5 per cent. during the past eighteen months, making in all 20 per cent. since the trade began to revive.

**Leeds engineers' labourers** recently applied to the Employers' Federation through the Gasworkers and General Labourers' Union for an advance in wages of 2s. per week. A meeting of the Leeds Employers' Federation has just been held to reconsider the matter, when it was unanimously decided that the application could not be entertained.

**The Dundee moulders** have presented a petition to the masters asking an advance of 1s. per week on their wages. An arrangement exists between masters and men that three months' notice is given on either side when any change is desired, so that the masters have until May 12th to decide upon the matter. The minimum wage in Dundee at present is 37s. per week.

**The Dundee engineering trade** is in a somewhat unsettled state. In the autumn of last year it was anticipated that trade would be brisk till the summer at least, and the employers promised an increase of wage, which came into force recently. There now appears cause for believing that these hopes are not to be altogether realised. At present there is not so much work on hand as was anticipated, and a few of the workmen have even been paid off.

**Lancashire Engineers and their Wages.**—A conference between employers in the Lancashire engineering trade and representatives of the Amalgamated Society of Engineers and the Steam Engine Makers' Society has been held to consider an application from the Bolton engineers for an advance of wages of 2s. per week. The employers refused to grant the concession on the ground that the time was not opportune for an advance, but suggested that the matter be reconsidered in six months. Mr. Barnes, the engineers' secretary, did not agree, and appeal will be made to the Federation.

**The Plasterers' Dispute.**—The hopes that were at one time entertained of an amicable settlement of this dispute seem doomed to disappointment. A general lockout of plasterers has been determined upon, and unless the unexpected happens it will be enforced throughout the kingdom from Monday next. The events that have led to this situation may be briefly summarised. To the masters' demand for an assurance that the operative plasterers would agree to discontinue the objectionable practices complained of, Mr. Deller, the secretary of the Plasterers' Union, replied that the whole matter would be put before all the members of his association, whose votes were returnable on March 1. He added that his Council were quite willing to discuss with the Masters' Association the points at issue. To this the secretary of the Masters' Association replied that unless there existed a determination on the part of the plasterers to persist in the objectionable practices complained of, there could be no reason why the assurances required should not be given at once. His Association had, therefore, decided to lock out the plasterers from March 6th until such time as the required guarantee should be given. The London Master Builders held their annual general meeting last Thursday and pledged themselves to a strenuous support of the policy of the National Association. The result of the men's ballot will be laid before the executive committee of the Union at their meeting to-morrow, and the policy of the Union will then be definitely decided upon. The one remaining chance for peace seems to be that the provincial members of the Union, some of whom feel very sore at the prospect of having to leave their work when trade is good, and they have themselves no quarrel with their em-

ployers, may give a majority in favour of the acceptance of the masters' terms. That chance, however, is very remote. There are at present about 13,000 members in the Plasterers' Union, but the effects of the lock-out will certainly not be confined to them. The stoppage of the plasterers' work will inevitably throw many other workmen in allied trades out of work.

**Workmen's Compensation: An Interesting Decision.**—At the Bradford County Court on February 7th, Judge Bompas, Q.C., gave judgment in the case Lacey v. Calverley, the evidence in which had previously been heard by him. It was a claim for compensation under the Workmen's Compensation Act brought by Margaret Lacey, of Wibsey, on behalf of herself and daughter, against Ham Calverley, contractor, Wibsey. The applicant's husband was in the employ of the respondent, and was digging a drain for him in August last, when the sides fell in and he was suffocated.—His Honour said the case had caused him a great deal of difficulty. It was contended by the respondent that the accident was the result of wilful and serious misconduct on the part of the deceased. The respondent gave the deceased express orders to timber the sides of the drain as he went on, and on the morning of the day of the accident he actually stopped deceased from working until a second workman had leisure to help him in timbering. About 1.30 the deceased and Ezra Calverley returned to work, and commenced to timber the excavation; at 3.30 the sides fell in and crushed the deceased. At the first hearing the respondent said that this occurred whilst the deceased was engaged in carrying out his directions to timber the drain. It seemed to be generally admitted that if the timbering had been properly completed the accident would not have happened. Considering the time that elapsed between deceased commencing to timber and the occurrence of the accident, he thought one of the following causes must have occasioned the accident: (1) The deceased wilfully abstained from completing the timbering because he disliked it; or (2) he partly undid the timbering, as stated by a witness in his evidence at the last hearing; or (3) through negligence or ignorance he improperly constructed the timbering, so that it gave way. If either of the first two was the cause, it was serious and wilful misconduct on the part of the deceased; if the third, it was not. On the whole he thought there was reasonable ground for believing that it was one of the first two causes, probably the first, and not the third, which occasioned the timbering being in such a state that the earth fell in. He was, therefore, of opinion that the accident was attributable to the wilful and serious misconduct of the deceased, and he gave judgment for the respondent. He was very sorry that the parties had not come to some agreement, because he thought that in moral, if not in legal, fairness something ought to be given to the widow and orphan of the deceased. He hoped that the respondent, in so far as he was able, would do something to allay the suffering and misfortune which had undoubtedly fallen upon the widow of the deceased.

**Widening of Dundee Streets.**—For some time it has been felt that the statutory width of statute labour roads—namely, 40ft.—is too narrow where four-story tenements are erected on both sides, and in consequence Dundee Town Council recently resolved to negotiate for the widening of three statutory labour roads—namely, Dens Road, Provost Road, and Clepington Road—so that a width of at least 50ft. should exist between the building lines. The area of the ground to be thrown into these roads extends to about 168 poles, and the sum to be expended by the Council in executing the work of widening will amount to £2200. The work is to be proceeded with gradually. Dens Road and Provost Road, opposite the lands of Easter Clepington, are to be widened at once, and the work has been begun by Mr. Girrity. It is expected that within three months these two roads will be widened and a decided improvement effected.

## Engineering Notes

**The Vatican** has been installed with the electric light, requiring 6000 sixteen-candle lamps to illuminate the building.

**Recent borings round Spofforth** prove that there is an enormous quantity of water of exceptional purity in the neighbourhood to a depth of 130ft.

**An Electric Light Scheme for Beckenham** has been adopted by the Urban District Council. The estimated outlay for supplying the district is £37,000.

**Newcastle Tramways.**—Newcastle-on-Tyne City Council have approved of the overhead trolley system of electricity for the new tramways, but have undertaken that it shall not be applied to the central streets, pending the opinion of an expert as to the suitability of the streets for some other electrical system.

**A cart bridge over the Derwent** between Malton and Kirkham Abbey is proposed to be erected near Huttons Ambo Station. Mr. Rudgard, in the office of the Railway Company's engineer, has prepared plans. His estimate for an iron girder bridge to carry ordinary traffic is £1200, but to carry traction engines there would be an additional cost for bridge and approaches of £700. A committee is to be formed to solicit grants from the County Councils, landowners, and others interested.

**Bollington Water Supply.**—The formal ceremony of turning on the supply of water to the township of Bollington was performed last week. The spring is situated at Rainow—a hilly district lying to the east of Bollington—the boring operations, which were conducted there on the recommendation of Professor Boyd Dawkins, being eminently successful. The water is collected in a reservoir, and the pressure obtained is sufficient to supply the whole of the district without the expense of pumping.

**The Belfast Mechanical and Engineering Association** held their seventh annual reunion last Saturday week, in Hick's Hotel Metropole, College Square North. The chair was occupied by the honorary president, Mr. John Horner, and the attendance was large. The honorary secretary (Mr. H. J. Fell) submitted the annual report, which was unanimously adopted. It stated that the past year had been one of continued progress to the association. They had elected one honorary and nine ordinary members.

**Contractors' Extras.**—Mr. Justice Ridley delivered judgment last Saturday week in the Queen's Bench in the case of Nuttall v. Barnstable and Lynton Railway Company. Mr. J. Nuttall, contractor, entered into an agreement to construct a railway from Barnstable to Lynton for about £40,000. After the railway had been constructed the contractor claimed a large sum in respect of extras, and this claim was referred to the arbitration of Sir James Szlumper, the consulting engineer, who awarded the contractor £22,634 11s. for blasting rock and £3569 for quantities in excess of those contained in the bill of quantities. It appeared that in constructing the railway the contractor found that a large quantity of rock had to be removed for blasting, and he accordingly removed it without obtaining the order of the engineer in writing or getting a price fixed for the work in accordance with the terms of the contract. For the contractor it was contended that the decision of the arbitrator was final and conclusive, and that the company were not entitled to have a special case stated. It was further argued that if the company were entitled to have a special case the contractor was entitled under the contract to recover the amounts found by the arbitrator. The Court, however, did not consider that these contentions were sound, and, therefore, judgment was entered for the company, with costs.



# Builders' Notes.

**Prices of Copper Goods.**—The extraordinary and combined rise in the price of copper has led to a general increase in the price of copper goods. One well-known firm has just added 5 per cent. to the net price of their copper goods.

**Ventilation for Public Buildings.**—In the ventilation of the new Hutchisontown Parish Church and Mission Halls now in course of erection (Mr. Alex. Adam, architect, Glasgow), "Cousland's Improved Climax" Patent Invisible Roof Ventilators and Air Panels are being used, supplied by the Climax Ventilating and Heating Company Limited, Glasgow."

**The Cement Famine.**—In our issue of February 15th we referred to the scarcity of cement, and the competition of German manufacturers. "Cement Maker," writing upon this subject to the "Morning Post," says that the English cement makers, relying upon their prior occupation of foreign markets, neglected to improve their cement by the adoption of those scientific methods which the Germans have introduced. These methods have, however, been adopted here in recent years, and there are several works on the Thames and Medway which now manufacture cement equal to any produced on the Continent, and a general improvement is being shown. The inferiority of English cement in the past has been due quite as much to the civil engineers of this country as to the manufacturers. It was the part of these engineers to investigate the various qualities of the materials they employ, and to lay down clearly the tests applicable to them. There is no consensus, no standard of quality to regulate the trade. The case is totally different in Germany, where a uniform standard exists, a standard based on scientific and experimental data. Cement makers there know what they have to do, and the engineers do not expect impossibilities from them, or the fulfilment of incompatible conditions. The ancient practice still prevalent in England is to test the strength of cement by the breaking strain applied to neat cement, which is never used so, but always mixed with a large proportion of sand or similar substances. The Germans employ only sand tests. Again, an old English test is that of weight per bushel, designed to exclude light-burnt cement. But very fine grinding is an essential in good cement. This fine grinding increases the bulk of the cement, and the test of heavy weight per bushel is in direct antagonism with it; yet the weight per bushel test still appears nearly all specifications in this country. It is superseded in Germany by the test of specific gravity, which is quite independent of the fineness of the grinding.

# Surveying and Sanitary Notes.

**Fulham Palace Road.**—The Improvements Committee of the London County Council have recommended that, subject to the Vestry of Hammersmith enfranchising the copyhold of the land to be added to the public way, and subject to the road being widened to not less than 45ft., the council give its consent and contribute one-half of the net cost of the setting back of the western side of Fulham Palace Road between Carnforth Lodge and the Duke of Cornwall public-house, such contribution not to exceed the sum of £5084.

**The proposed widening of Lower Thames Street,** between Fish Street Hill and Botolph Lane, E.C., still "hangs fire." If ever there was a place in the City which needed widening it is the locality in question. The London County Council was asked six months ago to say whether it would contribute towards the cost of the improvement, but as yet no answer has been given. Several houses are to let, and in some others the leases are about to run out, so that the present is a good opportunity.

**Paving of Goswell Road, E.C.**—The ratepayers in the portion of Goswell Road abutting on the City boundary, have asked the St. Luke's vestry to relay the road with wood or other noiseless material so as to enable them to carry on their respective businesses with comparative comfort. At present, it was stated, they often had to keep their windows closed in order to shut out the deafening sounds on the granite cubes. The Vestry have decided that as soon as the Old Street improvement is finished the whole question of the repaving of Goswell Road will be considered.

**Dublin Main Drainage Scheme.**—The works in connection with this great scheme, which are being carried out by Messrs. H. and J. Martin, of Dublin and Belfast, are proceeding steadily. The contractors have completed the Kilmainham branch, and they are just about finishing the Island Bridge branch, the works in connection with which were heavy, and they have also completed the sewers in the Poddle district. They are now engaged on sewerage work on the southern quays, at Crampton, Usher's, and Victoria quay's, intercepting all sewers on that side as far as Burgh quay. They have finished all the work on the northern side of the river, which includes the whole length of the northern quays, as well as the sewer to Annesley-place, by way of Abbey-street, Beresford-place, Store-street, Amiens-

street, and the North Strand. At present about 200 hands are employed on the main drainage works, but as the weather improves many more will be taken on. It is expected that the whole of the work will be finished towards the end of the year.

**The Whitehall Improvements.**—One of the most recent compensation claims against her Majesty's Office of Works in respect of the Whitehall improvement scheme was that of Messrs. Meynell and Pemberton, solicitors, who claimed £14,000 for the demolition of their office premises, No. 20, Whitehall Place. The claimant firm, which had existed at the address mentioned ever since 1835, had secured a Crown lease for a term of 99 years from July, 1820, at a rental of £98 6s. 9d. per annum. At the end of 1896, the Commissioners of Works served the notice to treat. The matter was referred to Mr. Robert Vigers, president of the Surveyors' Institution, who acted as sole arbitrator, and in the course of the inquiry it was submitted that the premises were worth £950 or £1000 a year to the claimants as occupying tenants. Evidence in support of the claim was given by Mr. G. H. Brougham Glasier, F.S.I. (Messrs. Glasier and Sons), Mr. Edward Tewson, F.S.I. (Messrs. Debenham, Tewson, Farmer, and Bridgewater), and Mr. H. C. Trollope, F.S.I. (Messrs. Trollope), whose valuations ranged from £6000 to £12,000. The arbitrator has just awarded the claimants £3478.

**Manchester Sewage.**—The following report of Mr. Baldwin Latham, M.Inst.C.E., has been received and approved by the Rivers Committee of the Manchester Corporation: "At your request I have carefully considered the question of the cost of the proposed bacteria beds for Manchester, consisting of sixty acres of such beds, with all necessary adjuncts for dealing with the sewage from 600,000 persons, together with the storm water. I may say that I am not able, in the absence of the necessary surveys and detail drawings, to give precise figures, but you may conclude that the cost of all these works will not exceed the sum of £300,000. I must remind you that the result of this expenditure will be to relieve the Corporation of Manchester from the large expenditure now incurred for chemically treating the sewage, and save other expenses in connection with the disposal of the sludge, which now entails considerable annual outlay. That the proposed works will be successful and relieve the Corporation of Manchester from all future embarrassment so far as the purification of the sewage is concerned there cannot be any doubt." This report is to be submitted to the Council, together with a resolution empowering the Rivers Committee to ask the Local Government Board to hold their adjourned inquiry at the earliest possible moment.

## COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—</b>			
March 3	Darwen, Lancs.—Fireclay Retorts, Bricks, &c. ...	Corporation ...	A. H. Smith, Gas Engineer, Darwen.
3	Sowerby Bridge, Yorks.—Erection of Schools ...	School Board ...	C. F. L. Horsfall and Son, Lord-street-chambers, Halifax.
3	Leeds—Alterations, &c. ...	Trustees ...	S. E. Smith and J. Tweedle, 12, South-parade, Leeds.
3	Norton, near Cannock, Staffs.—School Additions ...	Trustees ...	Rectory, Norton Caves, near Cannock.
4	Buckie, Scotland—Erection of Masonry Bridge ...	Guardians ...	J. Barron, 1, Bon Accord-street, Aberdeen.
4	Omagh, Ireland—Cemetery Works ...	Guardians ...	J. L. Donnelly, 2, Bridge-street, Omagh.
4	Knarborough—School Buildings ...	King James's Gram. School Governors ...	W. Gill, Secretary to Governors, Knarborough.
4	Edinburgh—Chimney Stack ...	Gas Commissioners ...	W. R. Herring, Gasworks, Edinburgh.
4	Kings' Lynn—Classrooms, Offices, &c. ...	All Saints' School ...	L. F. Ealgeton, Bank-chambers, King's Lynn.
4	Littlehampton—Alterations, &c., to Laundry ...	Model Steam Laundry Co., Ltd. ...	H. Howard, Architect, Town Offices, Littlehampton.
6	Balieborough, Ireland—Altering Wards, &c. ...	Infirmary Guardians ...	H. Clarke, Clerk, Poor Law Office, Balieborough.
6	Blaydon-on-Tyne—8 Houses ...	District Industrial & Provident Soc., Ltd. ...	G. T. Wilson, 121, Durham-road, Blackhill.
6	Foulridge, Lancs.—Rebuilding Inn ...	John Kenyon, Ltd. ...	E. Neil, 9, Grimshaw-street, Burnley.
6	Ramsgate—Fireclay Retorts, Fire Bricks, Tiles, &c. ...	Gas and Water Committee ...	W. A. Va'on, Engineer to Committee, Ramsgate.
6	Rocheester, co Cork—Pair of Villas ...	County Council ...	W. H. Hill and Son, 28, South Mall, Cork.
6	Clayton-le-Dale, Lancs.—Bridge Works ...	Gas Company Limited ...	County Bridgemaster's Office, County Offices, Preston.
6	Shoeburyness—Gas-holders, &c. ...	Very Rev. Canon Shanahan ...	H. J. Robus, 21, Bucklersbury, London, E.C.
6	Thornaby-on-Tees—Infants' School ...	Hospital Board ...	E. Goldie, 31, Upper Phillimore-place, Kensington, W.
6	Tiverton—Hospital Buildings ...	H.M. Commissioners of Works ...	J. Siddals, Tiverton.
6	Putney, S.W.—Sorting Office ...	Glyncorrwg Board School ...	H.M. Office of Works, Storey's-gate, Westminster, S.W.
7	Aberwynn, Wales—School Alterations, &c. ...	J. Sykes, & Co. ...	O. P. Lambert, Architect, Bridgend.
7	Sowerby Bridge, Yorks.—Warehouse ...	Commissioners of Irish Lights ...	Jackson and Fox, 7, Rawson-street, Sowerby Bridge.
9	Kingstown, Valencia Island, co Kerry—Shore Dwellings, Lighthouse Keepers ...	Gt. Northern Railway Company (Ireland)	Irish Lights Office, Dublin.
9	London, E.C.—Shop fronts ...		J. C. Eley and Co., 1 and 2 Milk-street, E.C.
13	Dublin—Electric Power House ...		Engineer-in-Chief, Amiens-street, Terminus, Dublin.



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—Continued.</b>			
March 13	Hereford—Electricity Buildings ... ..	Town Council...	J. Parker, City Engineer, Hereford.
" 13	Maryborough, Ireland—Prison Buildings ... ..	General Prison Board ... ..	M. S. Green, Board's Engineering Inspector, Dublin Castle.
" 13	Omagh, Ireland—Additions to Station, &c. ... ..	Gt. Northern Railway Company (Ireland) ... ..	Engineer-in-Chief, Amiens-street Terminus, Dublin.
" 13	Rawtenstall—Hotel Alterations ... ..	John Kenyon, Ltd. ... ..	R. Neill, 9, Grimshaw-street, Burnley.
" 13	Cowes—Coal Stores ... ..	Urban District Council ... ..	Engineer, Council Offices, Cowes.
" 14	London—Men's Conveniences ... ..	County Council ... ..	Architect's Department, 13, Spring Gardens, S.W.
" 14	Bala, Merioneth—School ... ..	...	H. Teather, 83, Wyle-cop, Shrewsbury.
" 15	Glasgow—Exhibition Buildings ... ..	Glasgow International Exhibition ... ..	F. A. Healey, 141, Buchanan-street, Glasgow.
" 28	Kingston-on-Thames—Infirmary, &c., at Workhouse ... ..	Union Guardians ... ..	W. H. Hop, Union Offices, Portsmouth-road, Kingston.
April 1	Ipswich—Asylum Alterations, &c. ... ..	Asylums Committee ... ..	E. Buckham, Borough Surveyor, Town Hall, Ipswich.
" 4	Rauceby, near Sleaford, Lincs.—Superstructure of Lunatic Asylum ... ..	Kesteven County Asylum ... ..	G. T. Hine, 35, Parliament-street, S.W.
<b>ENGINEERING—</b>			
March 3	Greenock—Electric Lighting Plant ... ..	Board of Police ... ..	S. E. Felden, Municipal-buildings, Greerock.
" 3	Darwen, Lancs.—Parlours ... ..	Corporation ... ..	A. H. Smith, Gas Engineer, Darwen.
" 3	East Molesey—Footbridge over River Ember ... ..	Urban District Council ... ..	J. Stevenson, Surveyor, Walton-road, East Molesey.
" 3	London, E.C.—Bridge Works ... ..	Bengal-Nagpur Railway Co. Ltd. ... ..	Offices, 132, Gresham House, Old Broad-street, E.C.
" 3	Uxbridge—Drainage Works, &c. ... ..	Rural District Council ... ..	J. Anstie, 10, Marchwood-crescent, Ealing.
" 4	Ashford—Excavating, &c. ... ..	Urban District Council ... ..	Stevenson and Bursall, 38, Parliament-street, Westminster.
" 4	Bristol—Pumping Engines, &c. ... ..	Waterworks Co. ... ..	T. and C. Hawkey, 30, Great George-st., Westminster, S.W.
" 4	Kirkcaldy—Tram Line ... ..	District Council ... ..	A. Beveridge, Clerk, 220, High-street, Kirkcaldy.
" 4	Sheffield—Bridges ... ..	Improvement Committee ... ..	C. F. Wike, City Surveyor, Town Hall, Sheffield.
" 6	Edinburgh—Condensing Plant, &c. ... ..	Magistrates and Council ... ..	Resident Engineer, 5, Dewar-place, Edinburgh.
" 6	Edinburgh—Electric Lighting ... ..	Magistrates and Council ... ..	Resident Electrical Engineer, 5, Dewar-place, Edinburgh.
" 9	London, E.C.—Two Lanterns to Lighthouses ... ..	Corporation of Trinity House, E.C. ... ..	C. A. Kent, Secretary, Trinity House, E.C.
" 9	Stockport—Dynamo ... ..	Gas and Electricity Committee ... ..	S. Meunier, Portwood, Stockport.
" 9	London, N.—Hot-Water Apparatus, &c. ... ..	Islington Guardians ... ..	W. Smith, 65, Chancery-lane, W.C.
" 13	Letterkenny, &c., Ireland—Railways ... ..	Corporation ... ..	T. M. Batchen, 9, Ship Quay-street, Londonderry.
" 14	Canterbury—Electric Lighting Plant ... ..	...	R. Hammond, 84, Victoria-street, Westminster, S.W.
" 14	King's Lynn—Widening Bridge ... ..	Urban District Council ... ..	H. J. Weaver, Borough Engineer, Guildhall, King's Lynn.
" 15	Barry, Cardiff—Sinking Well, &c. ... ..	Gas Company Ltd. ... ..	E. W. Waite, Gas and Water Offices, Barry.
" 15	Roscommon—Retort Bench ... ..	Gas Commissioners ... ..	Manager, Gasworks, Roscommon.
" 15	Dundee—Electrical Plant ... ..	Gas Commissioners ... ..	W. H. Tittensor, Dudhope-crescent-road, Dundee.
" 25	Edinburgh—Chemical Plant ... ..	Gas Commissioners ... ..	W. R. Herring, Engineer, Gasworks, Edinburgh.
May 17	London, E.—Construction of Wells, &c. ... ..	Poplar Union ... ..	E. J. W. Stevens, 34, Victoria-street, S.W.
June 30	Shanghai—Tramway Concession ... ..	Municipal Council ... ..	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
<b>IRON AND STEEL—</b>			
March 3	Birkenhead—Stores and Materials ... ..	Corporation ... ..	Gas and Water Engineers, Town Hall, Birkenhead.
" 3	Brighouse—Various Stores ... ..	Gas Committee ... ..	Gas Engineer, Mill-lane Works, Brighouse.
" 3	Middlesbrough—Stores ... ..	Stores Committee ... ..	G. B. Wintersgill, Corporation Gasworks, Middlesbrough.
" 4	Edinburgh—Rails, Points, &c. ... ..	Gas Commissioners ... ..	W. R. Herring, Engineer, Gasworks, Edinburgh.
" 6	Glasgow—Tramway Rails, &c. ... ..	Corporation ... ..	J. Young, 85, Renfield-street, Glasgow.
" 7	Gorton—Railway Carriages ... ..	Cheshire Lines Committee ... ..	T. Parker, jun., Carriage Superintendent, Great Central Railway Works, Gorton.
" 8	Southampton—Smith and Founder's Work ... ..	Harbour Board ... ..	A. H. Skelton, Clerk, Town Quay, Southampton.
" 14	London—Railing, Gates, &c. ... ..	County Council ... ..	Architect's Department, 13, Spring-gardens, S.W.
" 15	London—Fencing ... ..	Metropolitan Asylums Board ... ..	Treadwell and Martin, 2, Waterloo-place, S.W.
<b>ROADS AND CARTAGE—</b>			
March 3	Wisbech—Cartage ... ..	Town Council ... ..	H. F. Simpson, Surveyor, The Club-chambers, Wisbech.
" 3	Gravesend—Guernsey Granite ... ..	...	Borough Surveyor, Gravesend.
" 4	Hampton Wick—Horsing, Water Vans, &c. ... ..	Urban District Council ... ..	J. N. Horsfield, Surveyor, Council Offices, Hampton Wick.
" 4	Bradford—Carting Coal ... ..	Provident Industrial Society Limited ... ..	Central Office of Company, Bradford.
" 4	Oswestry—Materials ... ..	Rural District Council ... ..	District Surveyor, Oswestry.
" 4	Thame—Hartshill Granite ... ..	Rural District Council ... ..	W. Parker, 2, High-street, Thame, Oxon.
" 4	Wakefield—Street Works ... ..	...	City Surveyor, Town Hall, Wakefield.
" 4	London, S.E.—Ballast and Sand, &c. ... ..	Bermondsey Vestry ... ..	F. Ryall, Vestry Clerk, Bermondsey Town Hall, Spa-road.
" 4	Wolverhampton—Materials ... ..	Corporation ... ..	J. W. Bradley, Borough Engineer, Wolverhampton.
" 4	Bridgewater—Haulage, &c. ... ..	Rural District Council ... ..	T. M. Reed, Clerk, Workhouse, Bridgewater.
" 6	London, N.W.—Horsing, &c., Dust Vans ... ..	St. Pancras Vestry ... ..	C. H. F. Barrett, Vestry Hall, Pancras-road, N.W.
" 6	Abingdon—Supply of Hartshill Stone ... ..	Rural District Council ... ..	B. and E. M. Challenor, 59, Stert-street, Abingdon.
" 6	Belford—Road Works, &c. ... ..	Rural District Council ... ..	A. J. Ware, District Surveyor, Belford.
" 6	London, S.E.—Granite, &c. ... ..	Rotherhithe Vestry ... ..	J. J. Stokes, Town Hall, Lower-road, Rotherhithe, S.E.
" 6	Colchester—Materials ... ..	Urban District Council ... ..	H. Goodyear, Borough Engineer, Stanwell-st. Colchester.
" 6	Castleton, Lancs.—Materials ... ..	Urban District Council ... ..	R. J. Webster, Council's Surveyor, Castleton.
" 6	Headington, Oxon.—Materials ... ..	Rural District Council ... ..	L. Turner, District Surveyor, Hartfield Cottage, Hew Headington, Oxon.
" 6	Jarrow—Street Works ... ..	Urban Sanitary Authority ... ..	J. Petree, Borough Surveyor, Jarrow.
" 6	Warrington—Granite Curbs ... ..	Paving and Sewerage Committee ... ..	T. Longdin, Borough Surveyor, Town Hall, Warrington.
" 6	Egremont, Cheshire—Materials ... ..	Wallasey Urban District Council ... ..	District Surveyor, Public Offices, Egremont.
" 7	Chertsey—Materials ... ..	Urban District Council ... ..	J. F. Stow, Surveyor, Windsor-street, Chertsey.
" 7	Llanely—Materials ... ..	Rural District Council ... ..	D. C. Edwards, Clerk, Union Offices, Llanely.
" 7	London N.—Articles and Works ... ..	Tottenham Urban District Council ... ..	Offices, 712, High-road, Tottenham, N.
" 7	Teddington—Making-up Roads ... ..	Urban District Council ... ..	M. Hainsworth, Surveyor, Elmfield House, Teddington.
" 7	Maidstone—Road Works ... ..	Kent County Council ... ..	F. W. Buck, 86, Week-street, Maidstone.
" 8	London, S.W.—Materials ... ..	Fulham Vestry ... ..	Town Hall, Walham Green, S.W.
" 8	Kingston-upon-Thames—Team Labour ... ..	Corporation ... ..	Borough Surveyor, Cattern House, Kingston-on-Thames.
" 8	London, W.—Road-making ... ..	...	E. Monson, Acton Vale, W.
" 9	London, N.—Works and Materials ... ..	Hornsey Urban District Council ... ..	E. J. Lovegrove, Offices, Southwood-lane, Highgate, N.
" 9	York—Materials ... ..	Corporation ... ..	A. Creer, City Engineer, Guildhall, York.
" 10	Towcester, Northants—Team Labour ... ..	Rural District Council ... ..	W. Sheppard, Surveyor, Towcester.
" 11	Dartford—Ragstone ... ..	Commissioners of Sewers ... ..	Surveyor, Sessions House, Dartford.
" 13	London, S.W.—Materials ... ..	Barnes Urban District Council ... ..	G. B. Tomes, Surveyor, Offices, High-st., Mortlake, S.W.
" 13	Newark—Leading Materials ... ..	Urban Sanitary Authority ... ..	Borough Surveyor, Corporation Offices, Newark.
" 13	Littleborough, Lancs.—Materials ... ..	Urban District Council ... ..	G. A. Wild, Surveyor, Hare Hill-road, Littleborough.
" 14	Bath—Road Materials ... ..	Urban Sanitary Authority ... ..	C. R. Fortune, City Surveyor, Guildhall, Bath.
" 15	St. Helens, Lancs.—Materials ... ..	Corporation ... ..	G. J. C. Broom, Borough Engineer, Town Hall, St. Helens.
April 4	London, S.W.—Cartage and Materials ... ..	Middlesex County Council ... ..	H. T. Wakelam, County Surveyor, Guildhall, Westminster.
<b>SANITARY—</b>			
March 3	Uxbridge—Drainage Works ... ..	Rural District Council ... ..	J. Anstie, 10, Marchwood-crescent, Ealing.
" 6	Castleton, Lancs.—Removal of Light Soil ... ..	Rural District Council ... ..	R. J. Webster, Surveyor, Castleton, near Manchester.
" 9	Garstang, Lancs.—Sewers, &c. ... ..	Rural District Council ... ..	F. Dixon, Engineer, Council Offices, Garstang.
May 12	Johannesburg—Sewerage Scheme ... ..	...	Town Engineer, Johannesburg

## COMPETITIONS.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
March 4	Beverley—School Buildings ... ..	£25, £10 ... ..	Beverley Grammar School.
" 23	London, E.C.—Additions to Town Hall ... ..	£50, £25 ... ..	Shoreditch Vestry.
" 30	Doncaster—Design for Master's House ... ..	£50, £25 ... ..	Doncaster Grammar School Trustees.
" 31	Forfar—Isolation Hospital ... ..	£31 10s., £21, £15 15s. ... ..	Dundee and Forfar District Committees.
" 31	Swindon—Additional Foyer Pavilion ... ..	...	W. H. Kinner, Clerk to Hospital Board, High-st., Swindon.
April 14	Bradford—Cartwright Memorial Hall and Art Gallery ... ..	£150, £100, £50 ... ..	City Surveyor, Bradford.
" 30	Ramsgate—Concert Hall, Reading Room, Lavatories, &c. ... ..	£50, £20, £10 ... ..	T. G. Taylor, Surveyor, Broad-street, Ramsgate.
June 1	Leeds—Market Hall and Shops ... ..	£150, £100, £50 ... ..	Corporation.
No date	Hexham—Vagrant Wards at Workhouse ... ..	£20 ... ..	J. H. Nicholson, Clerk, Midland Bank-chambers, Hexham.
"	London, S.W.—Design for Board Room, Offices, &c. ... ..	£100, £60, £40 ... ..	Wandsworth and Clapham Union Guardians.



## Property and Land Sales.

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Particulars and plan, in due course, of **Messrs. KINGSFORD, DORMAN, and Co.**, Solicitors, 23, Essex-street, Strand; of **Messrs. WOLFORD and WILSHIN**, Auctioneers, Anerley, S.E.; and of **Messrs. FIELD and SONS**, as above.

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Notes of Cases & Decisions in the Superior Courts.

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MARCH 8, 1899.

No. CCXIII.

## An Architectural Causerie.

### The Opening of the Great Central Railway.

THIS week witnesses the crowning moments of a scheme which, once considered hope-

less, has now won to its fulfilment, after many years of fighting and working. The "Great Central" is no new railway, save in name and in the extension to London, now happily completed. As the "Manchester, Sheffield, and Lincolnshire Railway," it had its beginnings some sixty years ago, and for many

then apparent hopelessness of fighting for the Parliamentary sanction of the scheme against the virulent opposition of the railways interested in keeping this threatening competitor away. The then chairman of the M. S. & L. was Sir Edward Watkin, probably the greatest genius that railway management has ever produced. There is room for Napoleons in the railway world, and of such a build was this man. By sheer force of will and industry, he had won to a commanding position, and held at one and the same time the Chairmanships of four different companies:—the M. S. and L., Metropolitan, the South Eastern, and the East London Railways. There were jealous eyes and sharp wits watching his schemes when, step by step, he led the Metropolitan Railway past Harrow and into the provincial wilds of Rickmansworth and Aylesbury, and so on to Quainton Road; but few or none suspected for a long while that this was part of a great programme by which the M. S. and L. was slowly coming down south, and the Metropolitan marching north to meet it; subsequently to join hands. This was finally acknowledged when the time was ripe for the declaration. It was in 1891 that this happened, when the M. S. and L. had

fused to carry such very un-aristocratic freight; and when circumstances were too strong for them, the officials of that line, obliged at last to convey coals, carefully covered the trucks with tarpaulins, so that their shame should not be evident to the world at large. Circumstances have now-a-days proved so ironical that there are railway companies which would be only too glad of an opportunity for exchanging their un-lucrative passenger traffic for the now coveted carriage of the once despised coals.

C. G. H.

### The J. R. Roberts' Wing, Purley Schools.

OUR illustration shows the new wing which

has lately been added to the Purley Schools. The building has eight class rooms, four on either side of the main hall, which is 73ft. long, 31ft. wide, 25ft. 6in. high up to the collar beam, and will accommodate 400 people. Each class room is 22ft. by 16ft., and 13ft. 6in. high (4752 cubic feet), and is arranged to seat thirty-two boys, thus allowing about 150 cubic feet to each pupil. The new wing is connected to the old building by a range of cloisters 150ft. long, with a



THE J. R. ROBERTS' WING, PURLEY SCHOOLS. J. KINGWELL COLE AND KENNETH WOOD, ARCHITECTS.

years has been a powerful and extensive undertaking in the "waist of England," as that comparatively narrow stretch of our island between Liverpool on the west coast and Grimsby on the east, has been termed. As an east and west railway, with no outlet to London, it had long done a heavy trade in the coals, minerals, and multifarious manufactures of the busy Midlands; a carrying trade which in latter years totalled a sum of something over three and a half millions per annum. These goods were collected by the M. S. & L. at various points along their busy cross-country system and handed over to the three great trunk lines—the Great Northern, the Midland, and the London and North Western—at Doncaster, Manchester, Retford, and other junctions, whence they were carried to London; those great companies thus reaping nearly all the profits. As the then chairman of the M. S. & L. remarked, that railway was "playing the part of jackal" to these gigantic corporations, and two-thirds of that gross annual sum of three and a-half millions thus went into the coffers of these "foreign" companies. In these facts we find the spur that goaded on the M. S. & L. to do great things, and to attempt the invasion of London, despite the

reached Annesley, some ten miles north of Nottingham, and the Metropolitan had powers to Quainton Road, thus leaving a gap of ninety-eight miles to be bridged over by the contemplated extension to London. The proposals for this extension to Quainton Road, and for running powers thence over Metropolitan metals to West Hampstead, and thence by a new line through St. John's Wood to a London terminus in the Marylebone Road were brought before Parliament in the Session of 1891, and were defeated. A new Bill was prepared for 1892, and was fought through both Houses, finally obtaining the Royal Assent in 1894. Since the autumn of that year the line has been under construction, and has cost in all very nearly seven millions sterling.

All this expenditure and this now triumphant energy have been put forward almost solely with the object of securing a share of the great coal traffic to London. This policy would make the early railway managers gasp, could they revisit the scenes of their former activity; for there was a time (incredible though it may now appear) when it was considered to be beneath the dignity of a railway company to carry coals. Indeed in its early years, when it was the "London and Birmingham," the London and North-Western Railway actually re-

large central archway for vehicles. From the end of these cloisters the grand staircase winds up to the central hall and class rooms, at the foot of which a door leads into the masters' room. The playground underneath the building is about 76ft. wide by 70ft. long, with arched ceiling, and provided with drinking fountain. The heating and ventilating have been carried out on the most modern and approved principles, by Messrs. Rosser and Russel, and the furnishing of the class rooms, science room, &c., has been carefully executed by the Educational Supply Company. The architectural style of the building is late scholastic Gothic, and the materials used are Patent Victoria stone and red brick, the carving to the stonework being executed by the well-known sculptor, Mabey. Internally the woodwork in the class rooms is pitch pine; the hall has a handsome, open-timbered roof of Sequoia wood; all the floors are fireproof, and are finished with wood blocks, by Messrs. Bewick, Ward and Co. The painted-glass was executed by Chas. Evans, the builder being Mr. F. Potter, of Horsham. The large window in the hall contains eight medallions with the arms of England and her various colonies. The architects are Messrs. J. Kingwell Cole, and Kenneth Wood, A.R.I.B.A., 17, Hart Street, Bloomsbury, W.C.



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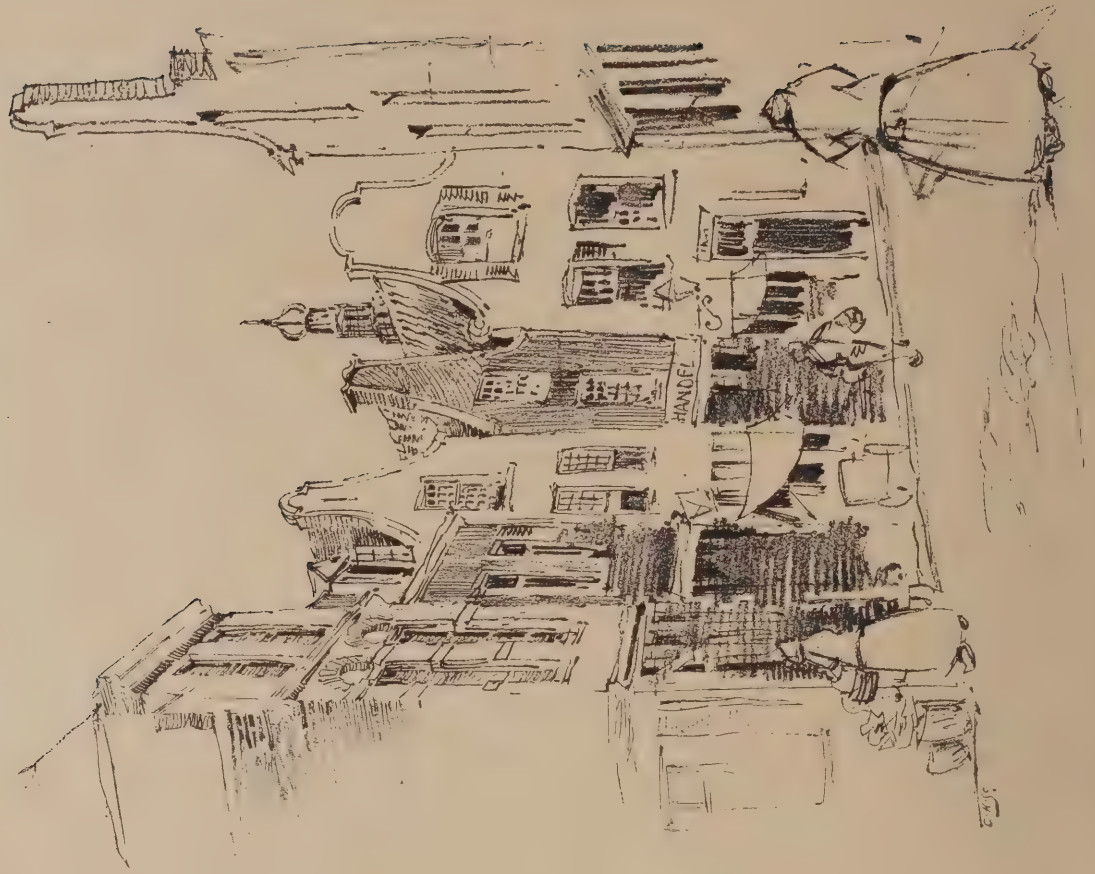
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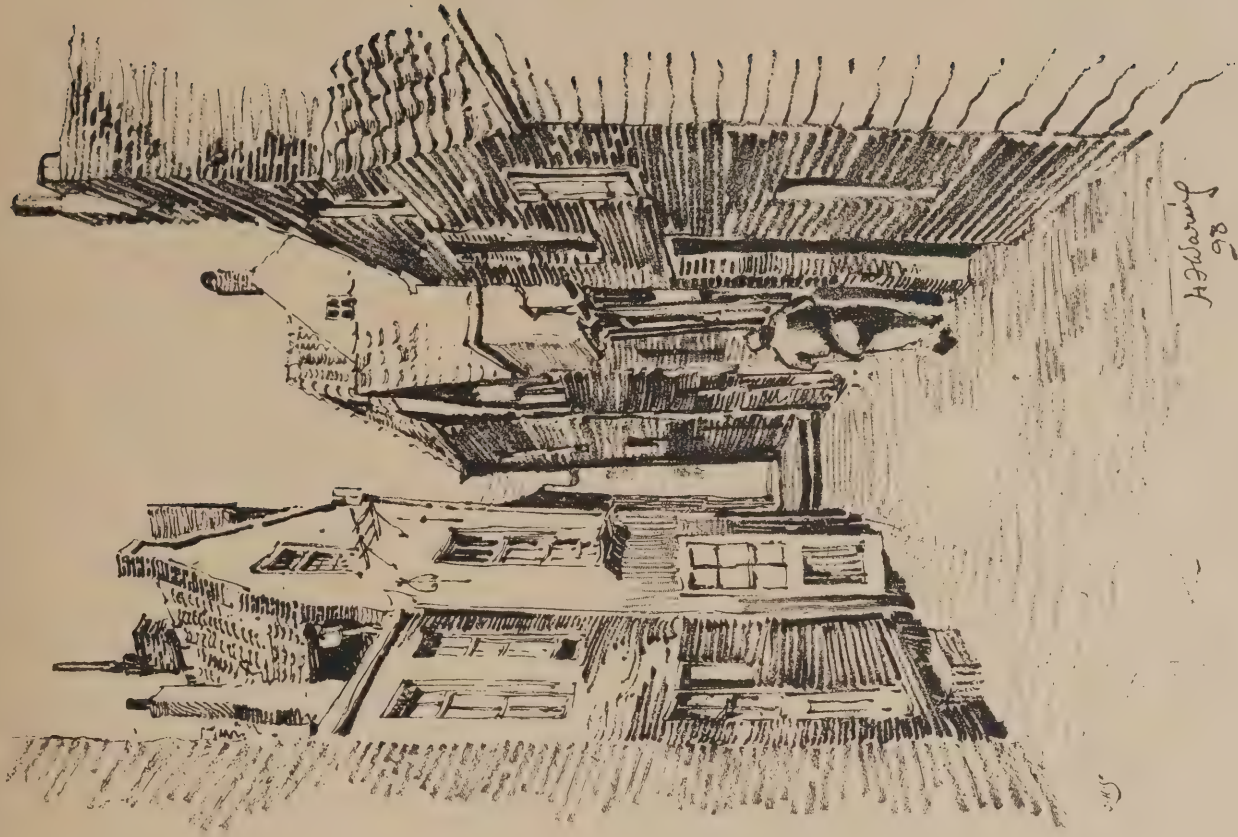
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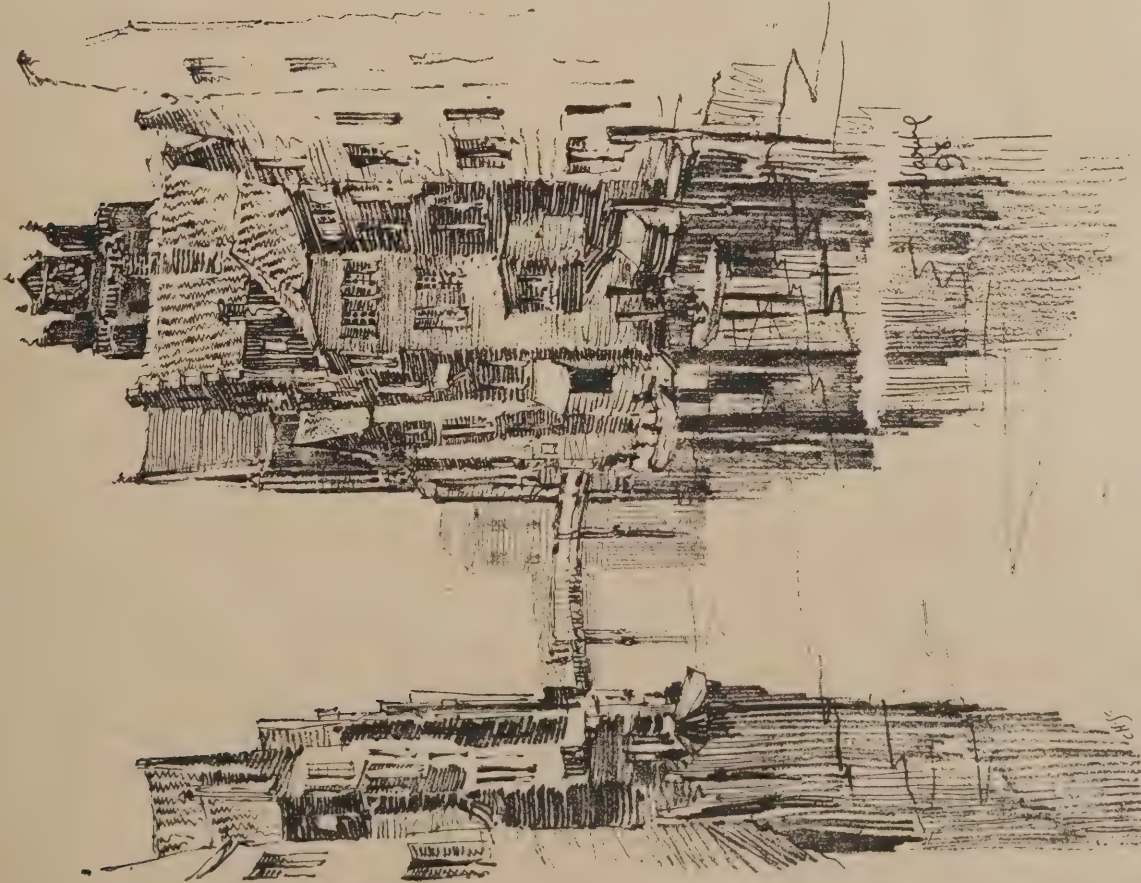


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## THROUGH HOLLAND.

BY H. F. WARING,

*Architectural Association Travelling  
Student, 1898.**(Continued from page 36.)*

AMSTERDAM, the next town visited, is certainly the embodiment of one's preconceived idea of a typical Dutch city, and after the quiet of Haarlem, it was quite strange to see the bustle and movement continually going on, and to hear the continual clanging of the tram bells, the strange and weird cries of the street vendors, and the old quarter chimes from many a clock tower. The town originated at the beginning of the thirteenth century, when Gysbrecht II., Lord of Amstel, built a castle here (1204), and constructed the dam which gave rise to its name. The older part of the city is in the form of a semicircle, the diameter being formed by the River Y. Canals intersect the city in every direction, and divide it into ninety islands, which are connected by means of nearly 300 bridges. Most of the houses are constructed on foundations of piles, a fact which gave rise to the jest of Erasmus of Rotterdam—that he knew a city whose inhabitants dwelt on the top of trees like rooks.

Among the most interesting buildings may be mentioned the Oude Kerke, erected in 1300, and the Nieuwe Kerke, a late Gothic cruciform structure with ambulatory and radiating chapels erected in 1408-70. The old Weigh House, which was built as a town gate in 1488-1585, and was long used by the different guilds, is worth a visit. The Royal Palace—a severe, though very effective building of grey stone—was begun by Joc. van Kamper in 1648 as a town hall. It was furnished in 1655, at a cost of eight million florins. It rests on a foundation of over 13,000 piles, the length being 264ft. and width 207ft., whilst the height of the tower is 187ft. It was presented by the city to King Louis Napoleon as a residence in 1808. The gables are enriched with carving by Artus Quellin the Elder, celebrating allegorically the glories of the great commercial city and “queen of the seas.” While in Amsterdam, a visit should certainly be made to the Ryks museum, as besides many interesting old mantelpieces and doorheads, some excellent pictures may be seen, and the Ecclesiastical department illustrating the development of Ecclesiastical Art in the Netherlands from the Carolingian period, through the Romanesque, early Gothic and late Gothic periods, to the seventeenth century, is certainly instructive. The rooms here are vaulted like churches, and each mode

of vaulting is ornamented in the contemporary style.

From Amsterdam, a delightful voyage may be made by boat to the isle of Marken, which, however, has more interest for the artist than the architect. The island is inhabited almost exclusively by fishermen, whose quaint costumes with those of their wives are worth travelling many miles to see. Again taking boat we reach Hoorn in about two hours, and the journey is certainly very pleasant, as one passes many of the old dead cities of the Zuyder Zee. Upon approaching the town the Porte stands out in a most picturesque manner. This was built in the sixteenth century, and, as far as the Architecture went, compared very well with any thing I had as yet seen. The Stadhuis also attracts notice, and some panelling here is very good. This small town has produced several eminent men, among

whom may be mentioned William Schouten, born in 1580, who discovered the passage round the south coast of America in 1616, and named Cape Horn after his native town. J. P. Coen, born 1587, the founder of the Dutch dominion in the East Indies was also a native of the town. Before leaving Hoorn notice should be taken of some stone and brick gateways at the north-east of the town.

Ten miles north of Hoorn is Enkhuizen, which is reached after a ten-mile drive. The country passed through is more interesting than that of the south, whilst the peasant class seems to be in a state of much prosperity, which they have shown by erecting gaudy wooden houses, in many cases surrounded by moats with miniature drawbridges. Enkhuizen, now only numbering a population of 6300, formerly boasted 40,000 inhabitants, and this is not by any means an isolated case of a great decrease in the population of a town. It is difficult to account for such a falling off. The remains of the old fortifications in the Dromedaris Tower may be seen, and the Zinderkerk, built in the fifteenth century, has an interesting tower. The rood-loft (1542-73) of the Weslerkerk is perhaps the finest of the kind in N. Holland, beside the church is a detached wooden belfry dating from 1519. It was here that rather an amusing incident occurred. I had run out of the Dutch money, and, having only English coinage, tried, without success, to purchase some photographs; the shopmen at three establishments seeming quite at a loss to know what a sovereign was. On reaching Hoorn the next day, where I had left my baggage, the landlord asked me about the trouble I had experienced the previous day, at the same time translating a paragraph from a local paper, which stated: “A young Englishman, luckily without success, endeavoured yesterday to pass off a brass coin,” &c. Apparently the end might have been a good deal more serious than it turned out.

Alkmaar, close by, is well worth seeing, and if his visit can be arranged for market day (Friday) the traveller will be fortunate. The whole of the picturesque market place is covered with cheeses of a brilliant orange colour, and these combined with the gaily coloured country carts and quaint costumes of the peasant form a picture not likely soon



A WHARF, DORDRECHT. DRAWN BY H. F. WARING.





GABLE, HOORN. DRAWN BY H. F. WARING.

to be forgotten. The Church of St. Lawrence, a fine Gothic building (1470-98), with lofty timber vaulting, repays a visit, and some finely-carved Renaissance choir stalls will be noticed. The tower of the church fell in the fifteenth century, and has never been rebuilt.

Two places now remained which I particularly wished to visit—viz., Delf and Dordrecht. The former, once so famous for its pottery, is a charming old fashioned town of 32,000 inhabitants. It was almost totally destroyed by fire in 1536, and in 1654 it was seriously damaged by the explosion of a powder magazine. There are, however, numerous buildings of interest still existing. The new church, built in 1831, is an imposing building and possesses a remarkable monument to William of Orange in black and white marble. There is also a monument to Van Tromp, who conquered the English fleet in 1652. Immediately opposite the church is the Prinsenhof. Here was the scene of the death of William of Orange—known to history as the Silent—founder of Dutch independence, who was assassinated on July 10th, 1584. The Prinsenhof was previously a monastery, but is now fitted up as a museum. The place where the tragedy took place is still pointed out and is marked by an inscription. The Stadhuis on the west side of the market place restored by H. de Keyser after a fire in 1618 has some good pictures, and is in itself interesting to the architect.

Taking train to Rotterdam and from thence steamboat up the river, Dordrecht, after one and a half hours' most pleasant journey, appears in sight, and one is struck by the fine large tower of the Groote Kerke and the graceful Porte dome, both of which stand out in a very pleasing manner. The town in the middle ages was the wealthiest commercial city in Holland, and now numbers about 36,000 inhabitants. It was founded in 1018 by Count Dietrich of Holland. In 1572 the first assembly of the Independent States of Holland was held here. From November 13th, 1618, till May 9th, 1619, the famous Synod of Dort held its meetings here, which were attended also by deputies from England

and Scotland. It is historically remarkable for the unsuccessful siege by Jan, Duke of Brabant (1418), the great inundation of 1421, Jan van Egmond's attempt to surprise the town (1481), and the Dutch Synod (1618). Dordrecht is situated on an island. Before the above-mentioned inundation took place it was connected with the continent at Brabant, and was founded by the Count Dirk III. in 1008. To the north it is confined by the rivers Merwede and Oude Maas. Westward of the island runs the Dordrecht Kil—the way to the North Sea. The other side is occupied by the Nieuwe Merwede, running along a row of small islands covered with rushes, and it is these rivers, with their ever varying scenes of shipping, that make the place so attractive to the artist as well as architect.

The Porte already mentioned faces the river, and is built of red brick, and richly adorned with heads, lions, and escutcheons of sandstone. The centre of the decoration is formed by a large medallion representing the figure of a maiden surrounded by a hedge, and emblematical of the town of Dort. Around the medallion the coats of arms of those towns that joined the banner of Dordrecht in the times of the Counts of Holland will be seen. The arch and columns which flank the entrance of the gate were built in the eighteenth century, as was also the cupola. The building itself was erected in 1618. On the land side the gateway has the character of a stately, richly adorned Renaissance façade; along the windows rise Doric and Corinthian pilasters, cartouches and heads of angels appear here and there, and over the entrance the arms of Dort are carved, crowned with a large bust. The building is now used as a museum, and contains much of interest; amongst other objects, a carved stone mantelpiece attracts attention.

The Groote Kerke is, perhaps, the most important building in the town. This is a Gothic building of the fourteenth century, and is of red brickwork and stone combined. The tower, which is considerably out of the perpendicular, is well proportioned, and it relies more upon these proportions than upon its details, which are coarse, for its fine effect. The very excellent choir stalls, executed in 1538-40, will interest the student. On the wharves and quays some interesting warehouses stand, testifying to the town's former importance and wealth, whilst some stone houses with curious traceried window heads and wrought iron stay bar ends call forth admiration.

Owing to the fact of the town being built on a foundation of piles, many of the houses lean towards one another on opposite sides at a fearful and wonderful angle, owing to these foundations having sunk, and it is nearly incredible that the chief director of the museum should have explained they were thus built to keep off the rain from the walls.

Though the mediæval buildings throughout Holland are so good in design, and of so much interest, the art of building, at least as far as the design goes, has not descended to the architects of the present day; their construction, however, throughout the country was excellent, and I saw no sign of the jerry builder. The student goes, however, to this country to study design, and surely he will be delighted with what he sees, for where else will he find such simple well-proportioned, and at the same time, such effective treatment of buildings as in some of the old, and in many cases, rapidly declining cities of Holland?

**The Portrait of the Lord Chief Justice** (Lord Russell of Killowen), attired in his judicial robes, which is being painted by Mr. Sargent, R.A., is now approaching completion, and, it is expected, will be ready for exhibition at the Royal Academy in May next.

**A Beautiful Oak Screen** has been erected, at a cost of about £400, in the chancel of St. Mary's Church, Mortimer, near Reading, in memory of the late Mr. Richard Benyon, of Englefield House, Berks. It was designed by Sir Arthur Blomfield and dedicated by the Bishop of Oxford.

## MARBLE DECORATION.\*

BY ARTHUR LEE.

AN eastern traveller once said that until he went to India, he did not at all understand the artistic beauty of marble. As he spoke, he had before him the magnificence of the Taj Mahal, the most priceless and wonderful monument in the world, raised by the Emperor Shah Jehan to the memory of the wife. The Makrana marble of which the Taj Mahal is built, looks its best under the gilding of the Indian sun or lit up by the softer rays of the moon in the marvellous manner which can only be witnessed in eastern climes. It is under such circumstances a highly crystalline substance like marble obtains an added charm. Centuries before the building of the Taj Mahal, long before it was said of a Roman Emperor that he found Rome of brick and left it of marble, the Indian workers had attained a high degree of skill and it was probably through Eastern influence, by way of Persia and Greece, the Romans obtained such a strongly pronounced taste for marble decoration. The importation of marble into ancient Rome must have been enormous, for during the whole of the Dark Ages, and down to comparatively recent times, Rome was the marble quarry of the world. Some of the early popes are said to have destroyed more Roman buildings for their churches than the Goths, the Huns, and the Vandals put together. One of the earliest examples of this traffic is probably the Baptistry of St. John, in Florence, although some authorities are of opinion that this building is more directly of Roman origin. Many of the columns and the marble used in the mosaics at the Church of St. Miniato, also of Florence, are undoubtedly of Roman origin. It was in the eleventh century that a custom grew up that has more or less been practised in Italy of decorating the walls of buildings in bands of striking contrast. Knight puts this custom down to Saracenic influence. The Cathedral of St. Marks, at Venice, is one of the richest illustrations of marble work in Europe. It contains more than 500 pillars of Verde Antico, Porphyry, Serpentine, and some of the rarest marbles. Exterior and interior, ceiling and pavement are encrusted with rich materials. All that is not gold or bronze or mosaic is covered with the choicest marbles. One of the best known pieces of marble work in the Ducal Palace is the celebrated Giant's Staircase, a fine piece of fifteenth century work.

It is perhaps unfair to compare work of this kind with that which passes for decoration in some most pretentious buildings in this country. The owners of a fashionable London theatre only recently proudly stated that they are the possessors of "the best imitation marble set up in this country," and to crown it all "many competent judges have been deceived by it." One can imagine the criticism of the author of "The Stones of Venice," whose opinion upon such kinds of work was once forcibly expressed.

At the seat of Earl Spencer, at Althorp, in the entrance hall there is an excellent specimen of what can be done with simple white marble. Another is to be found in Mayfair, at the house of Lord Burton, where the staircase is of Sicilian and the hall is paved with the same material relieved with bands of Dove. Gosford House, the seat of the Earl of Wemyss, was originally designed by the Brothers Adam, but it was left to an architect of our time, Mr. Wm. Young, to convert it into a beautiful palace on the Firth of Forth, and to erect the charming marble staircase which is its chief feature.

Numidian marbles all take a high polish, and many of them are of singular beauty. In ancient times, they were greatly prized by the Romans, but after the fall of the Empire, the sources of supply were lost sight of, and these have only recently been re-discovered. Colonel Playfair, H.B.M. Consul at Algiers, is of opinion

\* Abstract of a paper read before the Bristol Society of Architects, on February 15th.



that the Roman Emperors carefully guarded the secret of these quarries, and that only comparatively small pieces were taken away. They were probably worked up into mosaics or used for other fine decorative purposes. Swiss Cippolino has been used in the marble decoration of the pump room at the Clifton Spa. The quarries are situated in Switzerland, and a large capital has recently been sunk in opening them out, in making roads, and laying down plant.

It is well to bear in mind that the beauty of coloured marble is seen to the best advantage in plain surfaces, and we ought generally to abstain from enriching mouldings with carving. In many of the darker marbles the effect of colour is so overpowering as to practically obliterate the forms of moulding executed in them; but whether light or dark marbles are used in mouldings, they should be unicoloured and free from markings and veins, which destroy the effect of mouldings by crossing them by inharmonious lines. It is a pity that Irish marbles are not more generally adopted. A beautiful green marble is obtained from quarries near Recess, Co. Galway. It is serpentine, like the green marble of Genoa. Repeated attempts have been made to establish the quarrying industry in Galway, but the want of appreciative demand has hitherto been always in the way.

## ENGLISH CHURCH ARCHITECTURE.

By H. A. PROTHERO, M.A., F.R.I.B.A.

**O**LD CHURCHES (and it is mainly about old churches that I shall speak to-night) may not interest everybody, but they are "common objects of the country;" and it is just as well for all of us to know something of the things that we see every day in the course of a walk or from the windows of a train. A hedge is more amusing to one who knows cranesbill from stitchwort, a lackey caterpillar from a Tussock; or a field to the critic of the points of horses and cattle; and so on. In this country you cannot go far without seeing a church, and in country places, at any rate, however new and spruce it may look, it is in nine cases out of ten an old one. Other buildings or monuments there may be which are older still—Roman walls and pavements, or camps and Celtic sepulchres. Again, there are castles of the time of Rufus, Stephen, or the Edwards; but these are comparatively scarce, and most of them, after serving their purpose for a time, were destroyed or went quickly into disuse and ruin; whereas most of our churches from the time they were built have remained

**Continuously in Use,** adapting themselves to changes without losing their identity. That is their great and unique interest, and is the key to their history. There is no other class of buildings of which the same thing might be said to at all the same extent. Compared to the periods of Geology of course "a thousand years is but as yesterday;" but in what is generally called the history of our own country, it is a longish time, and covers most of the events which are learned in our earlier days from Mrs. Markham, or Hume, or Froude; and unlearned, a good many of them, since, on what seems to be better authority. All round us are hundreds of old churches which have silently witnessed, some the whole, all the greater part, of that thousand years; and through it all have never gone out of human occupation for a year, or, perhaps, a month, or a week; possibly not for a day. If the "Stones could cry out," and tell us all they know, we might begin our learning and unlearning over again. To deal with

### A Huge Subject

like Church Architecture in a single lecture is beyond the powers of any man, unless he is so

\* A lecture delivered at the Municipal School of Art, Manchester, on Feb. 15th.

short of facts that an hour or so will tell all he knows, so I am going to pass rather lightly over ground which is probably more or less familiar to an audience like this; such for instance as the rise, development, or decay of Styles; the growth from wooden constructions to plain stone ones (which often retain woodenness of form), from the simplest round arch, through the more elaborate forms, to the pointed arch and the various developments of Gothic Architecture; and I shall deal

of any value, comes from—or is more or less suggested by—that pamphlet. Many people looking at an old church think that as they see it now so it was built; but on that point the stones *do* cry out and say "No!" Topsy, in Uncle Tom's Cabin, in reply to a question as to whence she came, replied "I guess I grewed." It is the steps by which our churches grew, according to pretty fixed laws of development, that I want to put before you. Now for just one preliminary statement



FROM THE MARKET PLACE, HOORN. DRAWN BY H. F. WARING. (See p. 67.)

mainly with what is certainly a less familiar though I hope not less interesting subject, that is the

### Ground Plan and Construction

of our churches, and how they came to be what we now see them. The idea was suggested to me by a chance remark of Mr. W. L. Newman, whom some of you may have heard of as a great Aristotelian scholar. He said to me during a country walk: "I often wish someone would tell me how old churches grew into what I now see them." The answer to that question is better contained in a pamphlet by my friend, Mr. J. T. Mickelthwaite than in any other work known to me; and most of what I shall say to-night that is

which I ask you to bear steadily in mind, for it is at the bottom of the whole subject, it is this:—*That the plan of a building is dictated by the use to which that building is put.* It does not matter what the building is. In the case of churches the use may vary somewhat. Some were intended solely or chiefly for Mass or Holy Communion with a small congregation; some for large choirs or cathedral establishments; some for monastic bodies; some for colleges; some for large audiences to hear sermons. Whatever they were for, they were planned accordingly.

### The Origin and Development

To come now to the consideration of how our church plans originated and developed,—



I shall begin by quoting Micklethwaite—He says: "Just as the Church of England traces her origin partly to the ancient British Church existing in the land before the coming of the Saxons, and partly to the Roman Church through the mission of St. Augustine at the end of the sixth century, so the buildings in which she worships show evidence of having been derived from the same two sources. We cannot indeed often say that a church is purely Celtic or purely Italian, for the two traditions existing side by side affected each other, and even became mixed; but even in those built at the present time we can trace their influences, and point out features derived from each." That is my text, and it lays down the proposition that our churches are descended from two distinct lines of ancestors, and that most of them present to this day features derived from their two pedigrees.

### The British Type.

To take now the British ancestor first:—As far as I know there remains no church in England dating back to the time before the landing of Augustine (whether or no there may be some in Ireland and Scotland). Most of them were probably of wood, and from various causes they disappeared; but the type, which is unlike most foreign types, is found in the few still standing which were built before the Norman Conquest, and it is the type which has been followed for quite small churches from that day to this. These little churches consisted practically of two rooms, with a doorway between them, so narrow that you can hardly call it a chancel arch. The finest specimen is at Bradford-on-Avon. It is of unknown date, before the tenth century anyhow, probably long before. It consists of a tall aisleless nave and a very small chancel, square-ended as the British church perhaps always was, with a round-headed opening between the two. It has also, what most of them have not, a porch.

### The Basilican Type.

That is one parent stock; and before going on to describe how it developed, I must go outside England to say something of the other, to which are mainly due our larger churches, cathedrals, and abbeys. This was the *Basilica*—the law court of the later Roman Republic and of the palmy days (financially palmy at any rate) of the Empire. Whether the Roman church on emerging from upper chambers and arenas, deliberately copied the Basilica; or whether in the fourth century she actually came into possession of any of them, I don't know. But in general plan and arrangement, exactly what the legal Basilica was in the time of Nero, the Christian Basilica remains in the time of Leo XIII. without any alteration worth speaking of. Basilicas seem to have appeared in Rome after the fire in 210 B.C.—before which Livy says: "neque enim tunc basilicae erant." They were borrowed of course from Greece, where the *στοὰ βασιλική* was the porch in which the *ἄρχων βασιλεὺς* sat to adjudicate on religious matters.

### The Roman Basilica.

In Rome there were at various times about twenty of them; and the perfect form was a quadrangular hall, at least twice as long as broad, with rows of pillars forming aisles with galleries above, and an apse at one end or both. Round the apse sat the judge and his assessors, the prætor's curule chair being in the middle of the curve. In front of him, under the chord of the apse, was the altar on which the judges swore; and this part of the building was partly raised off by latticed screens called "cancelli." The Christians thus found their churches ready to hand. The nave held the general congregation—mostly the men, the galleries accommodated the women (an arrangement still adhered to in some parts of Europe, also in synagogues), the bishop took the prætor's chair, the clergy the benches of the assessors, the readers and singers occupied the places of the advocates below the tribunal, and the altar remained where it was in the middle of what now became the choir, fenced from the nave by the cancelli. When Augustine came to England, that was the

type of church he was accustomed to; and how little it was departed from can be seen by comparing the plan of the Basilica on the Palatine, which never was a church at all, with the original pre-Norman Cathedral of Canterbury.

### Development of the Bradford Type.

I shall now go back to the simple chapel of the Bradford type, and show very shortly how this type developed, until it became, in large parish churches, something nearly akin to the foreign basilica. The first step was taken not long before the Norman conquest. A good deal of money must have been spent on Churches, and Queen Emma brought over foreign ideas from Normandy, where Architecture had taken a lead which England could only follow at a distance. The chancel arch widened, and the small square-ended Sanctuary (at any rate after the conquest) grew pretty commonly into a chancel with an apse at the end. I shall say more about apses further on, and will only point out now that the apsidal form is on the whole foreign, and that though there was for a time a general tendency to adopt it in England, that tendency in the long run gave way to a sort of insular prejudice in favour of the square end. As an extreme case of apsidal form in foreign churches I may quote the queer little church at Querqueville, overlooking Cherbourg Harbour, which with a tiny nave and small apsidal chancel and transepts has exactly the ground plan of the ace of clubs.

### Towers and Transepts.

Another change which comes in this period is the appearance of towers, sometimes at the west end; more commonly on two cross arches at the entrance of the chancel. This was before the cross shape was thought of, and the plan was still a simple parallelogram, with a tower in the middle, a plan of which one notable example is Ifley, near Oxford. Before long transepts of some sort began to appear; rather rudimentary, and not opening into the church at all, as I believe is the case with the very curious old church in Dover Castle. But the opening into the church soon followed, and the regular cross shape at once became so popular as to be almost universal for churches of any size. This is really one of the most curious and least known things about our old parish churches, that, though most of them have now lost their cross shape, and their towers, as a rule, no longer stand in the middle, but at one end; yet they retain to this day traces of their older plan of a plain cross with a tower in the middle. The occupants of these

### Cruciform Churches.

when the population grew and more accommodation was wanted, found themselves in a difficulty about enlargement. They could not adopt heroic measures and begin over again, and indefinite elongation of the nave was inconvenient, so they generally knocked out the north wall of the nave, and built a narrow aisle opening into it by an arcade, and into the transept by an arch; and later on, when need arose, they did the same on the south side, making the aisle a little wider this time. These narrow aisles were sometimes part of the original building in Norman times; more commonly additions, but whichever they were, they, in their turn, became inadequate, and in the fourteenth century they were very commonly pulled down and wider ones built instead (sometimes wider than the nave they flanked, as at Great Yarmouth, Cheltenham, and elsewhere); and at the same time the comparatively short Norman sanctuaries gave way to larger chancels, a change which one connects with a change in the services; the older sanctuary being for the Communion Service, or Mass only, while the new chancel was wanted for clerks and others who said publicly the services of the Breviary, now adapted in the Morning and Evening Services of the Church of England.

### Origin of the Clerestory.

There were two main results of this wide aisle building. One was that the side windows were

pushed out so far that the nave became rather dark, so a clerestory was built over the nave arcade and often developed into an important feature. Where no clerestory was built you sometimes find (as at Newport in Monmouthshire, and Overbury in Worcestershire) the Norman nave bottled up by large later aisles, so that the old small clerestory windows open, not into the open air, but into the aisles beyond.

### Why Central Towers Disappeared.

The other result is an odd, but quite natural one:—The aisle builders had opened their wide aisles into the transepts by wide arches, consequently the twelfth century towers, which had stood securely on their cross walls, lost much of their support, and in most cases tumbled down, the result is that central towers are now comparatively scarce in parish churches, though of course a good number are still standing. Another thing, by the way, which weakened towers was the custom of cutting "squints" through their supports, by which people in aisles or transepts could see into the chancel. It is a common idea, I believe, that the people did not hear, see, or know (were not in fact allowed to hear, see, or know) what was done in the chancel; but having no time for theories I can only point out the fact, visible all over the country, that when the old people had a Tower or a narrow arch in their way, they cut such a lot of peep-holes all round it that in the end it very commonly fell down. As a rule, when the fourteenth century people found that their Towers were down they no doubt talked it over and agreed that their old central Towers were rather inconvenient and blocked the church, and as they were down they would not put them up again in the same place, but build a steeple at the West end, where it would do just as well and interfere with nobody. This was about the time of the Black Death, and of a generally troubled state of things in England, so that the country was not much in the mood for building. They patched up the churches where the fall of the old Towers had wrecked them, but left their new Towers until they felt in better spirits. Consequently for a time

### Towers were scarce.

The old ones had tumbled down and the new ones were not built. However, after a bit they built their new ones, and they seem generally to have built them detached from the existing west ends, and joined the two later, so that the building of the tower should not interrupt the services. Perhaps this is a convenient place to answer a common question—Why are so many old churches askew?—The chancel not on the same axis as the nave. Many pious and fanciful reasons have been given, but Micklethwaite points out that as one part of the building continued in use while another was being built, and as the builders had no very accurate instruments, they often got a little off the lines, which is a prosaic, but doubtless true, explanation. By this time, as you see, the cross shape was nearly lost, and when the fifteenth century people carried on aisles or chapels east of the transepts, it disappeared outright, and the

### Church became a Parallelogram;

but—and this is an important point—if you look carefully in one of these late parallelogram churches for earlier work, in the place where *a priori* you would expect to find it—i.e., at the west end and the extremities of the transepts—there you will often find it in the midst of its earlier surroundings. Having traced the development of the parish church from the simple Saxon and British type to something which in the end resembles the Basilican plan, I will now only say a word or two about the roofs, which is such an important feature of late churches. Foreign churches, even small ones, were and are much more commonly groined in stone than ours are. In England, the usual thing was a wooden roof, which, in the fifteenth century, especially in some eastern and south-western countries, became one of the glories of the building.

(To be continued.)



# Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

## ARCHITECTURAL EXHIBITS AT THE ACADEMY.

To the Editor of THE BUILDERS' JOURNAL.  
 DEAR SIR,—May I ask if you can kindly tell me what are the rules for framing architectural drawings for the Royal Academy. Are gilt frames necessary?—Yours faithfully,  
 Clifton. J. B.

The Royal Academy publishes a list of conditions to be observed by intending exhibitors. You should write to the secretary for this. One of the conditions is that gilt frames must be used.

## BOOKS ON MASONRY.

To the Editor of THE BUILDERS' JOURNAL.  
 SIR,—Could you recommend Books on Masonry, especially those which would be useful to R.I.B.A. students. See p. 253 I.B.A. Kalendar 1898-99. "One sheet of Diagrams of Constructive Masonry on Brickwork, such as arches or groined vaults with the projection of arch and vault stones."  
 "ARCH."

"Masonry and Stonecutting" by E. Dobson, price 2s. 6d., and "Practical Masonry" by W. Lockwood, price 7s. 6d., both published by Lockwood, and Son, are books that will suit you. Both give illustrations of vaulting and similar work sufficient for your purpose.

## ACETYLENE GAS.

To the Editor of THE BUILDERS' JOURNAL.  
 DEAR SIR,—Could you or any of your readers inform me where I could get full information with regard to acetylene gas? I wish to make use of it, if suitable, in a country house, but am somewhat ignorant of the rules to be observed in its application.  
 COUNTRY SUBSCRIBER.

Plymouth.  
 A pamphlet containing a good deal of information about acetylene gas and its manufacture can be obtained from the Acetylene Illuminating Company, 63, Queen Victoria Street, London. They, however, do not supply the gas generators, but only manufacture the carbide of calcium from which the gas is made. Probably your best plan would be to write, giving particulars of the extent of the installation you would require, to the Ideal Gas Company, 3, Tachett's Street, Blackburn, Lancs., or to Messrs. Thorn and Tiddle, 1, Tothill Street, Westminster.

## COST OF PUBLIC BATHS.

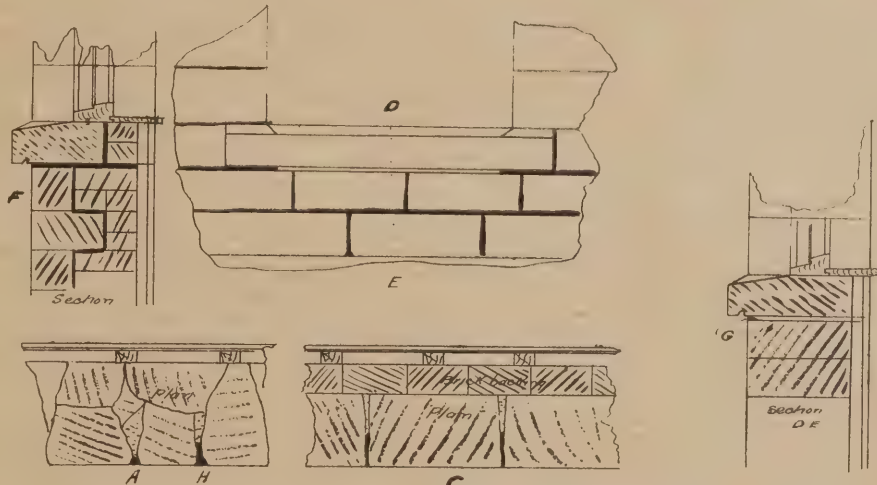
To the Editor of THE BUILDERS' JOURNAL.  
 DEAR SIR,—Can you give me the approximate cost of erecting a few baths for working-men in a manufacturing town (exclusive of land), to be of a substantial but economical character, and to include tank, porcelain baths, pipes and fittings, and caretaker's rooms? I thought we to reckon upon spending more than £100 per bath—say, £400 for four baths, £800 for eight baths, and so on, including all the above.—Yours truly,  
 £ S. D.

It is by no means easy to give a satisfactory answer to your question, neither are we quite certain whether you want a swimming bath as well as private slipper baths. In either case you can hardly calculate the cost at so much per slipper bath, as, however few there may be, there are always the caretaker's apartments, the laundry, the heating apparatus, &c., to be provided; so that there would be not much difference in the cost, whether you had ten or twenty. If you require a

swimming bath and, say, twenty to thirty slipper baths, you must calculate on spending from £7000 to £8000, and, as a general guide to the art of such buildings, you may take the price at about 8d. for every cubic foot in the total cubic contents of the building, including the engineering, which is an expensive item. If you only require slipper baths, you might be able to provide, say, from twenty to thirty, with caretaker's house, laundry, entrances, &c., for about £2500. It would hardly be worth while to build with fewer baths, as the cost of the necessary accessories would become out of all proportion to the bathing accommodation provided; but if you have very little money to spend, you might be able to alter, or add to, an existing house to give six or eight baths, and this might possibly be done for a few hundred pounds; but then you have either to buy the house or pay a rent. All such estimates as these are, however, rather wild, as you have to take into account the prices of local materials and labour, the nature of the site, and so many other unknown quantities.

## RAIN DRIFT THROUGH SOLID GRANITE WALLS.

To the Editor of THE BUILDERS' JOURNAL.  
 DEAR SIR,—Can you suggest a certain cure for rain drift through solid granite walls? The walls were battened to prevent damp striking through. The writer does not want to have recourse to external cementing if it



RAIN DRIFT THROUGH SOLID GRANITE WALLS.

can be avoided. Indurating solutions have not proved very satisfactory. BUILDER.  
 Birmingham.

If these walls are solid granite, and are not backed up with brickwork in cement (see Sketch C), it is most likely that external rendering with Portland cement and clean gravel will be the only certain cure. Before this is resorted to, careful examination should be made of the pointing, projecting courses, window and door openings. It often happens that pointing is of less value than it appears to be (see Sketch A). This may become cracked, and render it possible for rain to get behind and make its way to the mortar used for building. The window and door openings are also sources of weakness in many instances. Sketch D and Section D E show how cells are usually left hollow until a building is finished. Sketch F shows how the cell bed should be filled up, instead of the common method, as at G. The window and door frames should be thoroughly pointed and bedded. String courses and cornices and all projecting courses should be covered with lead well cap flashed. All joints should be raked out deeply, as at H, and well pointed with good material. All cells should be filled up underneath with grout if found hollow. A prod with a penknife will go through pointing, as at G. The inside may be dealt with by rendering the wall with Portland cement and gravel before battening

if the place is to be replastered. We do not think petrifying solutions are of much value in cases like these.

## FUMING AND POLISHING MAHOGANY.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Would you—through your enquiry column—inform me how the tone of colour on Chippendale furniture is obtained, as I am desirous of getting the effect on some new work. Is the mahogany fumed or stained? (I do not know whether the former has ever been tried on mahogany with any degree of success.) If stained, what stain should be used, and is French or wax polishing the best method to adopt.  
 "UNCERTAIN."

The "Chippendale" colour may be obtained by subjecting the mahogany to the fumes of the strongest liquor ammonia in an air-tight receptacle. The same effect may be secured by the use of a solution of potassium bichromate; but the application of any stain—though the easier method—has the corresponding disadvantage of swelling the grain of the wood. The colour of the new wood, and the exact shade required in the finished article will determine the time required for fuming and the quantity of ammoniacal gas required, also the strength of the bichromate solution; but any good polisher will be able, by the use of red oil and stained polish, to impart to the work any required tone, even if the preliminary

darkening has not been carried sufficiently far.

## WATERPROOFING BRICK WALLS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Will you kindly tell me if there is any method of making a brick wall waterproof without affecting its appearance?  
 St. Alban's. R. G. E.

A couple of coats of boiled linseed oil, liberally applied, form a good waterproofing composition for application to exposed walls in order to prevent wet penetrating, but the colour of the brickwork is mellowed somewhat by this treatment. In the case of light red facings this mellowing may be rather in the nature of an advantage than otherwise; but if it is a *sine qua non* that the colour must remain unaltered "Colourless Zopissa Solution" (Granite Paint Company, Cross Street, Creek Road, Deptford, S.E.) or "Fluate" (Bath Stone Firms, Bath) might be tried; but it would be advisable to try the effect of either or all of the suggested treatments upon a sample brick or piece of walling before venturing upon the job as a whole. The walls should be pretty dry before anything is done as, otherwise, any contained moisture would be driven inwards.

[Several answers are held over till next week. Ed.]



## Correspondence.

### SOANE MEDALLION DESIGNS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—It is stated in your issue of Feb. 22, that one of my drawings, submitted in the recent competition for the Soane Medallion, is reproduced upside down in the issue of "The Builder" for Feb. 18th. I should like to state that the plan is placed therein in the only position in which it can be read properly with the section, and a person opening "The Builder"—the right way up—will see the plan as it was originally fixed to the drawing-board when it was being designed, and it was then certainly not upside down.—Yours truly, W. STANLEY BATES.

[We willingly publish the above letter and withdraw the suggestion that our contemporary has printed one of Mr. Bates' drawings upside down. It is evidently Mr. Bates' system of lettering his plans that is at fault, and our contemporary could not well have arranged them otherwise. Looking at the Longitudinal Section in the natural way so that the lettering reads from bottom to top the plan would be upside down; but this, says Mr. Bates is not the right way of the sheet. It follows then that we must read the lettering on the section one way—from top to bottom—and that on the plan the other way—from bottom to top. The point is a small one, but such an arrangement is obviously inconvenient. Ed. B. J.]

### STRAINS IN BEAMS.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—As a teacher of Building Construction at the East London Technical College and at Croydon Polytechnic, I think I may be excused for pointing out some errors in Mr. C. W. Tomlinson's article, entitled "Strains in Beams." At the bottom of the first column we read: "The next thing is to find the amount of stress produced, or bending moment, as it is termed. In this appears the first blunder. Stress is by no means the same thing as bending moment. Bending moment, or leverage, is the cause, stress (i.e., the internal forces in the beam) is the effect, a fact which should not be mis-stated by anyone setting out to simplify the formulæ given in text-books. Again, bending moment is leverage, which implies distance and force, and is measured in tons-ft. or lb.-ft., &c. Now we find Mr. Tomlinson giving the stress or bending moment as 13.125 tons in the example (Fig. 5). The answer given is not stress, but bending moment, and should have been 13.125 tons-ft. Another serious blunder occurs in the rule given. The latter part of it reads: "The remainder will be the amount of stress at the given point." Here it should have been the magnitude of the bending moment, &c. To take the last example, we read: "Stress at X=72.1 tons." Clearly what should have been stated is that the bending moment at the section X is 72.1 tons-ft.—Yours faithfully,

ALBERT GRENVILLE.

DEAR SIR,—With regard to the alleged blunder at the bottom of the first column, I feel I cannot do better than quote my authority. Wilson, in his "Advanced Building Construction," p. 180, says: "To determine the strain or bending moment," thus implying they are one and the same thing.

For this reason I used the term strain (or stress), as being more familiar to students than bending moment, as the latter term is more usual in applied mechanics, and, on the same grounds, I expressed the magnitude of the strain (or bending moment) in tons, though I am aware it is more strictly correct to express the same in foot-tons.

All the alleged errors are based on this same question of terms.—Faithfully yours,

CHAS. W. TOMLINSON.

[Mr. Tomlinson is quite at sea in his use of the terms "strain," "stress," and "bending moment." We shall publish next week an authoritative note from an expert. Ed. B. J.]

## Keystones.

**A Science and Art Institute** is proposed for erection at Stourbridge, at an estimated cost of £7000.

**A Refuse Destructor** is to be erected at Paisley. The Horsfall Syndicate Limited are supplying a portion of the work.

**A drinking fountain** to be erected as a Memorial to the late Duchess of Teck will shortly be placed on Richmond Hill.

**The English Church of St. Mark, Assuan**, is now being erected. The Duke of Connaught laid the foundation stone on Feb. 27th.

**A New Railway Station at Finchley**, between Church End and East Finchley, is to be opened by the Great Northern Railway Company.

**A Band Stand** to cost £594 is to be erected in Battersea Park. The London County Council voted the money at its last week's meeting.

**The Alterations to Clerkenwell Fire Station** have cost £2,694 in excess of the estimates. The County Council have sanctioned the payment.

**The Architect of the London School Board**, Mr. T. J. Bailey, is to have his salary increased to £1100 a year, with a further increase is twelve months to £1200.

**A New Bank at Southsea** for Messrs. Grant and Maddison's Union Banking Company, is to be erected on the site of the old premises in Palmerston Road.

**A new hotel** erected by the Great North of Scotland Railway Company at Cruden Bay, has been opened. The decoration and furnishing have been carried out in sumptuous style.

**St. John's Church, Lowestoft** is being improved by the addition to the chancel of a new marble reredos, which was subscribed for as the local memorial of the Diamond Jubilee.

**The John Ruskin School**, in Beresford Street, Newington, built at a cost of £22,504, has just been opened. The site has cost an additional £7928. The school provides accommodation for 1138 scholars.

**The late Mr. William Roberts**, architect, of Manchester, has bequeathed over £23,000 for public purposes; £4500 is given for a statue of Mr. Gladstone, to be erected in Manchester. National charities also benefit.

**New Schools at Dumfries**.—A new elementary school has been erected in George Street by the Dumfries School Board. It is a handsome building, having cost (with the site) nearly £10,000. The architect is Mr. Crombie, of Dumfries.

**Fever Pavilions for Burnley**.—The Burnley Joint Hospital Board have decided to apply to the Local Government Board to sanction the borrowing of £15,000 for the purpose of building two new fever pavilions, and of paying the excess in expenditure over the borrowing powers on the Burnley and District Sanatorium.

**All Saints' Church, Thwing, Yorkshire**, is to be renovated at a cost of £2500. The old high pews are to be swept away, but the remarkably fine Norman chancel arch, south porch, and font are to be carefully preserved. A striking feature in the chancel is a monument of a priest in full vestments of ancient pattern.

**The Arts and Crafts Society of Ireland** purpose holding their exhibition in Dublin during November of this year. The Senate of the Royal University have again granted the use of their buildings, at Earlsfort Terrace, for the purpose of the exhibition. A substantial guarantee fund has already been subscribed sufficient to enable the society to complete their arrangements. Intending exhibitors should communicate with the hon. secretary, Arts and Crafts Society, 15, Kildare Street, Dublin, with regard to rules, regulations, and other details.

**The Temperate House at Kew Gardens** has had a second new wing added, and the whole of this splendid conservatory thus completed will soon be open from end to end. It lies up in the vicinity of the Pagoda, which disfigures the beautiful grounds of Kew on the Richmond side.

**The Albert Memorial Church, Harpurhey**, has just had a new parochial hall built close to it. The building, which will appropriately be known as the Victoria Hall, will be used for parish meetings, classes, and occasionally public worship. The cost of the hall has been £700.

**The Baker Street and Waterloo Railway**.—At its meeting last week, the London County Council approved the plans and specifications showing the mode of construction and the position and level of the two tunnels which it was proposed to drive under the Victoria Embankment to the south of Charing Cross railway bridge.

**A bust of Prince Charles Edward** the "Young Pretender," has just been added to the collection at the National Portrait Gallery. The bust, which is of bronze, is said to be an excellent likeness of the prince when he was about fourteen years old. It has been given to the trustees of the gallery by Dr. W. Aldis Wright, of Trinity College, Cambridge.

**The Royal Portsmouth Hospital** has had two blocks, comprising four wards, added to it, and these were opened by the Duke and Duchess of York last Monday week. The architects are Messrs. Young and Hall, and the contractor is Mr. J. H. Corke, of Portsmouth. Two other blocks are still to be added when funds are available. The cost of the additions has been £16,000.

**The British Fire Prevention Committee**, which was founded in 1897, has now become a fully incorporated scientific society, under the special sanction of the Board of Trade. The rapid development of the Committee is mainly due to the energy of its Executive, led by Mr. Edwin O. Sachs, and to the influence of its Council. Its scope is again being extended—another important section, dealing particularly with the safety of factories and workshops, having been formed.

**Restoration of Strood Church**.—The work of restoring St. Nicholas Church, Strood, Kent, after the recent destructive fire in the tower, is about to be taken in hand. The turret destroyed by the fire was out of harmony with the general character of the Early English tower—the sole remaining piece of the ancient Church—but it has been decided to adopt the battlemented parapet style in carrying out the restoration instead of the shingle spire of the original church.

**Inverness Music Hall**.—The plans prepared by Messrs. Ross and Macbeth, architects, for the restoration of the Music Hall, which was recently burnt down have been passed. The main walls and stone stairs of the old building, which are intact, will be utilised, and the hall will be reconstructed on the former model, with, of course, improvements, including an installation of electric light. The principal entrance and lobbies and landings will be widened by several feet, stone stairs will be extended to the galleries, and means of ingress and egress much improved. The total cost will be about £4000.

**The Cleaning of Cathedrals**.—"Londoner" writes to the "Morning Post":—"May I ask who is responsible for the cleanliness of our cathedrals? The present state of St. Paul's, dirty and begrimed, is beyond description, and St. Alban's and Westminster Abbey, with many others, are in the same plight. I was amazed to see the condition of St. Paul's both outside and in, a very picture of utter neglect, dirty, with what to all appearances were accumulations of long standing. My opinion is that the dirt and the grime are a desecration of the noble edifices. Thousands of pounds are given away in charity almost daily in this great metropolis, some of which is to the poor out of work. Why, then, can not these unemployed people be given labour in cleaning many public buildings?"



## R.I.B.A.

### EARLY CHRISTIAN CHURCHES IN PALESTINE.

A SPECIAL general meeting of the Royal Institute of British Architects took place last Monday evening, at 8 o'clock, at No. 9, Conduit Street, Regent Street, W., to elect the Royal Gold Medallist for the current year. Professor G. Aitchison was in the chair, and moved "that, subject to Her Majesty's gracious sanction, the Royal Gold Medal for the promotion of Architecture be presented this year to Mr. George Frederick Bodley, A.R.A., for his executed works as an architect." The motion was carried. The ninth general meeting (business and ordinary) was held at the conclusion of the above-mentioned meeting, and the minutes of the last meeting having been read, the following gentlemen were elected members of the Institute:—as Fellow, Samuel Perkins Pick (A); as Associates: Walter Hargreaves Bourne, William Alphonso Scott Ernest Jesse Mager, George Reavell, jun., John Henry Arthur Phillips, Arthur Maryon Watson, John Cubbon, Harry Inigo Triggs, Frederick Robert Hiorns, John Kirkland, Edward Frost Knight, Harry Dighton Pearson, Leslie William Green, and Henry Tanner, jun. As Hon. Corresponding Member: Professor Commendatore Felice Barnabei, General Director of Antiquities and Fine Arts, Rome. Mr. Henry Dawson's motion: "That, with the object of securing correct legal action in the election of candidates for membership of this Institute, the members thereof request the Council to obtain, at the earliest convenient date, the written opinion of some Queen's Counsel of independent position, as to

#### Whether Women are Eligible

as Associates or Fellows, under the terms and provisions of the existing charter and by-laws of the Royal Institute of British Architects. And that the Council do report such opinion to the members at the earliest convenient date" was lost by the casting vote of the chairman. Mr. Owen Fleming next moved "That the attitude of the Council towards the brickwork experiments conducted by the Science Standing Committee is calculated to impair public confidence in the Royal Institute, and that the Council therefore be invited to take such steps as may be necessary to bring the matter to a satisfactory conclusion." The motion was carried. Mr. H. Hardwicke Langston's motion, *re* a prominent inscription to be placed on the street front of the premises, indicating their occupation by the Institute, was held over. At the conclusion of the foregoing business a paper was read by Mr. A. C. Dickie, A.R.I.B.A., on "Some Early Christian Churches in Palestine," with lantern-slide illustrations. There was no discussion on his owing to the lateness of the hour, but written communications can be sent for insertion in the Institute journal. The following is a *résumé* of the paper:—

The lecturer said that Jerusalem was rich in remains of early Christian churches, and he had selected for discussion three interesting types of plans which were comparatively unknown—viz., those of the

#### Church of St. John the Baptist

(eleventh century), an Armenian mortuary chapel (sixth century), and the Church of the Pool of Siloam (fifth century). Before dealing with these, the lecturer briefly outlined the history and described the great cathedral church of the Holy Sepulchre, the most important and most interesting early Christian church in Jerusalem. Constantine, in the fourth century, built a basilica over the site of the discovery of the true cross by Queen Helena, and a rotunda over the Holy Sepulchre, which seems to have been separated from the basilica by a cloister. These were burned and destroyed by the Persians in 614, and partly restored by Modestus soon after, with the addition of a chapel over Calvary and a chapel to the Virgin Mary. Arculf (7th century) gives a plan of the building showing

the rotunda isolated, and between it and the basilica the chapel over Calvary and the chapel of St. Mary. The buildings were again destroyed and restored in the 9th and 10th centuries, and totally destroyed in 1010 by the Khalif Hakem. Not long afterwards they were restored, and in the beginning of the 12th century the restoration of the Crusaders made the church much as it is now seen from the housetops. The façade, with its domes and tower and the Mohammedan minaret in the foreground, is the most charming group of the city, the rich tawny colour of the weathered stone and the lead and white domes set in bright sunlight against the intense blue Syrian sky is a picture to be remembered. The lecturer acknowledged his indebtedness for the facts given of the church to the careful researches of Mr. George Jeffrey, a fellow of the Institute. The church of St. John the Baptist lies on the way to the church of the Holy Sepulchre, in Christian Street, adjacent to the Pool of Hezekiah.

#### Over the Original Church a Modern One

has been built, very nearly on the same plan, and the ancient building now takes the place of a crypt, the surface of the ground being at the level of the upper church floor. The lower church is reached by a rude flight of steps on the south side descending into a narthex, from which three doors enter the main building. The total length of the church, north and south, is 62ft. 9in., and width 24ft. 9in., which the later wall thickening has reduced to 16ft. 6in. The west wall of the narthex is 6ft. 10in. thick. The floor of the eastern apse is raised 6in., and the original window is now formed into a recess. The present vaulting is late pointed, the centre bay having intersecting vaults, and the flanking bays plain vaults. A close examination of the vaulting convinced the author that it had been constructed in the same way as the natives construct the vaults at the present day, viz., by a rude centering of timber, brushwood, and earth, modelled to the form of the vault, and then completed in concrete of stones and lime thrown quickly over the centering and left to dry. An Arab effendi, when excavating the foundations for a new house, came upon one of the most beautiful Byzantine floor mosaics yet discovered. He preserved it by building a cell on the old foundations. The mosaic formed the floor of an Armenian mortuary chapel, a tiny, rectangular cell, 21ft. by 13ft., with an apse on the east end. The lecturer quoted Dr. Bliss's account of the discovery, and a note by Dr. A. S. Murray on the design of the mosaic. Next to the Church of the Holy Sepulchre, perhaps the most interesting is the church dedicated to

#### The Waters of Siloam

in the middle of the 5th century. This long-lost ruin was discovered during the recent three years' excavations by the Palestine Exploration Fund under Dr. Bliss's direction. Having given a description of the Pool of Siloam and its present condition, and some account of Dr. Bliss's excavations, the lecturer went on to discuss the church itself. There is no record of any building attached to the Pool prior to the time of the Empress Eudocia in the middle of the fifth century. The sacredness of its waters to the pilgrims who sought relief from their infirmities at its healing stream inspired the Empress with the idea of building a place of worship over the Pool. The plan adopted is unique. It consists of a nave and two aisles, measuring over all 86ft. by 52ft. In the centre of the nave are four piers 4ft. 3in. square, the supports of the Byzantine dome of a later restoration. The projecting choir is also of the period of this later work, as well as the thickening of the pier in the entrance colonnade to the north, inserted evidently to provide for the extra thrust of the dome arches. There is no entrance in the west, and access is gained from the north by a great stair of sixteen steps, 68ft. wide, descending through an arcade of seven arches almost the whole length of the aisle. The staircase is reached by three doors, entering from an atrium, the centre doorway being accentuated by the addition of a small portico. Between

the doorways occur low stone benches set against the wall, used as seats. Ranged round the apse are five tiers of steps, with the centre raised at a higher elevation than the flanks for the seat of the bishop, as existing, more or less complete, at Torcello, illustrated by Fergusson. There is a small chapel in the east end of the north aisle, screened by a low screen of red marble 2in. thick, let into the sill and walls, and coped with a moulded coping stopped by moulded stone gate-posts in the centre, the remains of which were found lying at this point. In considering the influences which had worked together to bring about

#### The Peculiarity of Plan,

the lecturer explained that the church was designed to fit into an existing scheme, in the building of which no such extension was contemplated. At that time the pool was believed to be supplied by a spring, the builders being ignorant of the existence of the Siloam tunnel. The position of the supposed spring to which the church was dedicated, therefore fixed the position of the altar directly over the spot where the waters were believed to spring from, 27ft. below. This practically settled the eastern apse, and the west wall was fixed by the position of the rising scarp and city wall then existing, and forming the western butt of the great staircase, the necessity for incorporating the latter into the plan, forcing the builders to draw the wall to within a few feet of the scarp, leaving a space only sufficient for a narrow passage and a western light to the church. It was desirable to have as much of the church as possible over the pool, and this was easily managed by carrying the south wall on the pool arcade and the aisle colonnade on the north wall of the pool. Thus the north was the only side available for the entrance to the church, and although the rapidly rising ground rendered this difficult, necessity demanded it, and the magnificent idea of a great staircase entering the north aisle through seven arches (almost its whole length) was the result. The traditional three doors were placed at the entrance to the staircase, and an atrium put in front. Thus all the traditions of the early church plan were retained in a modified form—a most successful solution of an exceedingly difficult problem. An unsuccessful attempt was made to buy the site, with the intention of restoring the church and pool to its original state. Among the illustrations was a sketch restoration made by the lecturer, founded upon the theories advanced in his paper. A careful study of the existing remains leaves little to conjecture, as the buildings practically stand for a height of 35ft. from the pool pavement to the ruined top of the church walls. The Hon. Sec. proposed a vote of thanks to Mr. Dickie, and this was seconded by Mr. R. Phené Spiers. The vote was heartily carried. At the next meeting on March 20th, Mr. John Bilson, F.R.I.B.A., will read a paper on "Beginnings of Gothic Architecture: Norman Vaulting in England."

**A Statue to the late Lord Aberdare** was unveiled last week at the Howard Gardens, Cardiff.

**Municipal Trading.**—A memorial has been addressed by the Council of the Society of Arts to the Home Secretary with regard to the increasing tendency of municipal and local authorities to embark in trading enterprises which may be in competition with, or to the exclusion of, private enterprise, and to the fact that as yet no limitations have been defined as to what enterprises should in the general interests of the nation be undertaken by municipalities and local authorities, and what ought to be left to private effort. The Council ask the right hon. gentleman to advise her Majesty to appoint a Royal Commission to consider the whole subject, and to lay down the principles and limitations on which Parliamentary powers should be granted to municipal and local authorities, and submit that until the Report of the Commission no further powers for trading purposes ought to be granted to such bodies.\*



## PUBLIC BATHS.\*

BY A. SAXON SNELL, F.R.I.B.A.

IT is not my intention to go over the ground so ably traversed by Mr. Hessel Tiltman at an Institute meeting a month ago, if only because my paper might appear in some measure a mere *résumé* of his, and would lack interest to you. He describes the broad lines and the general disposition of public baths and washhouses. I have proposed to deal with the subject much more modestly and rather with constructive details. But one cannot approach the constructive details without some preliminary survey of the planning of these institutions; and if the remarks I have to make under this head are somewhat more lengthy than a preliminary survey might appear to warrant, you must ascribe it to the weakness of an enthusiast who cannot help airing his pet theories; and I have many with respect to the planning of public buildings. It is difficult to lay down hard and fast rules for the planning of any class of building in London, if only because of the restricted area and often extraordinary configuration of the sites which are chosen by enlightened public bodies; it would almost appear, with the idea of setting prize puzzles to aspiring architects. In most other countries

## The Best Sites

are always reserved for public buildings—in London for enterprising speculators. Generally in Continental towns nearly every public building of any importance is bounded by streets on at least two sides. If the architect gets one fairly good frontage in London he is lucky. But our very difficulties in this way stimulate inventiveness, and I venture to think that nowhere in the world can more ingenuity in planning be found, nor have greater triumphs been achieved in making the most of limited opportunities, than in this huge conglomeration of buildings called London. Given, however, a fair site, the least we can do in making our plan is to study carefully the uses of our buildings and the essential requirements of their administration, and then to concentrate all our attention upon so

## Arranging the Various Parts

of the building as to fit these requirements, and to render future administration as easy and economical as possible. It follows without saying that if we are architects in the most practical sense of the word, we shall be able to construct our buildings strongly, and clothe them in the most seemly array, and make even our difficulties yield opportunities for effective design. The word "economy" has been brought into contempt so often by its misuse in the mouths of these narrow-minded people with whom it is synonymous with "cheapness," that it is worth while to define our own meaning; the short form for which is arrived at by labelling it with the words "wise" or "true." In planning a building, then, to ensure or make possible "wise" or "true"

## Economy in Administration,

we mean arranging the various parts in such order as will enable those who administer it thereafter to do so with the least waste of human energy; and happy is the architect whose clients perceive the true bearing of this principle, and follow it to its logical outcome. It is only just to our clients, by the way, to say that it is largely recognised by them to-day, as can be shown by the lavish expenditure upon glazed bricks, majolica, and other surface decorations, the great first cost of which is so soon repaid by their permanence, and the small cost of maintenance. I need scarcely remind you that we, as architects, are much more interested in the first cost of a building than in its subsequent maintenance; and it is therefore also our interest to build well from the first. That is by the way; it does not benefit us alone. Indeed, our share is, comparatively speaking, small; the benefit to the client is far greater.

For it is obvious that if by our skilful planning we make it possible to administer a building with five servants, say, instead of six, we save our clients a subsequent expense—to take a low estimate—of £500 annually; a sum which capitalised could be expressed in buildings to the value of £1500 or thereabouts. Inversely, if by expending an additional £500 our client saves the cost of one servant, he is the gainer by £1000, and we—the architects—by £25. It ought to be the other way round, but let that pass. Those who, like myself, have had the privilege of going over the new baths at Shoreditch will agree with me that we are improving in our ideas as to what a public building should be. For some years our rulers have been

## Slowly Learning the Lesson

which we architects have endeavoured to teach them for many years; but they listened not to our voice, and even hinted that we advocated magnificence in our public buildings mainly because of the increased benefit to ourselves. But they begin to see now that money spent in buildings is not spent in the sense that it leaves us poorer, but rather that it is *invested*. They begin to realise that in no way can money be more widely circulated, or give a better return to the community, than in building. They realise that nothing is more educational to the lower stratum of human life than to house it decently, and to accustom it to better surroundings. The money spent in public buildings must be regarded as invested only—and well invested—we have but to point to

## Our Old Cathedrals,

buildings which are now priceless, and who shall estimate their educational effect, even at the present day? A little sign that the public are beginning to perceive these things is afforded by the growing tendency in competitions not to hamper the competitors by a fixed price. May the tendency grow into custom! Another is the custom of visiting other institutions to learn what is their best, and then to go one better. We of the younger generation of architects have a good time before us, and it behoves us to rise to the occasion, and endeavour to inaugurate a new renaissance in Architecture, not only in purely architectural features, in new methods of construction, in the use of new materials, and a better knowledge of the old ones, but particularly in our ideals of space and order. So we may foster the growing

## Imagination of Our Clients,

and lead them on to yet higher ideals, yet nobler efforts. In that day the architect may be honoured in the land, and always get his name mentioned (and spelt correctly) in the daily papers when they describe a building. I need not dwell upon the necessity of directness and simplicity of planning in public buildings. I remember, many years ago, hearing Mr. Aston Webb say, in effect, that one of the charms of domestic planning was what he described as "mystery"; and when we call to mind the rambling arrangement of some delightful old houses known to us all, we must agree with him. The very reverse obtains in the case of public buildings. The simpler and more direct our plans, and the greater the

## Proportion Between the Rooms

and passages, the better. These and many other rules are common to all buildings for public use, and it is my purpose now to apply them, especially to baths. To do so more effectively, I have thought it well to try and realise what one would do with a fairly unrestricted site for a moderate-sized establishment. Mr. Tiltman foreshadowed a different classification and distribution of baths in the near future, and his remarks upon this point were by no means the least interesting and suggestive part of his paper. Until these new ideals have been well ventilated, it is impossible to say in what form they will be best adapted to the peculiar conditions of our own country. Let me take you through a suggested model building, pointing out, by the way, the *raison d'être* of the various parts, and the principles I shall draw from it will, I believe, be applic-

able as much to future as to present-day planning. (The author illustrated his remarks by reference to a plan exhibited at the meeting.) It comprises three swimming baths, respectively for first and second-class men and women, and eighty private baths allotted to the two classes and sexes in the proportion laid down in the Public Baths and Washhouses Acts. We will commence with the entrance waiting-hall, which should always be the key to a plan. It is about 30ft. by 20ft., and undivided, entered from the public street by a short and wide vestibule. I have only one entrance, which you will say is unorthodox. So it is; it is usual to have

## At Least Two Entrances,

one for men and another for women. In many baths there are as many as four respectively for first and second men and first and second women. I hope the time is coming—and that soon—when we shall recognise that if it is not necessary to have separate booking-offices and entrances for men and women in libraries, railway stations, and other public buildings, it should not be necessary for public baths. When this is recognised, we shall do away with one of the most hampering restrictions there is in planning these buildings. The hours I have myself spent in endeavouring to design a pay office which should serve four separate entrances, and yet be decently lighted and ventilated, I feel sad to think of. Of course, when there is

## A Public Washhouse

attached to the baths, two entrances at least are absolutely necessary. In such a case I should, if possible, make the second entrance serve also for the second-class women's baths. I believe that ladies find it less objectionable to meet a rough class of men than the same order of women; a working man is much more likely to bear himself chivalrously before a lady than one of her own sex in the same class. The one entrance plan causes in some degree a smallness of the hall and corridor area compared to the size of the building. This result has practically been obtained at the Plaistow Baths, although the entrances are separated. Whatever may be said in favour of

## A Large Entrance Hall

(and I myself would have it of ample size) little can be urged in favour of corridors, especially long and tortuous corridors. They take up room, cost much to build, and more to maintain, clean, and overlook, and, to my mind, show weak planning. On one side of the vestibule is the superintendent's private office, and on the other a staircase to his apartments above. Except in quite small baths it is a mistake not to provide a separate office, in addition to the pay office. The pay office itself should be about 100 to 150 square feet (not larger), and fitted all round with shelving for towels and bathing drawers, &c. In an establishment of this size two pay windows are necessary. It is desirable for many reasons (not the least being that of commanding the entrances, &c., from all parts) that the front and sides should be glazed in the upper panels, with obscured glass to the height of 4ft. from the ground, and above with clear glass. Before leaving this part I may remind you that if you can afford any luxuries in the way of expensive fittings, joinery, pavings, &c., your clients will raise less objection to their use in the entrance hall than elsewhere. Public boards are very human—at least in their weaknesses. The superintendent's office should also always be close to the entrance, as many people come to see him who should not be allowed to pass into the building generally; 150 square feet is quite large enough. On either side of the pay office are lobbies and short corridors—the shorter the better—leading to the swimming and warm baths. The first-class men's swimming bath is placed centrally, with those for second-class men and for women on either side, the warm baths naturally being on the corresponding sides. The provisions of

## The Baths and Washhouses Acts

as to the proportion of numbers between the classes, make it very difficult to preserve symmetry in planning. Now, my reason for

\* A paper read before the Architectural Association on March 3rd, 1899.



being the first-class bath centrally is that in probability it would be convenient to alternate its use for first-class men and first-class women; and this may often be conveniently done, because ladies, I think, prefer to bathe, if at all, in the morning, whilst the men's baths are always filled up in the evening. It is also in a convenient position for use as a water-gymnasium, alternately for men and women. The shorter length of the second men's and women's swimming baths leaves room for the

#### Boiler House and Engine Room,

and the establishment of towel laundry, &c. These are not infrequently placed together, but it is not a necessary arrangement, and is, indeed, undesirable if women are to be employed in the laundry. The subway under the end of the first-class bath affords access to the engine room to the boiler house. If the site permits, these departments may be advantageously placed in the basement, but if we should never make the mistake of depriving them of light and air. A system of drains is almost essential in public baths, and if possible all main pipes for drainage and hot and cold water supply and heating should be fixed along their walls or ceilings, where they can be repaired or renewed without disturbance or injury to the rooms above. I may say that both at Marylebone and Plaistow, and also, Stratford, I have

#### Subways under every part

of the building. The superintendent's apartments will, of course, be placed on an upper floor over the front centre of the building; and one of the most important points to observe is to arrange the approaches so that the damp, warm air, which inevitably hangs about even the best ventilated baths, cannot find its way into the rooms. There are not a few superintendents who can speak feelingly upon this point. A small area or a way out on to a flat is very desirable. It is usual to provide about 100 sq. ft. of room, and they should not be too small. It is not the most enviable existence to live and work all day in the atmosphere of public baths.

#### The Swimming Bath.

The general arrangement of a swimming-bath is so simple and too well-known to need much description. It is invariably a large hall, enclosing a bath, the essential point of which appears to be that it should be as big as circumstances will allow. This is surrounded on all sides by a pathway or platform, as it is called, and a number of dressing-boxes are ranged along each wall. With respect to the bath itself I do not myself advocate a water length than 100ft., and a very good bath for this length is from 30ft. to 35ft. In deciding upon the dimensions of a bath we have to bear in mind that water costs in London above 6d. per 1000 gallons (often much more and seldom less), and if a bath is heated and filled only three times a week, the expense is heavy if the size is greater than need be. Of the three dimensions, the length should place first in importance the length, and next the depth and width. One of the most popular uses of a good bath is for swimming race-course, and as the unit of length in races is always the yard, and the dimensions mostly multiples of 100, it is, I think, acknowledged by swimmers that 100ft. is a convenient length for a racing bath. The lengths go to the 100 yards; twenty and thirty yards are easily measured off. The water depth should vary from 3ft. 6in. to 5in. or 7ft.—in second class baths 3ft. to 4ft. the latter being used far more by boys and grown men. Theoretically, the deepest of the bath should be about 10ft. from one end, because that is where a high diver d, generally speaking, strike the water.

#### The Level of the Water

It should not be less than 12in. below the footway and this level is maintained by the overflow-trough, which it is usual to place along the wall at the deeper end. This overflow has variously contrived with an iron projecting gutter, a series of holes, or a sunk channel hidden by a flush brass or iron grating.

The best form I have seen is that adopted at Shoreditch, which is a large moulded trough, made in long lengths of majolica. For neatness of appearance, and also, I fancy, economy, Mr. Tiltman's white glazed sunk channel is nearly, if not quite, as good. A small modification would improve it. In the most usual form of bath tank, the walls are constructed of cement concrete built battering on the outside, but I prefer brickwork in cement, carefully calculated for strength, and well buttressed.

#### The Bottoms

must always be of cement concrete, and if the foundation is good, 12in. is quite thick enough. Some advocate building the tank entirely separate from the walls of the bath hall to avoid any possible unequal pressure on particular parts, and consequent danger of settlement. But the immense strength necessary for holding the water alone leaves a very ample margin, and, indeed, the additional weights of roof, supports, and floors help the stability. It is, of course, of enormous importance to have the tank absolutely water-tight, and this can be obtained by two or three methods. One of the most usual, I believe, is to have a lining of asphalt behind the brick or tile facing; and in that construction it is very necessary to

#### Use only the Best Asphalt,

and to have it applied in two layers. I do not think asphalt—vertical asphalt—is exactly a good surface for fixing tiles to, and that is no doubt why so many baths—even that fine one at Shoreditch—are lined with glazed bricks. Six-inch glazed tiles are surely preferable for appearance alone, and the introduction of coloured slips and painted tiles give us a field for decorative effect. A safe backing is obtained with two layers of plain flat tiles laid to break joint, and alternated with renderings in cement. This, together with the tile face, makes an absolutely impervious facing 3in. thick; and I may add that I have never found the slightest leakage. In forming the platform round a bath we have to bear in mind that it can never be kept dry, and splashing and the wet feet of bathers, combined with mud from the boots of new comers before undressing, would soon

#### Render the Footways Dirty,

slippery, and dangerous, unless they are frequently washed down with buckets of water and run over with the squeegee. They must, of course, be laid to a good fall away from the bath, not towards it, if only to prevent fouling the bath water. A gutter running down in front of the dressing boxes will lead off the washings. There are more baths than one in London in which this gutter is placed at the back of the dressing boxes, with unpleasant consequences to the unwary bather who may happen to drop any article of clothing on the floor. To avoid this entirely I find it better to raise the dressing box floors above the platform level, the floor sloping outwards to the channel. A good curb—indeed, the best—round the bath is formed with slate 3in. or 4in. thick, and if this overhangs the bath a few inches, a wider footway can be obtained at a very small comparative cost. It also prevents the bath water from splashing over the footways. The gutter may be covered with a brass grating, but that is not absolutely necessary. Footways are usually paved with impervious material, wood and York stone have been advocated, because they are essentially non-slippery—a matter of great importance. Bathers do not always walk sedately along the footways (in fact, from my observations, the sedateness and dignity and statuesqueness affected by bathers are generally washed off in the first plunge), and running along an impervious surface covered with a film of water is dangerous. But it is a pity if we must come down to York paving, with its monotonous colour and cold surface.

#### Tiles Laid Herring-Bone

and in small pieces do very well; and there is another flooring which I will not recommend you till I have tried it, but which I think will be better still. Before we leave the bath itself, mention must be made of the safety rails,

which should run round at least 4in. above the water level. At the deep end the overflow trough serves the same purpose. At the shallow end there should be a spray-rail; that is, a hollow rail, pierced with a line of small holes, and connected with a high-pressure water-main. When the water is turned on occasionally, a regular and even spray is directed on to the surface of the water, which has the effect of cleansing it of scum and floating matter, which are driven down to the overflow trough. I must only briefly mention the desirability of

#### Marking Along the Sides

of the baths, in plain figures, not only the various depths, but distance in yards from the deep end, and other devices to aid in swimming contests; also the necessity of diving-boards, step-ladders, and water-chutes—the latter not being an unmixed blessing. All these matters have their importance, but a short visit to any modern bath will supply all such information. Dressing boxes are always placed along the two long sides of the bath hall, and sometimes one end or both as well. Even so, it is impossible to get enough of them in comparison to the size of the bath. At Marylebone we have some short "transepts," so to speak, with boxes on each side, but I do not like the idea. Dressing boxes out of sight are always liable to be rifled. Want of adequate

#### Dressing-box Accommodation

must be met by some drastic alteration, and I have a glimmering notion or two of some such innovation. To meet this difficulty at the Hornsey-road baths, the dressing-boxes are placed in a separate room adjoining the bath; but the same objection holds even to a greater extent than with respect to transepts. A gallery is only necessary in the first-class or racing bath, and need not be more than 6ft. or 7ft. wide, unless we can afford such a one as that at the Shoreditch Baths. It is advisable to have at least two staircases from the platform level. I do not propose to dilate here upon the various matters necessary to fit the bath hall for use as a concert-room, or for other public entertainments, further than to suggest that if we study

#### The County Council Regulations,

and then satisfy the Council's surveyor, nothing much is left to be done; but it is vital to bear in mind that these regulations have most important bearings on the planning, and should, therefore, be studied from the very first. Dressing boxes for a first-class bath should not, if possible, have less than 12 sq. ft. of area (or, say, 3ft. 6in. square), although it is possible to do with as little as 9ft. They may, and I think should, be constructed with wood-framed sides and doors well painted with enamel paint and varnished. If we take care to keep the partitions well off the floor, there is no reason why they should rot. Of course the use of oak or teak is an improvement, but even then I would have it well varnished or lacquered. When a bath is used for entertainments the boxes are of no use, and the room they occupy is much wanted. To meet this an ingenious arrangement has been lately patented, which, although capable of some improvement in construction, enables us to fold the sides, doors, and seats neatly and very quickly flat against the walls, where they form a fine panelled dado. They can be seen at the Shoreditch Baths. With every swimming bath there should be what is called a soap and spray bath, which may be just one of the dressing boxes fitted up with a foot-bath sunk in the floor, with hot and cold water shower over. Spray and douche arrangements may be added with advantage. Indeed, it is an advantage to elaborate and enlarge this provision.

(To be continued.)

The Middlesbrough Co-operative Society have just erected premises, known as the Victoria Buildings. These buildings cover an area of 6573 square feet. The architect is Councillor Walter G. Roberts, of 61, Albert Road, Middlesbrough.



## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,

March 8th, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### A Cromwell Memorial.

It seems strange that Huntingdon, where Oliver Cromwell was born, has hitherto had no memorial to the greatest of her sons. The omission is to be rectified this year—the tercentenary of the great Protector's birth—by the erection of a statue, for which public subscriptions are to be invited. Various other schemes had been suggested, but at a large and representative town's meeting held last Thursday the statue was unanimously agreed upon.

### An Influential Protest.

ALL the efforts that have been made to restrain the London County Council from carrying out the almost universally condemned design for the new Vauxhall Bridge, which was prepared by their engineer, have hitherto proved unsuccessful. An appeal is now being made to public opinion, and a very influentially signed letter on the subject appeared in last Monday's "Times." The letter points out the inartistic character of the design, which it rightly attributes to the want of collaboration between the architect and the engineer. The sting of the letter is in its tail, where it is hinted that should the Council prove recalcitrant, the ratepayers of London might be induced, through their representatives in Parliament to take from the Council the power of spending the public money on costly structures which reflect no credit on contemporary architecture. The signatories to the letter include the presidents of the Royal Academy, Royal Institute of British Architects, Architectural Association, and Royal Institution of British Artists, as well as a number of other architects and artists of the highest eminence.

### An Ancient Edinburgh Firm.

MEMBERS of the Edinburgh Architectural Association paid a visit last Saturday week to the Milton House Works, Abbeyhill, belonging to Messrs. James Milne and Son, Limited. These works, which cover from 2½ to 3 acres of ground, provide employment for between 700 and 800 workers; they comprise an engineering department, in which malting and papermaking machinery is largely made; water fittings shop, casting shop, gas fittings shop, smiths' shops, and gas apparatus shops. These departments were each visited by parties under the leadership of Messrs. Milne, Lumsden, and Macfie, managing directors. Among particular pieces of work seen in course of construction were a lighthouse for Flannan Head, in the West of Scotland; malting machines, which have been introduced to replace the more common malting floors; a large station gas meter for Perth; an apparatus for the Prince of Monaco, which is designed to take the temperature of the sea at any depth; a large driving wheel, in sections, for a papermill, the delivery of which had been thus belated as a consequence of the engineers' strike two years ago; and many excellent specimens of wrought-iron. There

was also seen an internal combustion engine, which, when perfectly adjusted and introduced into steam vessels, is expected to obviate the necessity of boilers, &c., being carried, and greatly economise the cost of driving ships. It was stated by Mr. Macfie that the Messrs. Milne held authentic records of their existence as a firm in Edinburgh "as candlestickers, &c.," for some 150 years. Their present managing director was the fifth Milne in succession connected with the business, while his forbears were the Milnes, the royal masons and architects of the Stuart period.

### Riddlesworth, Norfolk.

THE fine old mansion known as Riddlesworth Hall, dating from 1780, which on February 10th was the scene of a most destructive fire (little being left beyond the bare walls), will, we understand, shortly be rebuilt. The hall is the seat of Mr. W. N. L. Champion, and the rebuilding will be carried out from designs of Mr. Herbert Green, of Norwich. The building is covered by insurance to the extent of £20,000.

### A Village Memorial.

LLANSANNAN is not exactly a household word with most of us. It is the name of a picturesquely situated Welsh village which is just now setting an example of artistic enterprise which many more pretentious places might well emulate. Llansannan has determined to commemorate by a bronze monument five eminent Welshmen who were natives of the parish, viz.: Tudur Aled, a famous bard, who flourished in the sixteenth century; William Salisbury, the translator of the Welsh Bible; Iorwerth Glan Aled, another celebrated poet; and the Revs. Henry and William Rees, famous Welsh divines and preachers. The commission for the work has been entrusted to Mr. Goscombe John, A.R.A., who is himself a Welshman, and it is expected that the monument will be unveiled on Whit Monday.

### Aldersgate's Parish Church.

THE Vestry of St. Botolph, Aldersgate, has accepted the generous offer of Mr. G. F. Watts, R.A., to erect in connection with the churchyard a covered way, in which will be placed tablets commemorating acts of heroism in everyday life. The suggestion was made by Mr. Watts, as long ago as 1887, that something of this sort should be done as a suitable way of commemorating the Queen's Jubilee. But, though many foolish suggestions were adopted at the time, this eminently sensible one was overlooked. The extension of the churchyard in Aldersgate Street has provided the opportunity for the revival of the idea, and Mr. Watts has undertaken to defray the necessary expenses. Another valuable gift has just been made to St. Botolph's Church, viz., three pictures by Mr. Sigismund Goetze, which it is proposed to affix into the panels over the Communion table. The largest of the pictures, which are presented by the artist, represents a figure of the Dead Christ, with angels at the head and feet, and was exhibited last year in the Royal Academy under the title of "Eloquent Silence." The other paintings represent the motto "Watch and Pray," the one being a mailed figure with sword unsheathed, and the other a female form in the attitude of prayer.

### Disappearing London.

ONE by one London seems to be losing all its old houses of literary and antiquarian interest. Within the past few weeks we have heard of the impending destruction of two houses that were at one time occupied by Dr. Johnson. The one is the house in Johnson Court, at the back of Anderton's Hotel in Fleet Street; the other is Priory Lodge at Hampstead. The latter was the doctor's country residence, for Hampstead then, of course, was a locality "far from the madding crowd." It is a picturesque old house, though it has been altered considerably since Johnson's day. Another house of some antiquarian interest that is in process of demolition is the Stag Tavern in Castle Lane, Westminster.

The tavern is interesting for its association with a very different kind of person, to wit, Dick Turpin, who was wont to favour it with his custom. It had a finely-carved canopy over the doorway. Yet another building of historic interest that will shortly be pulled down is the Independent Chapel in Fetter Lane. The chapel was established in 1660, and the existing building dates from 1732.

### London Improvements.

THE London County Council Bill giving powers for the construction of a new street between Holborn and the Strand was read a second time in the House of Commons last Tuesday week. There was no opposition to the bill, though Sir Henry Fowler protested against what he regarded as the County Council's undue delay in effecting the removal of the Holywell Street "island" in the Strand. On behalf of the Council, it was pointed out that the widening of the Strand by the removal of the Holywell Street island would add considerably to the value of the circumjacent properties required for the new street, unless powers were sought in the present session, so that they might be obtained before the removal of the Holywell Street island. It is, therefore, with a view to saving the ratepayers' money that the Strand improvement is being delayed for a few months. In the course of the discussion Mr. Burns foreshadowed still further improvements to be accomplished in the future. What the London County Council wanted was a big street from Euston Station, through Holborn, to the Strand, the removal of the Strand island, and, probably, ten years hence, another bridge east of Somerset House.

### A find at Hampton Court.

An interesting discovery has just been made at Hampton Court Palace. While a number of pictures were being removed from the walls, occasion was also taken to strip off the canvas and paper covering the former ornamentation of the walls. It was then seen that three sides of the room, which measures 41ft. by 34ft., were covered with rich paintings, all in an excellent state of preservation but for the disfigurement of holes caused by the nails which had been driven into the walls on which to hang the pictures. The ceiling of the room is painted by the celebrated artist Verro, Queen Anne being represented as Justice with Neptune and Britannia holding a crown over her head, and various allegorical figures being grouped around. The paintings on the walls are by the same artist. Orders have been given for the holes in the walls to be filled in carefully, and when this has been done the services of one or more skilled artists will be requisitioned to repair the damage, and, as far as possible, to restore the paintings to their original condition. It is stated that the paintings have been covered in this way for more than 100 years.

### Electric Tramways in New York.

Now that so many municipalities throughout the kingdom are considering the question of the best system of street traction to adopt, it is interesting to note the experience of some of the American cities where electric traction in one form or other has long been established. We find from the New York papers just to hand that in the blizzard experienced a few weeks ago the electric system by conduit, which is superseding the cable cars in that city, completely broke down. The reason for the failure is said to be the impossibility of establishing a steady circuit between the source of powers and the mechanism on the cars when ice accumulates on the conductor rail in the conduit or on the rail in the street. The accumulated ice completes the circuit between the negative and positive poles in the conduit itself, the electric current cannot pass through the mechanism of the car, and the car stops. The New York "Mail and Express" speaks of compressed air as the "coming power" that is to supersede both cable and electric cars in New York.



## Professional Practice.

**Aberdeen.**—It is proposed by the Aberdeen School Board to convert the Central School, Aberdeen, into a higher-grade (science) school, providing, in addition to other things, instruction of a commercial or scientific kind for pupils preparing to begin a trade or enter some line of business. In that view, plans have been prepared by the Board's architect and master of works, Mr. J. A. Ogg Allen. The plans show the building with a frontage to School hill of nearly 120ft., going back into the site towards the present Central School buildings nearly an equal distance. The building will be higher than any of the buildings in the immediate vicinity, being 70ft. in height to the apex of the roof, beyond which there will be a small central turret that accentuates the impression of height, and lives at the same time a pleasing finish to the design. The building is to be four stories high, and is to be built of light grey granite. In arranging the interior the architect has taken the fullest advantage of the space for the provision of class-rooms, of which about eighty of one kind or another will be provided. The total cost of the new building is estimated at £17,000.—The Plans Committee of the Town Council have sanctioned the following plans:—Additions in connection with premises on the south side of Queen Street, for Mr. William Coutts, aerated water manufacturer, per Mr. William Ruxton, advocate; dwelling-house on the west side of Fraser Road, for Messrs. George Fordyce and Co., builders, per Messrs. Brown and Watt, architects; stable and coach-house at the rear of dwelling-house on the west side of Forest Avenue, for Mr. J. Conno, jun., furniture dealer, per Mr. Alexander Matheson, builder; dwelling-house on the east side of King Street, north of Ladymill, per Mr. J. B. Cairns, hide and tallow merchant, per Mr. John Rust, architect; stable on the east side of Stell Road, for the Northern Cooperative Company Limited, per Mr. Alexander Taylor, architect; three dwelling-houses on the east side of King Street, for Mr. Andrew Wallace, butcher, per Messrs. Brown and Watt, architects (amended plan). The Committee had also before them plans of two dwelling-houses on the north side of Devonshire Road, for Mr. W. S. Lunan, bank teller, and the executive of the Independent Order of Rechabites, per Mr. George F. Milne, architect. The Committee approved of this plan on condition that the height of the water mains is to be fixed by the Burgh Surveyor.

**Bridlington.**—The foundation stone of the Yorkshire Foresters' Orphanage and Conalescent Home, was laid on Feb. 23rd, by Bro. R. S. Kirk, of Leeds, and several memorial stones were laid by representatives of the various courts and districts of Yorkshire. The building is being erected by Messrs. F. Blackburn and Son, of Hull, and the architect is Mr. Robt. J. Beale, A.R.I.B.A., of 9, Victoria Street, Westminster, whose design was selected in competition.

**Dundee.**—The following plans of proposed new buildings, &c., in Dundee, lodged by William Mackison, F.R.I.B.A., Burgh Engineer, have been approved by the Works Committee of the Town Council:—Ash Lane and Loches Road, dwelling-house and shed, per Joseph Clark; High Street, alteration on property for the trustees of Patrick Watson; North George Street and Union Street, weaving shed for J. and A. D. Grimond Limited; Annadice Street, alteration on property for William Adamson; Westfield Avenue, alteration on dwelling-house for the Dundee and District Tramway Company Limited; Kemick Street and M'Gill Street, alteration on dwelling-houses for A. E. Tulloch.

**Horncastle.**—An octagonal Gothic structure 14ft. in height, and 7ft. in diameter standing on a platform of steps, has been lately un-

veiled in the town of Horncastle. It has been erected by public subscription in memory of the Right Hon. Edward Stanhope, M.P., late Secretary of State for the War Department, and contains a bronze medallion likeness; it consists of three stages, the lower one being solid of Monks Park stone with diaper panels between polished red granite shafts, and crocketed pediments above, the middle stage is an open arcading consisting of polished red granite columns with carved Monks Park caps and a double set of trefoiled work above, the third stage consisting of a lantern covered with lead, supported by gun-metal shafts and finished by an ornamental finial of the same material. The design was selected in open competition out of about 70 responses and is the work of Mr. E. H. Lingen Barker, of London and Hereford, the Contractors being Messrs. Walter and Hensman, of Horncastle, and the Sculptor Mr. C. J. W. Ladds of West Veal.

**Hull.**—The memorial stone of the new premises which are being erected for the Hull Constitutional Club was laid last Wednesday. The site of the new club is a central one, in Carr Lane, one of the outlets westward from the centre of the city. The new building is to cost nearly £5500, and the furniture it is estimated will cost £2000. Mr. B. S. Jacobs, of Hull, is the architect, and he has designed the structure in free Renaissance style, the front elevation being faced with Ruabon bricks, and buff terra cotta of Burmantofts manufacture for dressing cornices and strings. The accommodation comprises, on the ground floor, a large hall 43ft. by 19ft., and separated by movable partitions from a reading-room. On the other side are the steward's rooms, lavatories, &c., and the main staircase. At a slightly higher level and further back is the billiard-room for three tables, and on this floor are the female servants' quarters. On the first floor to the front is the dining-room, 43ft. by 20ft.; a cardroom, serving-rooms, lavatories, &c. On the second floor are the boardroom, smaller dining-room, secretary's room, and one or two bedrooms, bathroom, &c. On the third floor there are bedrooms for members, steward's quarters, and men servants' dormitories, with bathrooms. The basement contains kitchens, sculleries, wine, beer, and coal cellars, waiters' and female servants' sitting-rooms, steward's workrooms, heating chambers, and the usual outbuildings, and a large bicycle room. The main hall and staircase are to be furnished in oak. Messrs. E. Good and Sons Limited, are the contractors.

**Hyde.**—The New Technical School and Free Library has just been opened. The building is calculated to provide accommodation for about 900 students, and has cost nearly £13,000. The erection of the works has been in the hands of Messrs. S. Robinson and Son, contractor, of Hyde, from the designs and under the supervision of Messrs. Woodhouse and Willoughby, F.S.R.I.B.A., architects, of Manchester and Stockport, assisted by the clerk of works, Mr. Samuel Mellor. The design was selected in a limited competition of architects, who have given this kind of work special study, and on the advice of the assessor chosen by the committee, viz., Mr. Thomas Worthington, F.R.I.B.A., of Manchester. The style of the building is a free treatment of the English Renaissance. The building is divided into two sections, a Public Free Library in the one, and a Science, Art, and Technical School in the other. The principal elevations are faced with machine-made red Ruabon bricks, having all designs and enriched work carried out in Doulton's Rowley Regis "Biscuit Coloured" terra cotta. The whole of the roofs are covered with Westmoreland "Sea Green" slates, finishing at the apex with a red Ruabon ridge tile. The building is provided throughout with electric light, installed by Messrs. Laidlaw, Scholes, and Co., Temple Street, Manchester. The engine for electric light has been supplied by Messrs. Crossley Bros., Manchester; the dynamo by Messrs. Stanley, Davies, and Pollard, of Hyde. The painting and decorating

has been carried out by Mr. William Artingstoll, of Hyde; the library fittings supplied by Messrs. S. and J. Turner, of Hyde; the bookcases by Mr. W. W. Batty, Hyde; and the heating apparatus by Messrs. Hartley and Aspinall Limited, Hyde. The fitting-up of the technical school has been in the hands of the Bennett Furnishing Company, of Glasgow, London, and Canada.

**Romford.**—The new casual wards at Romford Workhouse were opened last Tuesday week. Mr. E. G. Boden is the architect. The new wards comprise a fine range of buildings about 40ft. by 70ft. They consist of two floors and basement, on which are day and sleeping cells, lavatories, and bathroom. The cells communicate with the attendant's room by means of an electric bell. On the first floor there is also an associated ward, in which movable hammocks are fitted, to be used in emergency cases. This is also to be used as a day or working room for light labour, or, if necessary, as a dining-room. The buildings are warmed with hot water. The work has been carried out by Messrs. Downing and Davis, of Romford, at a cost of about £3000.

**Southsea.**—Operations in connection with the erection of fine new premises for the National Provincial Bank of England have been commenced on the site at the corner of Palmerston Road and Clarendon Road, where the old bank and some houses stood. The frontage to Palmerston Road will be 40ft., and to Clarendon Road 70ft. The elevation will be carried up with granite to the window sills of the ground floor, above which, up to the first floor windows, will be of Portland stone, with carved caps and double block columns, while the upper part will be in Holwill's impervious ware, brick facings, with Portland stone dressings, the whole to be surmounted with a heavy and rich cornice. The offices will include a large banking hall, with entrance at the corner of Palmerston and Clarendon Roads, manager's room, waiting room, and three strong rooms. The manager's private residence will be at the further end of the building in Clarendon Road, and here will be provided every accommodation, with kitchen at the top of the commodious house. The air space at the back of the building will permit of ample light. The foundations are now being prepared, and the buildings will be proceeded with as rapidly as possible by Mr. Light, the contractor, in accordance with plans prepared by the architect, Mr. W. W. Gwyther, F.R.I.B.A., 26, Bedford Row, London, W.C. The clerk of works is Mr. H. F. Sheppard.

**Whitwell.**—At Worksop County Court Augustus George Taylor, architect and surveyor, of New Brighton, formerly of Whitwell, Derbyshire, sued Mr. S. Clarke, of Worksop, and others, trustees of the Free Methodist chapel, Whitwell, for £32 10s., for preparing a plan of a proposed new chapel at Whitwell, and drawing up a bill of quantities for the same. Plaintiff alleged that he was ordered by the trustees to prepare the plan produced. He estimated the cost of the building at £1300, and for preparing the plan he had charged one per cent. He was also ordered by the trustees to prepare a bill of quantities required, and for this work he had charged one and a half per cent. on the estimated cost of the building, or £19 10s., making in all £32 10s. He considered the charge perfectly reasonable. For the defence it was alleged that plaintiff had informed the trustees that he would prepare an estimate of the cost of the proposed building for a very small sum, that the charge made was most extortionate, that the plan was practically useless and unworkable, being entirely without specifications, whilst the bill of quantities prepared was only a rough sketch of what would be required.—His Honour considered it a very fortunate thing that the trustees had not attempted to build with plaintiff's plan, and he considered that the defendants had behaved handsomely in the matter in paying £20 into court. There would be judgment for defendants with costs.



## Under Discussion.

### THE ARCHITECTURAL ASSOCIATION.

A largely attended meeting of this association took place at 9, Conduit Street, W., last Friday night, at 7.30 p.m., with the President, Mr. G. H. Fellowes Prynne, F.R.I.B.A., in the chair. The minutes of the previous meeting were read and confirmed, and the following gentlemen were elected members of the association:—N. B. Fairweather, C. F. Houston, and G. Gilbert Scott. It was then announced that a meeting will be held at 56, Great Marlborough Street, W., next Friday evening, at 7.30 p.m., of members desirous of re-establishing the A.A. Cycling Club, and to draw up rules, appoint officers, arrange runs, &c. A vote of thanks was awarded to Mr. J. F. Bentley, for permitting members of the Association to visit the Roman Catholic Cathedral at Westminster. The next spring visit of the Association was announced to take place on Saturday, March 11th, when, at 2.30 p.m., Colonel Edis will conduct members over the Great Central Hotel, Marylebone Road. At 3.30 p.m., Mr. E. Wragge, resident engineer, will conduct a visit to the Great Central Railway Station adjoining. Mr. A. Saxon Snell, F.R.I.B.A., then read his paper on "Public Baths," which was followed by an interesting discussion, and he was awarded a hearty vote of thanks. The first part of this paper will be found on page 74 of this issue. The president announced that the next meeting will take place on March 17th, when Mr. Reginald T. Blomfield will read a paper on "Reflections on the Early Renaissance."

### REMBRANDT AND BURNE-JONES.

Mr. Croal Thomson, editor of the "Art Journal," recently delivered a lecture to the Highgate Literary Association, in the Presbyterian Hall, Highgate, on "Rembrandt and Burne-Jones—a contrast and a comparison." The lecture was illustrated by a large series of drawings, etchings, and reproductions of these artists' work. Mr. Croal Thomson said he had sought an opportunity to speak on Rembrandt and Burne-Jones, because in his opinion Rembrandt was the greatest painter among the Old Masters, in what may be termed the non-classical school, while Burne-Jones, although he can be said to be in every way supreme, was one of the greatest of the modern exponents of classical themes. Rembrandt was dignified, sincere, masterly, and intensely human. His understanding of his fellow-creatures was beyond adequate interpretation in words; his masterfulness in execution was greater than that of any other artist, not excepting Frans, Hals, and Velasquez. His dignity was equal to that of Michael Angelo, and his sincerity was unsurpassed by the single-number painters who flourished before the time of Raphael. It might be admitted that the subjects of Rembrandt's pictures appealed more to the eye than to the mind. The subject with him was little, the manner of work, the quality of colour, and the grandeur and simplicity of style being everything. On the other hand, Burne-Jones in his subjects conquered the intellect by learning, by classic story, and familiar legend. With him the intention counted for a great deal, and in some cases practically everything. In taking these two artists for a comparison and contrast, the comparison lay most in their devotion to work and in their achievements, while the contrast was that Rembrandt, certainly by far the greater master of the two, was a Goth in almost all his productions, and Burne-Jones, to the finger tips, was imbued with classic feeling. After briefly sketching the careers of the artists, the lecturer spoke of Burne-Jones's connection with the Royal Academy, which, in a fit of expansiveness, speedily regretted, elected him an Associate in 1885. This body, so genial in its single items, but so solemnly inert in the bulk, refused to advance Burne-Jones to full honours, so after, as he expressed it, waiting on the doorstep for fully seven years, he withdrew

from the Academy and amiably shook its dust from off his feet. In 1893 Mr. Gladstone, ever with a soft side to Art and artists, offered him a baronetcy, and thus the artist was as greatly distinguished in the eyes of the world as any of the Academy. The great objection to Burne-Jones's works had been that the artist's ideal of women was the effeminate rather than the physically strong. Many people, and it was accentuated by the somewhat foolish admiration for physical strength now prevalent, considered that Burne-Jones had lost much in his tendency to be feminine. They resented the idea that a woman may be refined, lovable, and intelligent without being plainly robust. The ultimate reputation of Burne-Jones could not be definitely stated. But the lecturer had no hesitation in giving it as his opinion that the longer his work was known the better it would be liked, until future generations would regard him with the veneration we willingly accord to the Italian masters of the fifteenth and sixteenth centuries. Concluding with a consideration of the Rembrandts now at the Academy, Mr. Croal Thomson said the Amsterdam collection last autumn had been a challenge to English collectors, and nobly had those who were owners of Rembrandts responded to it. For once the Academy more than justified its name of Royal; the nobility and majesty of those great Rembrandts made it worthy of something even stronger, and "Imperial" Academy would not for the time be too highly-flavoured a term. Rembrandt was a veritable giant amongst painters. Concentrated in his career was an artistic experience equal to that of a score of other artists, and the intellectual and æsthetic delight in following such a master's development could not be over-estimated. The pleasures of the mind and eye exercised in their consideration would in time become the property of everyone who had the intellect and education to wish to enter into the best inheritance of the ages.

### LEGAL POINTS AFFECTING ARCHITECTS.

On the evening of the 15th ult., Mr. J. Connell, lectured before the Edinburgh Architectural Society, on "Legal Points Affecting Architects." Mr. A. Lorne Campbell, the president, occupied the chair. After alluding to the Dean of Guild Court procedure, and the rights of neighbours, the delicate subject of remuneration and fees was discussed. Mr. Connell's advice was always to have a stamped contract with the clients especially if dealing with a company. On the ownership of plans question Mr. Connell pronounced in favour of the client. The position of the architect as agent for the client was then gone into, and the liability of the architect for breaches of contract and accident commented on. The completion of works and penalty clauses of contracts were then discussed, the lecturer explaining that the penalty clause can only be acted on so far as expense is incurred by the breach of contract. Burdens on land were next gone into, and the remainder of the lecture was devoted to a discussion of the somewhat intricate laws, affecting restorations, alterations, and additions. Mr. Connell explained that the law was interpreted to give as much freedom as possible. Mr. A. R. Scott proposed the vote of thanks which was heartily accorded.

### GLASGOW ARCHITECTURAL ASSOCIATION.

At the last fortnightly meeting, held in the Rooms, 187, Pitt Street, Mr. Wm. J. Anderson, A.R.I.B.A., delivered a lecture, entitled, "Impressions of a Mediterranean Trip," describing—mostly in a light and humorous manner—a cruise by way of Algiers and Malta to Athens, and a return journey by Corfu, Naples, Nice, and the Loire district of France for purposes of architectural study. Among impressions of the tour which he indicated were, the feeling that good design and largeness of conception had been evinced in the planning and extension of most Continental cities, while they were almost wholly absent from ours, and that there existed an aspiration for something beyond the fulfilment of mere material necessities in their

public buildings. This was to be attributed, especially in the case of France, which in such matters led the Continent, to the steady influence of sound traditions of architectural education, which in permeating society with the understanding and the love of art, fostered the desire as well as provided the talent for its realisation. More particularly have we to learn the lesson in so-called engineering works such as bridges, railway stations, markets, &c., which in France are often among the most successful works of its brilliant school of architects. No question of art was at all comparable to the need for the improvement of our cities in these respects, and for skilled control of the development of their plan. In an Anglo-Saxon community it would almost seem as if the provision for animal necessities was sufficient, and that to aspire in our handiwork after anything nobler than the aims of the bird and beaver was to be hopelessly Utopian and unpractical. Concluding, the lecturer urged the claims of a more extended historical study of architecture, not for practical reasons only but as examples of the higher manifestations of nature, reaching us through the human spirit whose path in relation to every essential matter of progress was marked by its monuments. Mr. W. H. McNab moved a vote of thanks to the author for his very able paper, which was heartily accorded.

### POLLUTION OF RIVERS.

A conference was held at the Sanitary Institute, Margaret Street, W., on the 14th Feb., to consider the question of river pollution. The chair was taken by Sir Francis Sharp Powell, M.P., who said the condition of the rivers had been a discredit and almost a scandal to the country at large, resulting in great injury to the public health. Dr. C. Childs moved a resolution calling for free access to land and premises by local authorities for the purpose of water inspection, and advising regular examinations. Dr. Sargeant seconded the resolution. Dr. Willis Bund (Chairman of the Worcester County Council), said that the people who polluted the River Severn were the local authorities. If they expected those authorities to do the work well they would be disappointed. He moved the substitution of "County Councils" for "Sanitary Authorities." Lieut.-Colonel Jones seconded the amendment, and after some discussion, in which Sir John Dorington, M.P., Sir John Hibbert, M.P., and others took part, the motion was agreed to in a form which combined the County Councils with the Sanitary Authorities. Other resolutions were in favour of regular inspection and examination of water applied by the water authorities; the regarding of wilful or negligent pollution as a penal offence; and supporting the Rivers Pollution Prevention Bill now before the House of Commons.

### MUNICIPAL BUILDINGS.

At the conclusion of the paper on "Municipal Buildings," read before the Bristol Society of Architects, by Mr. Arthur Lee, an abstract of which appears on another page, the lecturer referred to the municipal buildings in Glasgow. "Scotchmen," he said, "are proverbially of an economic turn of mind, but they are shrewd as well as cautious, and believe that as was in the past so it is in the present, that an enlightened, intelligent, and prosperous community does well from a purely business point of view to mark its enlightenment, intelligence, and prosperity, by the solid and beautiful character of its public buildings. The municipal buildings recently erected will be one of the most lasting monuments the citizens of Glasgow will leave to tell to future generations the marvellously rapid growth of their city. Thrice during the memory of living men they have erected Municipal Buildings, each adequate for its time, but when it was found in consequence of the rapid growth of the population, the extended boundaries, and the rapid increase in the commerce and material resources of the city, more room was required, the Town Council decided, not of narrow policy of adding to or patching



ir last building, but to acquire a new site the principal square in the city, and there erect a building not only adequate for the present time, but capable of being the seat of the municipal government of the still later Glasgow of the future. May Bristol be a lesson from the careful, wisely-economic city, may her rulers pluck up courage, and make a makeshift policy of patchwork and half-measures, and follow in the footsteps of the surprising men of Glasgow."—The proceedings terminated with a hearty vote of thanks to Mr. Lee, on the motion of the President, seconded by the Vice-President, and supported by Mr. Frank Wills, the latter of whom strongly endorsed the remarks of the lecturer with reference to municipal buildings.

### MANCHESTER GAS ENGINEERS.

The annual meeting of the Manchester District Institution of Gas Engineers was held the 21st February. In the forenoon a visit was paid to the Gaythorn station of the Manchester Corporation Gasworks. Particular attention was devoted to the machinery for conveyance of coke, &c., used in connection with an installation of inclined retorts. From the gasworks the members drove to the Grand Hotel, where luncheon was served, and a meeting was afterwards held in the Masonic room of the transaction of business. The Hon. Secretary (Mr. S. S. Mellor, Northwich) submitted the Committee's annual report, in which it was stated that four successful meetings had been held during the year, and that membership now reached 134. Mr. G. E. Benson was elected senior vice president, Mr. Charles Wood, of the Bradford Corporation Gasworks, junior vice president; Mr. Thomas Newbigging was re-elected treasurer, Mr. Mellor secretary. Thanks were accorded the retiring president, Mr. W. S. Haddock, Warrington, and the other officers for their services during the past year. Mr. Haddock then introduced his successor in the presidential chair, Mr. R. G. Shadbolt, of Grantham, who delivered his inaugural address, in which he discussed the question of gas enrichment and other points connected with the technicalities of gas manufacture. He said that the gas industry was full of life and energy. The Board of Trade returns showed that during the past ten years—the time they ought, according to some prognosticators, to have expired in the process of dissolution—the gas industry had increased their gas sales to the extent of 50 per cent., while the increased profit from gas sales necessary to pay dividend and interest on the extra capital employed during the same period stood at the ridiculously disproportionate figure of 7 per cent. Lancashire and Yorkshire contributed 25 per cent. of the total gas made by the authorised gas undertakings of the country. A discussion afterwards took place on a paper read at a former meeting by Mr. J. H. Brearley, of Longwood Works, on "The Balance Sheet."

### INFLUENCE OF THE ATMOSPHERE.

At a meeting of the architectural section of the Philosophical Society of Glasgow, held on Tuesday 27th, a paper was read by Mr. Oscar Pearson, glass stainer (Roy. Scot. Soc. Arts), the subject of "Atmospheric Influence on Architecture and Decorations." The paper was illustrated by chemical demonstrations and a large number of lantern slides. In the course of his remarks the lecturer pointed out the very offensive and noxious condition of the atmosphere of Glasgow was the result of the free escape of factory smoke and the consequent oxidation of the sulphur in the air into sulphuric acid. The immediate effect of the dissemination of this corrosive virulent compound was observed in the decay of the stone of public buildings and destruction of vegetation, while the free escape of carbon carried over in soot of factory smoke settled on stonework, turned the natural brightness of the material into a dingy and sombre grey, and destroyed the precision, fineness, and quality of the Architecture. Referring to the

action of the atmosphere on decoration, the lecturer pointed out that sulphuric acid and hydric sulphide were the principal factors in the change of colour that took place in certain decorations. It was also suggested that by a due attention to an efficient medium and method of painting the most fugitive colours almost could be rendered permanent. In Mr. Paterson's opinion Glasgow ranked next to London almost in the impurity of its atmosphere, and he held that, however high a position the city might have acquired as an Art centre, there was probably no other town in the kingdom where public buildings and decorations had so uncertain a condition of stability.

### DISCOVERIES IN RHODESIA.

Dr. H. Schlichter read a paper before the Royal Geographical Society on "Travels and Researches in Rhodesia," on Feb. 27th. Dr. Schlichter stated that his investigations led him to the centre of Matabeleland and Mashonaland, by way of Bulawayo and Salisbury to Inyanganga, a place full of unmistakable indications of an ancient civilisation. At Zimbabwe, which he also visited, were to be found a number of direct analogies to the early Israelitish solar and astral worship, of the period before that race had arrived at monotheism. They had in Zimbabwe an enormous gnomon comprising a total angle of 120 deg., and from the obliquity of the ecliptic, taking all the details into consideration, he believed they must attribute the erection of the Zimbabwe buildings to a period about 1100 B.C. The Momo ruins, between Bulawayo and Gwelo, were somewhat smaller than the Zimbabwe temple, but in construction and ornamentation superior to it. They consisted of a number of buildings of which the central corresponded to the circular temple in Zimbabwe, while the others were additional enclosures and fortifications. The Central building was, from an architectural and astronomical point of view, the most interesting ruin south of the equator. In the Momo ruins were to be found indications of (1) solar worship (2) fortifications, and (3) gold production. The Rhodesia ruins were the first discovered traces of old civilisation in the southern hemisphere.

### COMING EVENTS.

#### Wednesday, March 8.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Mr. James Campbell Irons on "The Architectural Antiquities of Leith." 8 p.m.

MANCHESTER MUNICIPAL SCHOOL OF ART LECTURES.—Mr. Hugh Stannus, F.R.I.B.A., on "Storiation in Manchester." 8 p.m.

NORTHERN ARCHITECTURAL ASSOCIATION.—Annual Meeting at 7.30 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Inspection and Demonstration at the L.C.C. Municipal Lodging House, Parkes-street, Drury Lane, at 3 p.m. Conducted by Mr. Frank Ruddle, of Estates and Valuation Department, L.C.C.

SOCIETY OF ARTS.—Mr. J. H. Collins, F.G.S., on "Cornish Mines and Miners." 8 p.m.

LIVERPOOL ENGINEERING SOCIETY.—Paper by Mr. Bryson Cunningham. 8 p.m.

ARCHITECTS' BENEVOLENT SOCIETY.—Annual general meeting of the subscribers and donors will be held in the rooms of the Royal Institute of British Architects. 5 p.m.

SANITARY INSTITUTE.—A discussion to be opened on "The Establishment of Public Abattoirs in the Metropolis in relation to the Prevention of Tuberculosis," by Dr. William Arthur Bond, M.A. 8 p.m.

#### Thursday, March 9.

INSTITUTION OF ELECTRICAL ENGINEERS.—Meeting at 8 p.m.

SOCIETY OF ARTS.—Meeting of Indian Section.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Dr. J. F. J. Sykes, D.Sc., M.D., on "Objects and Methods of Inspection, Nuisances, &c." 8 p.m.

SOCIETY OF ANTIQUARIES.—8.30 p.m.

ROYAL INSTITUTION.—Mr. William Poel on "English Play-houses in the Fifteenth, Sixteenth, and Seventeenth Centuries." I. 8 p.m.

#### Friday, March 10.

INSTITUTION OF CIVIL ENGINEERS.—(Student's Meeting.)—Mr. H. Lapworth on "The Construction of the Elan Aqueduct, Birmingham Waterworks." 8 p.m.

#### Saturday, March 11.

ARCHITECTURAL ASSOCIATION.—Spring visit to the Great Central Railway, Marylebone-road, at 2.30, conducted by Colonel Edis; and the Great Central Railway Station adjoining, at 3.30, conducted by Mr. E. Wragge, resident engineer.

INSTITUTION OF JUNIOR ENGINEERS.—Conversations at Westminster Palace Hotel. Reception at 7 p.m.

ROYAL INSTITUTION.—The Right Hon. Lord Rayleigh on "The Mechanical Properties of Bodies." V. 3 p.m.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Visit to Colinton House, Colinton Castle, and Redhall. Dr. R. Rowand Anderson, Hon. R.S.A. leader.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Inspection and demonstration at Friar Barrow Sewage Works at 3 p.m. Conducted by Mr. E. J. Reynolds, A.M.I.C.E.

#### Monday, March 13.

BRISTOL SOCIETY OF ARCHITECTS.—Mr. George H. Oatley on "Bills of Extras."

SOCIETY OF ARTS.—(Cantor Lectures.)—Mr. Archibald Sharp, A.M.I.C.E., on "Cycle Construction and Design." III. 8 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Dr. Joseph Priestley, B.A., M.D., on "Ventilation, Warming, and Lighting." 8 p.m.

#### Tuesday, March 14.

PERTH ARCHITECTURAL ASSOCIATION.—Mr. William M. Page on "Art." 8 p.m.

SOCIETY OF ARTS.—Meeting of Applied Art Section at 8 p.m.

#### Wednesday, March 15.

MANCHESTER MUNICIPAL SCHOOL OF ART LECTURES.—Sir Thomas Wardle, on "Calico Printing as an Art." 7.30 p.m.

SOCIETY OF ARTS.—Ordinary Meeting at 8 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Inspection and Demonstration of Disinfecting and Filtering Appliances at the Lambeth Disinfecting Station, Wandsworth-road, Loughborough-junction, at 3 p.m. Conducted by Mr. Wolf Defries, B.A., M.I.C.E.

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Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 12 4½	1 12 6
Glue	per cwt.	1 19 6	2 18 6
Lead, white, ground, carbonate per cwt.	0 19 0	—	—
Do. red	per cwt.	0 16 9	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	3 10 0	3 18 0
Do. sticklac	do.	2 2 6	2 15 0
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Lead, pig, Spanish	do.	13 17 6	—
Do. English common brands	do.	14 2 6	—
Do. sheet, English, 6lb. per sq. ft. and upwards	do.	16 10 0	—
Do. pipe	do.	17 5 0	—
Nails, cut, 3in. to 6in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Straits	do.	107 0 0	—
Do. English ingots	do.	110 0 0	111 0 0
Zinc, sheets, English	do.	27 10 0	28 10 0
Do. Vieille Montaigne	do.	31 0 0	—
Do. Spelter	do.	27 10 0	27 15 0

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Deals, Archangel 2nd & 1st per P. Std.	do.	10 15 0	13 0 0
Do. do. 4th & 3rd.	do.	7 0 0	11 0 0
Do. do. unsorted	do.	7 5 0	8 5 0
Do. Riga	do.	8 5 0	9 5 0
Do. Petersburg 1st Yellow	do.	14 0 0	14 15 0
Do. do. 2nd	do.	8 0 0	—
Do. do. Unsorted	do.	8 0 0	9 5 0
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Do. Honduras	do.	0 0 4	9/16
Do. Tobasco	do.	0 0 4½	—
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price		£ s. d.	£ s. d.
for Cargo, Honduras	per ft. sup.	0 0 5 1/8	—
Do. African	do.	0 0 3 11/16	—
Do. St. Domingo	do.	0 0 5 1/16	—
Do. Tobasco	do.	0 0 5 3/32	—
Oak, Dantzic and Memel	per load	8 5 0	3 15 0
Do. Quebec	do.	4 13 6	—
Teak, Rangoon, Planks	do.	8 10 0	13 15 0
Waincot, Riga (Baulk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cu. ft.	0 1 9	0 2 7



## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

**BOURNEMOUTH.**—For the erection of schools, Pokesdown, for British Schools Committee. Mr. Corbin Harris, J.P., architect, Glendale, Pokesdown, Bournemouth:—  
Jenkins and Sons ... £2,337 0  
S. Whittaker ... 2,019 13  
F. Elcock, Pokesdown\* ... 1,490 0

\*Accepted.

**BRENTFORD.**—For the erection of a vestry hall, Half Acre, for the Overseers, Old Brentford. Mr. Nowell Parr, architect:—  
F. & H. F. Higgs ... £8,196  
Brooking ... 7,887  
Godson and Sons ... 7,563  
Foord and Sons ... 7,181  
Young ... 27,027  
T. Nye ... 6,907  
J. Dorey and Co., Bedford\* ... 6,361

\*Accepted.  
Architect's estimate, £7,041.

**CIRENCESTER.**—For the construction of a surface-water drain, for the Urban District Council. Mr. Thomas Hibbert, surveyor, Cirencester. Quantities by surveyor:—  
Hipwell and Co. £4,500 0  
Ambrose ... 3,931 4 10  
William Webb ... 3,896 0 0  
H. Welldon ... 3,749 5 0  
Thomas Free and Sons ... 3,623 16 6  
J. & T. Binas ... £3,561 15 3  
Saunders and Sons, Ltd. ... 3,637 11 6  
Drew Brothers, Cirencester\* ... 3,421 18 0

\*Accepted.

**CRANFORD.**—For alterations and additions to the "Berkeley Arms" Hotel, for Mr. L. Hopkins. Mr. J. Hume, architect and surveyor, Chiswick:—  
Robinson ... £1,470  
Smith ... 1,445  
Keen ... 21,430  
Speechley and Smith\* ... 1,422

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C. Buckridge ... 2,598 0  
W. Satchwell ... 2,680 10  
A. Simpson ... 2,650 0  
H. Channan ... £2,400 0  
Loe and Howard ... 2,350 0  
G. Gray, Egham\* ... 2,127 0

**HASTINGS.**—For the erection of workhouse buildings, Cackle-street, for the Union Guardians. Messrs. Jeffery and Skiller, architects, 5, Havelock-road, Hastings:—  
T. Salter ... £50,674  
J. Lester ... 49,735  
A. H. White ... 49,786  
Pachiam and Hutchin-son ... £47,620  
Peter Jenkins, St. Leonards\* ... 47,500

\*Accepted.

**HERTFORD.**—For pulling down and rebuilding "The Turk's Head," Railway-street. Mr. Percival C. Blow, architect, 7, London-road, St. Albans:—  
Miskin and Son ... £1,285  
Ekins and Co. ... 1,250  
R. Ginn and Son\* ... £1,010

\*Accepted.

**ILFORD.**—For erecting and completing shop premises, Cranbrook-road, Ilford, Essex, for Mr. W. F. Prentiss. Messrs. Verlyck and Dunn, architects:—  
Bruty ... £2,359  
North ... 2,498  
Mitchell ... 2,437  
Shepherd ... 2,381  
Wilmott ... £2,359  
Pridmore ... 2,195  
Gowen ... 1,950

**LEICESTER.**—For the construction of sewers, &c., Coalville, for the Urban District Council. Mr. J. B. Everard, C.E., 6, Millstone-lane, Leicester:—  
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J. Holme ... 26,220 0 0  
G. Bell ... 21,652 0 0  
W. and J. Foster ... 21,546 9 4  
C. Walker & Co. ... 21,178 0 0  
E. Orton ... £20,756 0 0  
E. Tempest ... 20,093 4 2  
J. Ford ... 19,871 17 4  
Bentley and Loch ... 17,969 0 0  
Leicester\* ... 17,969 0 0

\*Accepted.  
Engineer's estimate, £17,870.

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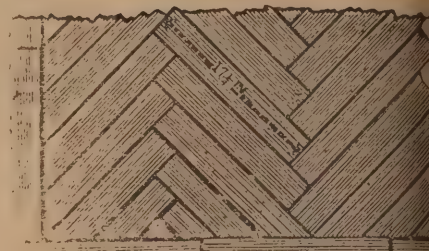
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\*Accepted.

Architect's estimate, £6,893.

ST. ALBANS.—For the erection of Prestwood Cottage, Sandridge-road, for Mr. F. G. Merkins. Mr. Percival C. Blow, A.R.I.B.A., architect, 7, London-road, St. Albans:—

E. Dunham	... ..	£385	Goodchild*	... ..	£281
Bushell	... ..	299			

\*Accepted.

<p>GLAZED, ENAMEL'D and MAJOLICA BRICKS in all COLOURS.</p>	<p><b>J. EDWARDS</b> <b>RUABON.</b></p>	<p><b>TERRA- COTTA WORKS</b></p>	<p>PATENT SMOKE- PREVENT- ING CHIMNEY TOPS, ORNAMEN- TAL AIR- GRIDS.</p>
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**ST. ALBANS.**—For the erection of Drying and Bleaching Works, Grange-street, for Messrs. E. W. Hitchcock and Son, Mr. Percival C. Blow, A.R.I.B.A., architect, 7, London-road, St. Albans:—  
Miskin and Son ... .. £292 | Bushell\* ... .. £265  
Dunham ... .. 975 | \*Accepted.

(Subject to slight alteration).

**ST. ALBANS.**—Repairs to St. John's Lodge, Vernham-road, Mr. Percival C. Blow, A.R.I.B.A., architect, 8, London-road, St. Albans:—  
Miskin and Son ... .. £254 | Bushell\* ... .. £245  
Brightman ... .. 248 |

**WIGSTON MAGNA (Leicester).**—For the erection of residence and stabling, Messrs. Miles and Beasley, architects and surveyors, Friar-lane, Leicester. Quantities by architects:—  
S. Briers ... .. £2,220 | J. O. Jewsbury ... .. £1,984  
Bradshaw Bros. ... .. 2,216 | U. Gurney, Leicester\* 1,934  
J. Wright ... .. 2,100 | \*Accepted.

## CONTRACTS OPEN.

### THE ROYAL NATIONAL EISTEDDFOD OF WALES, 1899.

#### TO BUILDERS AND CONTRACTORS.

The Executive Committee of the above Eisteddfod invite TENDERS for the ERECTION of a TEMPORARY PAVILION in The Cathays Park, Cardiff. The plans may be seen, and copies of the quantities obtained from GEO. THOMAS, F.S.I., Queen's Chambers, Cardiff, after MARCH 6th.

A premium of One Guinea will be charged for the quantities, to be returned on receipt of a bona-fide Tender.

Tenders to reach the undersigned not later than ELEVEN a.m. on MONDAY, MARCH 13th, 1899. The Committee do not bind themselves to accept the lowest or any Tender.

D. W. EVANS, } Hon.  
EVAN OWEN, } Secs.

St. Mary's Chambers, Cardiff.

### TO BUILDERS and CONTRACTORS.

The London County Council is prepared to receive TENDERS for the CONSTRUCTION of a BRICK CULVERT and FLAP-CHAMBER, the REMOVAL of the existing LOCK GATES, and the FIXING of TIDAL FLAPS, together with certain ALTERATIONS and REPAIRS at the King's Scholars' Pond Sewer Pumping Station, Grosvenor-road (near Vauxhall Bridge), Pimlico.

Persons desiring to submit Tenders may inspect the drawings and obtain the specifications, bills of quantities, form of Tender, and other particulars at the Engineer's Department, County Hall, Spring Gardens, S.W., upon payment of the sum of One Pound.

This amount will, after the Council or its Committee has come to a decision upon the Tenders received, but not before, be returned to the tenderer, provided he shall have sent in a bona-fide Tender and not have withdrawn the same.

Tenders must be upon the official forms, and the printed instructions contained therein must be strictly complied with.

The contractors will be bound by the contract to pay to all workmen (except a reasonable number of legally-bound apprentices) employed by them wages at rates not less, and to observe hours of labour not greater, than the rates and hours set out in the Council's list, and such rates of wages and hours of labour will be inserted in and form part of the contract by way of schedule.

Tenders are to be delivered at the County Hall in sealed covers addressed to the Clerk of the London County Council, and marked "Tender for Tidal Flaps and Culverts, King's Scholars' Pond Sewer Pumping Station."

No Tender will be received after TEN a.m. on TUESDAY, MARCH 14th, 1899. Any Tender which does not comply with the printed instructions for Tender may be rejected.

The Council does not bind itself to accept the lowest or any Tender, and it will not accept the Tender of any person or firm who shall on any previous occasion have withdrawn a Tender after the same has been opened,

unless the reasons for the withdrawal were satisfactory to the Council.

C. J. STEWART,  
Spring Gardens, S.W. Clerk of the Council,  
March 1st, 1899.

### TO BUILDERS.

The Guardians of the Poor of the Parish of Giles', Camberwell will, at their meeting, on WEDNESDAY MARCH 15th next, be ready to receive TENDERS for ALTERATIONS to Workhouse Buildings, at Constance-road, East Dulwich, and ADDITIONS thereto.

The drawings, specifications, and draft contract be seen at the offices of the Architects, Messrs. HENRY JARVIS and SONS, 29, Trinity-square, Borough, S.E., on and after the 25th inst., where bills of quantities (prepared by Messrs. FRANK and ANDREWS) can also be obtained on Payment of £5, which will be returned to each person sending in a bona-fide Tender.

The contractor will be required to enter into a bond with two approved sureties, in the sum of £2000.

Tenders, which will only be received on the printed forms, addressed to the Board of Guardians, sealed and endorsed "Tenders for Alterations and Additions Workhouse Buildings, Constance-road," accompanied by the priced bills of quantities, must be delivered before TWELVE noon, on WEDNESDAY, MARCH 15th, 1899, and all persons Tendering, or their authorised representative, to be in attendance at SIX o'clock on the same day.

The contractor whose Tender is accepted will be required to pay his workmen such rates of wages and observe such hours of labour as are recognised by the workmen's Trade Unions, and prior to signing the contract make a declaration to that effect.

The Guardians do bind themselves to accept the lowest or any Tender,

By order,

CHARLES S. STEVENS,  
Guardians' Offices, Clerk to the Guardians,  
No. 29, Peckham-road, S.E.  
February, 24th, 1899.

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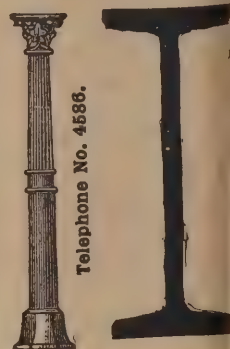
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*See Large Advertisement, Back Page, Monthly.*

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## INSANITARY AREAS AND HOUSING SCHEMES.

BY PETER ADDIE, F.S.I.

(Continued from page xxvii.)

THERE is still some uncleared land unlet in and near Corporation Street, which is at present producing no rental, but it is estimated that this will bring in sooner or later another £1000 per annum. On the other hand, interest on loans, sinking fund charges, and management expenses entail a total outgoing of about £69,000 per annum, which is £16,500 in excess of the present income, viz.:-

	£	£	£
Interest and other charges ...			69,000
Ground Rents ...	41,000		
Less Grammar School Rent charges ...		3000	
		38,000	
Rent of Premises	18,500		
Less outgoings ...		4000	
		14,500	
			52,000
Deficiency ...			£16,500

This deficiency has to be provided from the rates, and since the scheme was initiated in 1876, sums varying from £460 in 1876 to £25,000 in 1891, and £17,000 in 1898-9, and making a total up to the present time of £234,607, have been provided by the ratepayers. The annual contributions from the rates will continue to be reduced every year until the loans are paid off, about forty-four years hence. The undertaking will then be free of charge, and the whole of the net rental income of, say, £53,000 per annum can be carried to the credit of the funds of the city.

Speaking of this income, the Town Clerks say: "This income will be further increased some fifteen years later by the expiration of the leases which are for seventy-five years, and the consequent reversion to the Corporation of the valuable land, with the costly buildings which have been erected thereon in Corporation Street and the adjoining thoroughfares. It is difficult to form even an approximate estimate so far ahead of what this increase will amount to, but if no great change takes place in the value of property in the city during the interval it may be safely assumed that the Corporation will then be in possession of a clear income of over £100,000 per annum from the scheme."

From calculations made by the Town Clerk it appears that if the £100,000 per annum, the ultimate estimated rental, were capitalised at 3 per cent., and the necessary deduction made for the difference in date at which the full benefit accrues, the result would be about £3,000,000, or about the same sum as the contributions from the rates would realise at 3 per cent. compound interest. Mr. Smith says: "The scheme will have, in fact, formed a kind of savings bank for the benefit of posterity, while the sacrifice made by the present ratepayers has had its reward in the street improvements, increased rateable value, vastly improved sanitary condition of the area, involving a greatly decreased death rate, and the impetus that has been given by the construction of the new streets to the trade of the city, and the general circulation of money occasioned by the improvements."

The Town Clerk's paper to which I have alluded was read to the Royal Statistical Society in 1895, and I would refer to it anyone interested in the subject for further information as to the financial aspect of the Birmingham Scheme. I have taken large extracts from the paper, and have to acknowledge my indebtedness to Mr. Smith.

As before mentioned, the Corporation have themselves erected workmen's dwellings upon the area acquired.

They would gladly have allowed private persons to provide suitable dwellings for the working class on the cleared ground, but with the exception of the land on which the sixty-two houses mentioned above were erected, none

was let for the purpose. It was consequently proposed by the Improvement Committee that the Corporation should sanction the expenditure of £5250 on the erection of a block of model dwellings on the flat system, but this proposal was not accepted. Some time afterwards the Council sanctioned the erection of twenty-two through cottages before mentioned at an estimated cost of £4000. These dwellings were at once let to respectable tenants at 5s. 6d. per week. The applications were largely in excess of the number of houses.

Encouraged by the first experiment, the Corporation afterwards embarked on the erection of eighty-one additional artisans' dwellings at a cost of about £14,000. These houses are similar to those previously built, their accommodation consisting of a front living room 13ft. by 12ft. 6in.; front bed room, first floor, 13ft. by 12ft. 6in.; kitchen 12ft. by 9ft.; back bed room 12ft. by 9ft.; and attic 13ft. by 13ft.; a separate w.c. being provided for each family. There is an asphalted or concreted yard common to each block, and washhouses in proportion to the number of dwellings. These houses are let at rents of 6s., 5s. 6d., 6s. per week, and produce a net income of £790 per annum, which, after providing for the interest and sinking fund, is sufficient to pay an average ground rent, spread over seventy-five years, of 10d. per square yard per annum. As I have already mentioned, the Local Government Board always insist on the erection of dwellings for the working classes on the area acquired.

It may be interesting to give a few particulars of the different kinds of dwellings that have come under my notice. The dwellings erected by the Birmingham Corporation in Ryder Street I have already described. In Dublin the Corporation erected five-story flats, dual houses, and one-story cottages. In Liverpool, five and six-story flats, and in Manchester the same course was followed; but in each of these cities huge flats have been abandoned and the dual houses are now in favour. In London the flat system, by reason of scarcity of land, seems imperative. Under the Act of 1890 the Birmingham Corporation have formulated a small scheme for the removal of an insanitary area in Milk Street, the site being near to the centre of the town. The acquisition of the land and of the buildings necessitated an expenditure of about £6000.

Under the Provisional Order the Corporation are required to house 170 persons of the working classes, and for this purpose the City Council have recently adopted plans prepared by my successor, Mr. Tart, on the dual house principle.

The tenements are arranged in four terraces, and comprise twenty-four houses, each containing one living room and one bedroom, and thirty-seven containing more than one bedroom.

The rooms average:-

Living room ...	13ft. 4in. by 14ft.
Bedroom ...	8ft. 2in. by 14ft.
Bedroom ...	9ft. by 9ft.

The small bedroom is designed for children only.

The rents have been fixed at 1s. 6d. per week for living rooms, that is 3s. and 4s. 6d. per dwelling; each tenement will be provided with a separate w.c., scullery accommodation and ash receptacle. The upper story is approached from a balcony, and this design permits each door and window to have the maximum sunlight and air.

The financial aspect of the Milk Street scheme is as follows:-

	£	s.	d.
Estimated cost of building, including paving, &c., is ...	8975	0	0
Road-making ...	146	0	0
Contingencies ...	897	0	0
Land at 5s. per yard (4030 yards) ...	1007	0	0
	£11,025	0	0

The estimated annual statement will be:-

Dr.	£	s.	d.	Cr.	£	s.	d.
Interest and sinking fund on	£11,025	441	0	0	rental	659	2
				Outgoings	219	14	0
	£441	0	0		£439	8	0

The Improvement Committee in their report to the Council state that:-

"The cost of the Milk Street site was £6000. Deducting the £1007 charged to the houses from this sum leaves £4993 to be provided for. The interest and sinking fund will amount to £199, and this annual payment from the rates must be considered as the City's payment for the sanitary improvement thus made."

As municipal representatives are aware, the housing of the working classes is a most difficult problem, and any scheme which is formulated receives considerable opposition. It is difficult to provide for a population of so diverse a character as the working classes. What I may term the respectable element is hampered and weighed down by a number of thriftless and unclean people who abuse any provision which is made for them. Possibly, this difficulty may be removed in the future by universal education, but I am afraid that many years will elapse before the dwellings which municipalities so liberally provide will be appreciated and used to the best advantage.

Part 2 of the Act is utilised at present by local authorities for the purpose of closing isolated houses or groups of houses which are unfit for habitation, because their condition is dangerous or injurious to health.

I am afraid that the operations of authorities are frequently hindered by the reluctance which magistrates sometimes exhibit in making the necessary orders. In many instances the justices appear to disregard the evidence of medical men and surveyors skilled in the subject; and as the authorities have no power to appeal against the magistrate's decision, a great many insanitary dwellings continue to exist. There can be no doubt that this is one of the greatest blots on the Act, and until it is removed no lasting and permanent benefit can ensue. The subject of appeal has, I believe, been discussed by the Municipal Corporations Association at the instance of the Nottingham Corporation, and I sincerely trust that some result may follow their deliberations.

This part of the Act also provides machinery to enable local authorities to purchase houses, in order to open up alleys and courts. If a medical officer finds that any building, although not in itself unfit for habitation, is so situated that by reason of its proximity to, or contact with, any other buildings it stops ventilation, or conduces to other buildings being unfit for habitation, or if it prevents proper measures being carried out to remedy a nuisance which is injurious to health, he may represent such first-mentioned building as an obstructive building, whereupon the local authority may take steps to secure its removal.

It is worthy of note that the local authority will only have to pay compensation for the actual space taken, and will not be obliged to buy the whole of the owner's land, but will only bear the cost of the severance.

Under the third part of the Act the Local Authority is empowered to provide lodging houses or cottages for the working classes. Several municipalities have acted under this part of the Act, viz.:-Manchester, Southampton, Glasgow, &c. It is however, beyond the scope of this paper to discuss the character of the buildings provided.

In conclusion, I can only add that it is a matter of deep regret that many of the houses inhabited by the working class are not in the state of repair they should be, and that infectious diseases claim the majority of their victims from these houses. A wide field is offered in most towns for the application of both Parts I. and II. of the Act, for there is no doubt that as the landlords execute as few repairs as possible, the decay of the property increases year by year, and the classes of tenants thereby degenerate. If the Local Authority do not step in, area after area becomes insanitary. In many of our large towns there exist courts and alleys without number where perpetrators of crime and vice congregate. It is to be earnestly hoped that Municipal Representatives will study closely the provision of the housing of the Working Classes Act, so that these plague spots may be abolished, light and air admitted, and the lives of the working men rendered brighter and happier.



## YOUNG & MARTEN'S DINNER.

THE fifth annual heads of staff dinner of Messrs. Young and Marten, the well-known firm of builders' ironmongers, was held on February 18th, at the Holborn restaurant. Mr. H. Holdich Marten presided, and the vice-chair was occupied by Mr. E. Montague Edwards, the general manager. After the usual loyal toasts Mr. Montague Edwards submitted "The prosperity of the firm, and health of our esteemed chairman." In the course of his speech, Mr. Edwards remarked upon the rapid strides the business had taken during the past year, a result due in large measure, he thought, to the issue of the new general catalogue. Referring to the projected extension of premises at Maryland Point, Mr. Edwards said the scheme had now been adopted, and before they met next year the new warehouse would be completed, and in thorough working order. One of the essentials of success of any firm was promptitude of despatch, and this new warehouse should enable them to execute orders of whatever kind and forward the same day as received. Thanks to the energies of their representatives, and the catalogue just mentioned, their difficulty in the past had been the need of sufficient stock-rooms, but this would now be overcome, and he hoped the travellers would double their returns. In addition to the Point premises, the firm had acquired a large wharf on the Thames at Millwall. It was intended to publish an export catalogue shortly, and he was sure that the response to that, coupled with the increased facilities at their disposal, would bring a satisfactory return this year.

In replying, the Chairman said that Mr. Edwards had placed before them the few chief points of interest in his able remarks, and no one was more competent to speak upon them than he. Two years ago they celebrated the twenty-fifth anniversary of their firm, representing its growth from infancy to manhood, since then he ventured to say that the progress made had been surpassed by few firms in London. The great event last year was the launching of their complete catalogue on the sea of commerce, and the results had fulfilled all expectations; but without the hearty co-operation and the prompt and efficient treatment of the business thus brought, the success would not have been so great. The business of the first month of this year had shown a very considerable increase over the corresponding month of last year, and he felt sure with their assistance this satisfactory state of affairs would continue. In the course of some very eulogistic remarks in regard Mr. E. Montague Edwards, Mr. Marten said he hoped that gentleman would be spared for very many years to fill the proud position which he so justly occupied in the firm of Young and Marten. With regard to the staff, he felt very proud of the body of men who made his interests their own. One of the features of last year's trading was that there was not a single department which had not made an advance upon the preceding year's returns. It was his intention to convert the business this year into a Limited Liability Company, his only object being for family reasons, to define his own interests in the firm and that of an old and valued friend who had been interested in the business for many years. It would not make any difference in the management of the firm, everybody would go on the same as usual. Mr. Edwards would go on in the same position as now, only instead of general manager he would be managing director. It would not make the slightest difference to the welfare of the business, and all he could say in conclusion was, that if in the future as in the past, their heart was in the work, when next they met there would be nothing but success to convey to them. Mr. Marten concluded by proposing the toast of "Our General Manager and the Staff of Young and Marten."

The toast having been drunk with acclamation, Mr. Edwards replied, expressing his sense of the generous treatment the staff had always received from the head of the firm. Mr. Marten had always been ready to distri-

bute a percentage of the profits in salary. Whenever names had been mentioned to him as being worthy, he had invariably responded, and if there was an unselfish man connected with the firm it was their esteemed chairman. Whatever had been achieved he had been a party to it, and to him in a large measure must be the credit.

Mr. Frank Marten proposed "The Dinner Committee," and Mr. J. B. Lupton (head of the Leytonstone Branch) responded.

A well-arranged programme of music was successfully carried out, and altogether the proceedings were of a thoroughly enjoyable character.

## WATER GAS.

THE report of the Departmental Committee on the manufacture and use of water gas has been issued. The report states that in the United States about 70 per cent. of all the illuminating gas supplied was in 1896 carburetted water gas, and the Committee were informed that the distribution of this gas is still increasing rapidly. In Great Britain there is at the present time plant capable of producing 70 or 80 million cubic feet of carburetted water gas per day, and if this plant were worked to its full capacity it would produce about 24 per cent. of all the illuminating gas supplied in Great Britain last year. The Committee say they are satisfied that the advantages which many gas managers see in the gas may well lead to an increase in its use. They draw attention to the "emergency value" of water gas. Where a heavy fog creates a sudden demand for increased output of ordinary gas, the situation can only be met in default of great storage by putting reserve plant into operation. If coal gas retorts alone are available, it will, the Committee say, take two or three days to bring them into action, whereas if there be carburetted water gas plant in reserve, it can be started in a very few hours, and made to produce gas with great rapidity. The Committee deal at length with the danger of the manufacture and use of water gas, and they consider that the unrestricted distribution and use of it would constitute a substantial danger, and they submit that it ought to be prevented without undue restriction. The report mentions that the danger is not confined to accidents. The American figures show that it is being increasingly used for suicidal and even homicidal purposes, and the facility with which murder, particularly child murder, bearing all the appearance of accident, could be committed by simply turning on in a small room a jet of gas containing a large proportion of carbonic oxide, seems to them (the Committee) to afford an additional reason for restricting the use of carburetted water gas. The main suggestions are that it should be illegal for any person to make and distribute any poisonous gas which does not possess a distinct and pungent smell, and that if there be any water gas in a gas supply, the fact should be stated on every demand note.

**Bradford Sewage Problem.**—The Local Government Board held an inquiry at Bradford on March 1st and 2nd into the application of the Corporation for a provisional order empowering them to acquire the Esholt estate of 353 acres for sewage works, the present works at Frizinghall being only capable of treating one-fifth of Bradford's sewage. Under the proposed scheme the sewage would be conveyed by a tunnel 8ft. in diameter and 2½ miles in length to Esholt, with a syphon half a mile long. Fourteen tanks would be erected, each capable of treating 675,000 gallons per day. The Corporation proposes to adopt (1) the precipitation system, (2) the bacterial system, and (last) land filtration. Special treatment is required for the Bradford sewage, owing to its containing a large amount of fat, which must be physically separated. The resultant effluent would, after this separation, be treated with ferric sulphate, when it would be capable of bacterial and land filtration treatment.

## Masters and Men.

**The Clyde Engineers,** following the example of their brethren on the north-east coast, have applied for an increase of five per cent. on the present rate of wages.

**Strike of Aberdeen Painters.**—Last Wednesday the operative painters in Aberdeen, to the number of about 400 struck work for a rise of 1d. per hour on the present rate of wages of 7½d. The masters offered ½d. increase, and there is a feeling that the men would be prepared to compromise for ¼d.

**Engineers and Overtime.**—A number of engineers employed by an Oldham firm of cycle and sewing machine makers have been dismissed, the reason assigned being that the workmen had refused to work overtime under certain conditions. At the works in question it has been a rule to pay time and a quarter for all overtime worked; but notice has lately been given that in future only the ordinary rate of pay would be given. The men refused to work overtime under these conditions, and several of them have in consequence been dismissed. The Amalgamated Society of Engineers will, it is expected, take the matter up.

**Engineers' Wages in Lancashire.**—The wages question in the Mid-Lancashire engineering trades will probably come before a conference of the Engineers' Federation Executive and representatives of the engineers' trade unions within a fortnight or so. Mr. G. N. Barnes, the general secretary of the Amalgamated Society of Engineers, has stated to a correspondent that a number of questions had been accumulating of late for the consideration of the conference. This Mid-Lancashire wages question was one which had become acute from the fact that in nearly every other locality in the country advances had recently been given, which left Bolton and district behind the others. At the same time that the Bolton wages were being considered the engineers would have before them wages in the Newcastle district, and in Halifax and neighbourhood. If advances were granted in these districts, then wages would have been raised practically all round the country.

**Scottish Joiners.**—In conjunction with the associated joiners of the district, Hamilton joiners have made an application for an advance of ½d. per hour in their wages. Masters have offered ¼d. from March 1st, and ½d. three months later. The men have refused this offer and are expected to take measures to enforce their demand. The Master Joiners of Motherwell and district have decided not to accede to the demand of the employees for an advance in wages from 8½d. to 9d. per hour. The masters offered as a compromise ¼d. per hour now, and another ¼d. three months hence, but this was refused.—A similar demand made by the joiners of Airdrie and Coatbridge has also met with a refusal, except in the case of one firm at Coatbridge. The Airdrie masters offered a ¼d., which was rejected by the men. It has been resolved to come out on strike, except in the case of the firm which has conceded the advance.—At Wishaw also the joiners are on strike.

**An International Exhibition** is to be held at Glasgow in 1901. At a meeting held at the Mansion House last Thursday for the purpose of appointing a London honorary consultative committee, the Lord Mayor said he looked forward with confidence to 9,000,000 visitors and a profit of £80,000.

**A Memorial Tablet to Bishop Butler** has been placed in Durham Cathedral, and was unveiled last week. The tablet has been designed by Mr. T. Erat Harrison, of Bedford Park, London. The upper part is decorative, while the lower part carries an inscription specially written for the purpose by the late Mr. W. E. Gladstone, flanked by the coat of arms of Bristol and Durham, the arms of Butler being impaled with those of his two sees.



## THE PLASTERERS' DISPUTE.

### THE LOCK-OUT BEGUN.

THE lock-out in the building-trade, which has been so long impending, began at noon on Saturday last, and on Monday morning the only plasterers who were taken on in those shops that have thrown in their lot with the National Association of Master Builders, were those who gave an assurance that they were not members of the National Association of Operative Plasterers. The last communications that passed between the secretaries of the rival bodies are given below. It will be remembered that Mr. Deller, while declining to accede to the masters' demands, had suggested a conference at which the accusations of objectionable practices might be discussed, and—so he maintained—disproved. Mr. Hassall's reply to this was as follows:

"I am instructed to inform you that, in reference to your suggestion that the employers should meet you in conference, it will be necessary to have from your council, in writing, the proposals you intend to submit for their consideration at such conference. The necessity for this must be evident, as up to the present the demands of the employers have been met with a point-blank refusal. As to existing local agreements (none of which sanction the objectionable practices referred to in my previous letters), there will be no difficulty in dealing with these in the event of an understanding being arrived at on the principles at issue, as set out in my letter of Feb. 11. They can be adjusted if necessary by mutual arrangement, or terminated by due notice. Having regard to your replies, my committee do not consider they are justified in altering the decision of which you had due and timely notice on Feb. 22."

To this letter, Mr. Deller replied in the following terms:—

"I regret to find by your letter of yesterday, that your association has practically refused to meet us—that, to my mind being the only interpretation that can be placed upon it. As you have been previously informed, we have no proposals to make, but we are prepared to challenge, and deny the truth of some, and to uphold our right to other statements made by you in yours of Feb. 1. It is also a matter for regret that your association should declare a lock-out in the provinces of members of my association, in spite of the fact that agreements exist, whereby your action becomes dishonourable, and further forcing the Master Plasterers, over whom you have no control—except as a sub-contractor—to lock out also. To sum your letter up, it embodies the whole of the charges urged against us as applicable to your association, and goes to confirm the opinion at first formed by my council, that you set out to fight, and nothing but a fight would appease your desire for our annihilation; and further, had we conceded all your demands, there could be no reliance upon any settlement made being honourably carried out, and I trust that now the Press and the public may be able to see that the poor plasterer is not quite so black as he is painted, or even so arrogant and tyrannical as his accusers."

Now that the battle has begun a good deal of interest turns on the amount of support either side will receive. From the reports which, up to the time of writing, have come to hand from the provinces, it would appear that there is a very general determination amongst master builders throughout the country to support the policy of the National Association. The men for their part are astonishingly unanimous in their determination to reject the employers' terms. In the first stages of the dispute the men were by no means united, but now there is no wavering. The ballot taken last week has resulted in 10,211 answering in the affirmative the question, "Do you approve the action of your executive committee in their conduct of the negotiations with the masters?" and only 36 in the negative. The second question on the ballot paper: "Are you prepared to submit to the employers' terms as laid down in the letter of February 1st?" was answered in the affirmative by 36,

and in the negative by 10,176. Whether the plasterers will receive the support of the other unions in the building trades is very doubtful, as it is well known that their relations with some of these unions are by no means of a friendly character.

And what of public opinion? For that, in the long run, is an important factor in every trade dispute. One of the most remarkable features of this dispute is the practical unanimity of the Press of all shades of opinion in condemnation of the attitude taken up by the Plasterers' Union, though of course the condemnation expressed is in varying degrees of severity.

## Builders' Notes.

**Wellington Parish Church** is being fitted with the latest improved "Small Tube" Hot Water Apparatus by John King Limited, of Liverpool, who are employing their special Economical Coil Heater with Waterway fire-bars.

**The New Portsea Naval Barracks** contract has been secured from the Admiralty by Messrs. Lovatt and Company, of London, who are now completing the new jetty at the dock-yards. The barracks will replace the present wooden hulks as a naval dépôt for the port, and are to accommodate 4800 men. They will cost £400,000, and take four years to build.

**Proposed Bridge across the Tyne.**—The amended estimate for the proposed new Tyne Bridge between Newcastle and Gateshead has been published and distributed amongst members of the city and borough. For bridge structure, extra width and weight as agreed upon by joint committees, flagging and paving the new portions of the streets at each end of bridge, and also the widening of the arch and roadway under the North-Eastern Railway, Pilgrim Street, Newcastle, £200,000. Properties to be acquired on the Newcastle side, £250,000. Properties to be acquired on the Gateshead side, £76,000. Interest on capital during construction, £11,500. Engineering expenses, law charges, and contingencies, £22,500; or a total of £560,000.

**The Builders' Clerks' Benevolent Institution** held its thirty-second annual meeting on the 28th Feb., at the offices, 21, New Bridge-street, Mr. A. F. Randall, president-elect, occupying the chair. The report stated that the receipts during the past year were as follows:—Annual subscriptions, £226 16s.; donations, £494 5s. 6d.; dividend on stock, £151 18s. 8d.; interest on deposit, £5 13s. 11d.; and the balance in favour of the institution from the annual dinner account, £10 0s. 8d. The total disbursements were £606 11s. 8d., out of which a sum of £484 was paid away in pensions, while £20 was distributed in temporary relief. At the end of the year there were twenty recipients of the annual pension, and also two children in the Orphan Working School on the presentation of the institution.

**Charles P. Kinnell and Co. Limited.**—We are informed by Messrs. Charles P. Kinnell and Company, the well-known hot-water engineers, boiler makers, and ironfounders, &c., of 65 and 65A, Southwark Street, London, S.E., that as from January 1st, 1899, they have resolved themselves into a public limited liability company, the whole of the responsibilities of the late firm have been taken over by the new company, and will be discharged by Chas. P. Kinnell and Co. Limited. No shares or debentures in the company have been allotted to the public. The business will be continued as in the past under the title of Chas. P. Kinnell and Company with the necessary qualification "Limited." The alteration in the constitution of the firm has arisen through family reasons only. The responsible working partners of Chas. P. Kinnell and Company will form the directorate of the new company.

## Engineering Notes.

**Gas at Leeds.**—It is proposed to spend on the gas mains in this town £14,402 in enlargements, and £97,278 in extensions.

**Stourbridge Junction** is to be extensively improved by the Great Western Railway Company, and a station is to be erected at Chawnhill.

**Kelty Reservoir**, at Loch Glow, on the Cleish Hills, in Fife, on Thursday bursts its banks and wrought considerable destruction.

**Plans for an Iron Footbridge** between Market Street and Roodyards Road, Dundee, have been prepared by Mr. Buchanan, harbour engineer. The estimated cost is £4750.

**Hull Electric Lighting.**—The Local Government Board held an enquiry last week into an application made by the City Council of Hull for sanction to borrow £16,000 for electric lighting purposes.

**In succession to Mr. W. H. Preece, C.B.**, Mr. J. Hooke, previously the assistant engineer-in-chief, has been appointed the engineer-in-chief of the Post Office. Mr. J. Gavey has been appointed the assistant engineer-in-chief and electrician.

**The London County Council's Engineering Contracts.**—At last week's meeting of the London County Council Mr. Beachcroft presented a petition from the London and District Association of engineering and ship-building employers asking the Council to modify the terms of its contracts with a view to putting the London engineering trade on an equal footing with its competitors outside the London area. Mr. Beachcroft, in moving that the petition should be referred to the General Purposes Committee and the Building Act Committee, said that the petition emanated from sixty firms paying £1,200,000 a year. The motion was agreed to.

**Midland Gas Managers.**—The annual meeting of the Midland Association of Gas Managers was held last Thursday at Birmingham, Mr. J. S. Reeves (Bilston) presiding. In the course of his presidential address, the Chairman dealt with various phases of gas-works construction and management. With regard to gasholder construction, he said it did not appear that any new departure had to be chronicled. The enormously large structure erected by Mr. Livesey at the East Greenwich works was a record which, if equalled, was not likely to be exceeded. The tank and gasholder in course of construction at the Salthley Gasworks—which, through the courtesy of Mr. Hack and his Gas Committee, they were privileged to see something of at their last meeting—would, however, when completed, be the nearest approximation in size to the East Greenwich holder, and be the second largest holder in the world. Not the least gratifying feature in connection with the huge holder at Salthley, and the extensions that were being carried out therewith, was the irrefragable testimony borne to the growing character of their industry—and that in the presence of keen competition with its rival, the electric light, supplied under municipal management and probably under conditions most favourable to its extension. What was taking place in Birmingham in regard to gas-works extension, applied in a lesser measure to most of the manufacturing towns of the kingdom. The chief cause of this growth doubtless was the extended use of prepayment meters. From experience, he could speak most favourably of them. There was, of course, a considerable amount of extra trouble entailed in working those meters; but the trouble was paid for in the increase of revenue from the sales of gas, and undoubtedly the system was appreciated by the industrial portion of the community, on whom it conferred a larger measure of safety and comfort.



Surveying and Sanitary Notes.

**The Widening of Cheapside.**—A start has been made towards pulling down business premises having frontages in Cheapside and St. Paul's Churchyard, with a view to the widening of the western entrance to Cheapside. In rebuilding, the street line will be moved back several feet. The improvement scheme also provides for the widening of the roadway at the junction of Newgate Street and Cheapside.

**Dublin City Improvements.**—The Local Government Board held an inquiry at the City Hall last week into a petition of the Dublin Corporation for a provisional order to enable them to compulsorily acquire sites for fire brigade stations; also an application made by the Corporation for the sanction of sums amounting to £31,000 and £1400 for paving, concreting, asphaltting, &c., and £7000 for electric purposes.

**New Sanitary Powers for the L.C.C.**—The House of Lords, on the 27th February, passed the motion of Lord Monkswell, L.C.C., the Metropolitan Management Acts Amendment (by-laws) Bill passed its second reading. The Bill is designed to enable the London County Council to make bye-laws "requiring persons about to construct, reconstruct, or alter drains in connection with buildings to deposit with the sanitary authority of the district such plans, sections, and particulars as may be necessary for the purpose of ascertaining whether such construction, reconstruction, or alteration is in accordance with the statutory provisions relative thereto, and with any bye-laws made under the said section."

**Perth Auxiliary Drainage Scheme.**—The Work and Paving Committee of Perth City Council have resolved to recommend for adoption plans for a new sewer, which will drain the north part of the city, and will extend from Muirton Bank to the existing catch sewer, which it will join at the junction of Canal Street and Tay Street. The circumstances which render the proposed

scheme imperative are the extremely congested condition of the sewers in Atholl Street, North Port, and Castle Gable, the flat gradient in Rose Terrace, the want of drainage for the properties at Muirton Bank, and the want of a sewer to drain the properties to the south of Charlotte Street. The estimated cost of the new sewer is £6950.

**Leeds Sanitary Inspectors.**—The duties of the Leeds sanitary inspectors are being rearranged. A sub-committee of the Town Council has recommended the appointment of four additional male inspectors, which will bring the total number up to twenty. An endeavour is to be made to carry out a system of house to house visitation. At present only the houses where fever cases have occurred, where alterations are being made to the drains, or dwellings in respect of which complaints have been forwarded to the Sanitary Department, are visited. The idea of the sub-committee is that in the interests of the prevention of disease every house in the city should be visited by a sanitary inspector at least once in four years. This system the sub-committee are of opinion should be commenced forthwith, and with that object they recommend that each of the twenty inspectors devote four half-days a week to house-to-house visitation work. The sub-committee likewise ask the Corporation to appoint two more inspectors, who shall be females.

**The Strand and Clare Market Improvements.**—Mr. H. T. Steward, F.S.I. (Messrs. Hunt and Steward, 45, Parliament Street, S.W.), the arbitrator appointed to decide the value of properties acquired by the London County Council under the Housing of the Working Classes Act 1890, in connection with the Strand and Clare Market scheme, in his inquiry had first to consider the claim in respect of the Hope Tavern, Blackmoor Street, which is held on lease for a term of which twenty years are unexpired at Lady Day next at £70 a year. Mr. Thomas J. Weaver, public-house valuer, Theobald's Road, W.C., expressed the opinion that £8000 could be got as a premium for a sixty years' lease. Witness had applied the 4 per cent. table. He valued the rental of £70 a year at a twenty years' purchase, and a shed at the rear at £237. His total valuation, including the usual 10 per cent for

forced sale, was £6567. These figures were supported by the evidence of other experts. On behalf of the London County Council Mr. Thornton (Messrs. Thornton, Lumsden, and Newman, 15, Coleman Street, E.C.) and Mr. Weatherall, F.S.I. (Messrs. Weatherall and Green, 22, Chancery Lane) had taken the rental of £70 a year on the 4 per cent. table £952; value in possession, £100 per annum, £1919; 4 per cent. table, twenty-five years' purchase, £2500. The total valuation was £3362. In regard to the Grapes Tavern, Drury Lane, and the Artichoke, Clare Street, the arbitrator was asked to make an award of £3647 and £7200 respectively.

Trade and Craft.

A NEW FUEL FOR BOILERS.

The Perfecta Seamless Tube Company are exploiting a new invention which promises great things in the way of fuel saving. In the place of coal they use oil in a high state of evaporation, and claim that the result is a saving of at least 50 per cent. in energy. The idea is French in origin, but it has remained for the practical English mind to give it workable commercial value. A trial was made recently at the works of the Perfecta Seamless Tube Company at Aston. A large Lancashire boiler was used, the face being slightly modified to allow of the entry of the tubes containing the mingled air and oil. A few embers under the tubes in the mouth of the furnace swiftly vaporized the oil, and it projected itself in a terrific sheet of flame. In a remarkably small space of time the water in the boiler rose in temperature until boiling point was reached. Little attention was needed, and naturally there is no stoking or trouble with ashes. Here are the advantages of the system as set forth by the Company:—By means of the vaporised oil 12lb. of water can be evaporated per lb. of fuel as compared with an average of 5lb. per lb. of fuel in a boiler of the ordinary Lancashire type; no smoke is produced by the oil, and a much smaller space of grate surface is needed than when coal is used. The new fuel may be used in any class of boiler.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF LIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—</b>			
10	Broughton Moor, Maryport—Two Cottages	W. Chadwick	Bowman Eilbeck, Standing Stones, Broughton Moor.
10	Whitby—Re-roofing, &c.	Rural District Council	E. H. Smales, 5, Flower-gate, Whitby.
11	Carlisle—Two Bridges	School Board	J. Bell, 1, Aglionby-street, Carlisle.
11	Glenorchy, Scotland—Alteration to House, &c.		K. MacRae, Architect, Oban.
11	Mirfield—Two Semi-detached Houses	Zion Chapel Trustees	T. H. Farrar, Fountain-chambers, Fountain-street, Hafifax.
11	Battle, Sussex—Repairing Chapel	D. O'Reilly	Eldridge, 15, Mount-street, Battle.
13	Cork—Two Houses	Urban District Council	W. H. Hill and Son, 23, South-mall, Cork.
13	Llandudno—Slaughter-houses, &c.	Sanitary Committee	E. P. Stephenson, Engineer, Church-walks, Llanduduo.
13	Manchester—Isolation Hospital Block, &c.	City Council	City Surveyor, Manchester.
13	Nottingham—Reading-room and Cottage		W. B. Starr, 12, St. Peter's-gate, Nottingham.
13	Oakworth, Yorks.—Six Houses	Corporation	J. Judson and Moore, Architects, Oakworth, nr. Keighley.
13	Tredegar—Altering, &c., Castle Hotel	Gt. Northern Railway Company (Ireland)	A. O. Evans, Architect, Pontypidd.
13	West Hartlepool—Electric Light Station	Town Council	J. W. Brown, Borough Engineer, West Hartlepool.
13	Dublin—Electric Power House	General Prison Board	Engineer-in-Chief, Amiens-street Terminus, Dublin.
13	Hereford—Electricity Buildings	Gt. Northern Railway Company (Ireland)	J. Parker, City Engineer, Hereford.
13	Maryborough, Ireland—Prison Buildings	John Kenyon, Ltd.	M. S. Green, Board's Engineering Inspector, Dublin Castle.
13	Omagh, Ireland—Additions to Station, &c.	Urban District Council	Engineer-in-Chief, Amiens-street Terminus, Dublin.
13	Rawtenstall—Hotel Alterations	H. Taylor	R. Neill, 9, Grimshaw-street, Burnley.
13	Cowes—Coal Stores	Craig, Taylor, and Co.	Engineer, Council Offices, Cowes.
14	Eaglescliffe, Yorks—Stabling	London County Council	Craig, Taylor, and Co., Thornaby Yard, Stockton-on-Tees.
14	Thornaby—Offices		Craig, Taylor, and Co., Thornaby Yard, Stockton-on-Tees.
14	Pimlico, S.W.—Alterations, &c., to Sewer Pumping Station	County Council	Engineer's Department, County Hall, Spring-gardens.
14	London—Men's Conveniences		Architect's Department, 13, Spring Gardens, S.W.
14	Bala, Merioneth—School	Glasgow International Exhibition	H. Teather, 83, Wyle-cop, Shrewsbury.
15	Glasgow—Exhibition Buildings	North Dublin Union Guardians	F. A. Healey, 141, Buchanan-street, Glasgow.
15	Dublin—Thirteen Labourers' Dwellings	Guardians of St. Giles, Camberwell	J. O'Neill, Clerk, Board Room, North Brunswick-st, Dublin.
15	London, S.E.—Alterations to Workhouse Buildings	Burial Board	H. Jarvis and Son, 29, Trinity-square, Borough, S.E.
15	Burngreave, Sheffield—Lodge, Boundary Wall, &c.	Commissioners-of Irish Lights	E. Winter, jun., Architect, Wharf-street, Sheffield.
16	Shrove, Merville, co. Donegal—Lightkeeper's Dwelling, &c.	District Electric Light Company	O. Armstrong, Secretary, Irish Lights Office, Dublin.
16	Greenwich, S.E.—Timber and Concrete Wharf	Y.M.C.A.	R. P. Wilson, 66, Victoria-street, S.W.
18	Gloucester—Altering Premises	Aderson and Son	W. B. Wood, 12, Queen-street, Gloucester.
20	Morecambe—Mineral-Water Works	Union Guardians	A. L. Lang, 12a, Pedder-street, Morecambe.
20	Croydon—Workshops and Workhouse		F. West, 23, Coombe-road, Croydon.
21	Hanley, Staffs.—St. Jude's New Parish Church	Union Guardians	R. Scrivener and Sons, Architects, Hanley.
21	Luton—School Buildings	Asylums Committee	J. R. Brown and Sons, 17, Market-hill, Luton.
28	Kingston-on-Thames—Infirmary, &c., at Workhouse	Kesteven County Asylum	W. H. Hope, Union Offices, Portsmouth-road, Kingston.
1	Ipswich—Asylum Alterations, &c.		E. Buckham, Borough Surveyor, Town Hall, Ipswich.
4	Raneby, near Sleaford, Lincs.—Superstructure of Lunatic Asylum		G. T. Hine, 35, Parliament-street, S.W.
5	Lanchester—Bridge over New House Burn		The Surveyor, Lanchester, Durham.



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—</b>			
March 10	Whiting Bay, Isle of Arran—Waterworks ...	Duke of Hamilton's Trustees ...	Warren and Stuart, 115, Wellington-street, Glasgow.
" 11	Roscommon—Reservoir, Pumping Machinery, &c. ...	Waterworks ...	C. Mulvany, M.I.C.E., Athlone.
" 13	Glantlees, Newton-on-the-Moor—Reservoir ...	Major Widdrington, J.P. ...	M. T. Wilson, Architect, Alnwick.
" 13	Llandudno—Promenade Extension ...	Urban District Council ...	E. P. Stephenson, Church-walks, Llandudno.
" 13	Letterkenny, &c., Ireland—Railways ...	Corporation ...	T. M. Batchen, 9, Ship Quay-street, Londonderry.
" 14	Canterbury—Electric Lighting Plant ...	Urban District Council ...	R. Hammond, 84, Victoria-street, Westminster, S.W.
" 14	King's Lynn—Widening Bridge ...	Urban District Council ...	H. J. Weaver, Borough Engineer, Guildhall, King's Lynn.
" 15	Barry, Cardiff—Sinking Well, &c. ...	Urban District Council ...	E. W. Waite, Gas and Water Offices, Barry.
" 15	Roscommon—Retort Bench ...	Gas Company Ltd. ...	Manager, Gasworks, Roscommon.
" 15	Dundee—Electrical Plant ...	Gas Commissioners ...	W. H. Tittensor, Dudhope-crescent-road, Dundee.
" 15	London, W.—Electric Lighting Machinery ...	Hammersmith Vestry ...	W. P. Cockburn, Vestry Clerk, Town Hall, Hammersmith.
" 15	Weymouth—Waterworks ...	Waterworks Co. ...	T. and C. Hawksley, 30, Great George-st., Westminster, S.W.
" 15	Glasgow—Reconstruction of Tramways ...	Corporation ...	J. Young, 83, Benfield-street, Glasgow.
" 16	Belfast—Switchboard Extensions ...	Electric Committee ...	V. A. H. McCowen, City Electrical Engineer, Belfast.
" 16	London, N.—Hot Water Arrangements and Kitchen Fittings ...	Islington Guardians ...	W. Smith, 65, Chancery-lane, W.C.
" 18	Lynn—Steam Fire Engine, &c. ...	Urban District Council ...	W. Mullahd, Clerk, Council Offices, Lynn.
" 20	Beckenham—Heating of Swimming Baths, &c. ...	Urban District Council ...	J. A. Angall, Engineer, Council Offices, Beckenham.
" 20	Rochford—Well and Boring ...	Urban District Council ...	J. Mansergh, 5, Victoria-street, S.W.
" 22	London, E.—Electrical Machinery ...	Poplar Union Guardians ...	F. J. Warden-Stevens, 34, Victoria-street, Westminster, S.W.
" 24	Ringstead, Northants—Two Girder Bridges ...	Thrapston Rural District Council ...	Surveyor to the Council, Thrapstead.
" 24	Stockport—Electric Lighting of School ...	Sunday School Committee ...	W. B. Leigh, Hon. Sec., Committee Room, Stockport Sunday School.
" 25	Bristol—Pumping Engines, &c. ...	Waterworks Company ...	T. & C. Hawksley, 30, Great George-st., Westminster, S.W.
" 25	Manchester—Steam Pumping Engines ...	Waterworks Committee ...	Secretary, Waterworks Offices, Town Hall, Manchester.
" 25	Edinburgh—Chemical Plant ...	Gas Commissioners ...	W. R. Herring, Engineer, Gasworks, Edinburgh.
April 5	Bury, Lancs.—Gas Purifiers, Valves, &c. ...	Gas Committee ...	H. Simmonds, Engineer, Gasworks, Elton, Bury.
May 17	London, E.—Construction of Wells, &c. ...	Poplar Union ...	E. J. W. Stevens, 34, Victoria-street, S.W.
June 30	Shanghai—Tramway Concession ...	Municipal Council ...	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
<b>IRON AND STEEL—</b>			
March 13	London, E.C.—Steel Tyres, Axles, &c. ...	Burma Railways Co. Ltd. ...	Offices, 76, Gresham House, Old Broad-street, E.C.
" 14	Preston—Iron and Brass Work, &c. ...	Corporation ...	Borough Surveyor, Town Hall, Preston.
" 14	West Ham—Wrought-iron Fencing and Gates ...	Town Council ...	L. Angell, Borough Engineer, Town Hall, Stratford, E.
" 14	London—Railing, Gates, &c. ...	County Council ...	Architect's Department, 13, Spring-gardens, S.W.
" 15	London—Fencing ...	Metropolitan Asylums Board ...	Treadwell and Martin, 2, Waterloo-place, S.W.
" 16	Mullingar, Ireland—Cast-iron Pipe Conduit ...	Guardians ...	J. Harton, Clerk, Workhouse, Mullingar.
" 18	Eastbourne—Various Stores ...	Town Council ...	R. M. Gloyne, Borough Engineer, Town Hall, Eastbourne.
<b>PAINTING AND PLUMBING—</b>			
March 10	Cardiff—Paints, Oils, Glass, &c. ...	Guardians ...	A. J. Harris, Clerk, Queen's-chambers, Cardiff.
" 11	Cardiff—External Painting ...	Workhouse Guardians ...	The Master, Workhouse, Cardiff.
" 11	Millgate, near Rochdale—Painting 25 Cottages, &c. ...	Swindon New Town Urban D. Council ...	111, Oak-terrace, Millgate, near Rochdale.
" 11	Swindon—Oils, Paints, Pipes, &c. ...	Water Committee ...	H. J. Hamp, Surveyor, Public Offices, Swindon.
" 20	Warrington—Oils, Paints, Bricks, &c. ...	Water Committee ...	J. Deas, Water Engineer, Warrington.
<b>ROADS AND CARTAGE—</b>			
March 10	Towcester, Northants—Team Labour ...	Rural District Council ...	W. Sheppard, Surveyor, Towcester.
" 11	Dartford—Ragstone ...	Commissioners of Sewers ...	Surveyor, Sessions House, Dartford.
" 11	Edinburgh—Articles and Works ...	Corporation ...	Public Health Office, 321, High-street, Edinburgh.
" 11	Beverley—Whinstone and Gravel ...	East Riding County Council ...	A. Beaumont, County Surveyor, Beverley.
" 11	Billesdon, Leics.—Cartage and Granite ...	Rural District Council ...	W. E. Richardson, Clerk, 18, New-street, Leicester.
" 11	Broadstairs—Horsing Carts and Vans ...	Urban District Council ...	L. A. Skinner, Clerk, Council Offices, Broadstairs.
" 11	Dartmouth—Quarrying Stone ...	Town Council ...	T. O. Veale, Borough Surveyor, Dartmouth.
" 11	Gosforth—Roadway, &c. ...	Urban District Council ...	C. J. Baff, Surveyor, Council-chambers, Gosforth.
" 11	Norman Cross, Peterborough—Slag, Granite, and Carting ...	Rural District Council ...	Skinner, Surveyor, Norman Cross, Peterborough.
" 11	Padiham, Lancs.—Setts, Flags, Kerbs, &c. ...	Urban District Council ...	J. Gregson, Surveyor, Council Offices, Padiham.
" 13	Bexley Heath, Kent—Works and Materials ...	Urban District Council ...	T. Vickers, Town Surveyor, Public Hall, Bexley Heath.
" 13	Rotherham—Materials and Team Labour ...	Rural District Council ...	Bradbury, 298, High-street, Rotherham.
" 13	London, S.W.—Materials ...	Barnes Urban District Council ...	G. B. Tomes, Surveyor, Offices, High-st., Mortlake, S.W.
" 13	Newark—Leading Materials ...	Urban Sanitary Authority ...	Borough Surveyor, Corporation Offices, Newark.
" 14	Littleborough, Lancs.—Materials ...	Urban District Council ...	G. A. Wild, Surveyor, Hare Hill-road, Littleborough.
" 14	Bath—Road Materials ...	Urban Sanitary Authority ...	C. E. Fortune, City Surveyor, Guildhall, Bath.
" 14	London, W.C.—Works and Materials ...	St. Giles' District Board of Works ...	G. Wallace, Engineer to Board, 197, High Holborn, W.C.
" 14	Derby—Materials ...	Town Council ...	Borough Surveyor, Town Hall, Derby.
" 14	Salford—Materials ...	Corporation ...	Borough Engineer, Town Hall, Salford.
" 14	Willesden, N.W.—Road Works ...	District Council ...	O. C. Robson, Public Offices, Dyne-road, Kilburn, N.W.
" 15	Chelmsford—Broken Granite ...	Town Council ...	G. H. Sasse, 16, London-road, Chelmsford.
" 15	Hoo, Kent—Materials, &c. ...	Rural District Council ...	E. P. Smyth, Clerk, Strood.
" 15	Thorne, near Doncaster—Dross and Granite, &c. ...	Rural District Council ...	G. Kenyon, Clerk, Plantation-road, Thorne.
" 15	Greenwich, S.E.—Materials ...	Board of Works ...	141, Greenwich-road, S.E.
" 15	St. Helens, Lancs.—Materials ...	Corporation ...	G. J. C. Broom, Borough Engineer, Town Hall, St. Helens.
" 16	Walsall—Materials ...	Rural District Council ...	F. W. Mager, District Surveyor, Walsall.
" 17	Preston, Lancs.—Paving Works, &c. ...	Corporation ...	Borough Surveyor, Town Hall, Preston.
" 18	Hoyle, Cheshire—Materials, &c. ...	Urban District Council ...	T. Foster, Surveyor, District Council Offices, Hoyle.
" 20	London, N.—Materials ...	Finchley Urban District Council ...	Surveyor, District Council Offices, Church End, Finchley.
" 20	London, W.—Sand, Shingle, Wood Blocks, &c. ...	Paddington Vestry ...	Surveyor, Vestry Hall, Harrow-road, W.
" 20	Beckenham—Road Making ...	Urban District Council ...	J. A. Angell, Engineer, Council Offices, Beckenham.
" 29	Ramsgate—York Paving Flags ...	Corporation ...	T. G. Taylor, Borough Surveyor, Broad-street, Ramsgate.
April 4	London, S.W.—Cartage and Materials ...	Middlesex County Council ...	H. T. Wakelam, County Surveyor, Guildhall, Westminster.
<b>SANITARY—</b>			
March 10	Bardsley, near Ashton-under-Lyne—Sewers ...	Linehurst Rural District Council ...	Foster, Son, and Bardsley, 23, John Dalton-st., Manchester.
" 10	Durham—Scavenging ...	Rural District Council ...	Inspector, Wood View, Shincliff, Durham.
" 10	Waterloo, near Ashton-under-Lyne—Sewers ...	Linehurst Rural District Council ...	Foster, Son, and Bardsley, 23, John Dalton-st., Manchester.
" 10	Whiting Bay, Isle of Arran—Sewerage Works ...	Duke of Hamilton's Trustees ...	Warren and Stuart, 115, Wellington-street, Glasgow.
" 13	Rotherham—Scavenging ...	Rural District Council ...	B. Godfrey, 29, High-street, Rotherham.
" 14	London, W.C.—Sewer Works ...	St. Giles' District Board of Works ...	G. Wallace, 197, High Holborn, W.C.
" 15	Westbury-upon-Trym—Outfall Sewerage ...	Rural District Council ...	A. F. J. Cotterill, 7, Baldwin-street, Bristol.
" 20	Walsall—Scavenging ...	Rural District Council ...	A. H. Lewis, 29, Leicester-street, Walsall.
May 12	Johannesburg—Sewerage Scheme ...	Corporation ...	Town Engineer, Johannesburg.
<b>TIMBER—</b>			
March 14	Dover—Hard Wood Paving ...	Town Council ...	H. E. Stilgoe, Borough Engineer, Town Hall, Dover.
" 15	Carshalton—Oak Park Pale Fencing ...	Metropolitan Asylums Board ...	Treadwell and Martin, 2, Waterloo-place, Pall Mall, S.W.
" 16	Lancaster—Fir Wood Paving Blocks ...	Streets Committee ...	J. Cook, Borough Surveyor, Town Hall, Lancaster.
" 20	London, W.—Deal Wood Paving Blocks ...	Paddington Vestry ...	Surveyor, Vestry Hall, Harrow-road, W.

## COMPETITIONS.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
March 22	London, E.C.—Additions to Town Hall ...	£50, £25 ...	Shoreditch Vestry.
" 30	Doncaster—Design for Master's House ...	£50, £25 ...	Doncaster Grammar School Trustees.
" 31	Forfar—Isolation Hospital ...	£31 10s., £21, £15 15s. ...	Dundee and Forfar District Committees.
" 31	Swindon—Additional Fever Pavilion ...	... ..	W. H. Kinneir, Clerk to Hospital Board, High-st., Swindon.
April 14	Bradford—Cartwright Memorial Hall and Art Gallery ...	£150, £100, £50 ...	City Surveyor, Bradford.
" 30	Ramsgate—Concert Hall, Reading Room, Lavatories, &c. ...	£50, £20, £10 ...	T. G. Taylor, Surveyor, Broad-street, Ramsgate.
June 1	Leeds—Market Hall and Shops ...	£150, £100, £50 ...	Corporation.
No date.	Staines—School to Contain 250 Children ...	... ..	J. A. Engall, Clerk to School Board, Staines.



## Property and Land Sales.

**HEMILE PARK**, near Cobham, Surrey.—A FREEHOLD BUILDING ESTATE of about 40 acres, with possession.

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Particulars and plans, when ready, can be obtained of **MR. J. J. JUPP, Esq., Solicitor**, 48, Lime-street, E.C.; or of **Messrs. DRIVER and Co.**, 23, Pall Mall, S.W.

**order of Trustees.**—Preliminary Advertisement.—Freehold Building Estate, Streatham, near West Norwood Railway Station.

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Particulars and plan, in due course, of **Messrs. KINGSDORF, DORMAN, and Co., Solicitors**, 23, Essex-street, Strand; of **Messrs. WILFORD and WILSHIN, Auctioneers**, Anerley, S.E.; and of **Messrs. FIELD and SONS**, above.

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MARCH NUMBER

OF . . .

“The Architectural Review.”

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MARCH 15, 1899.

No. CCXIV.

## An Architectural Causerie.

BELOW the brow of A Cotton Town. Wardle Hill is the town of Wolmington. wintry sun is in the heavens, seen through veil of smoke and dirty fog that clings about the lower portions of the many chimney shafts, and intervenes a grey and sombre ground, between the earth and sky. The sun sets in a dark red sky, and the black smoke from the chimney curls away against the red glow. The streets and pavements are below, and a little later, at the sound of the buzzer, epicene forms pour out through the mill gates and pass along the flags, and rising to the top of Wardle Hill, through the smoke and fog comes the unmistakable sound of clattering clogs, the shrill laughter of factory lasses, and the less frequent and deeper tones of the workman. Change comes quickly; in three or four hours the wind has risen, and comes whispering across the moorland to the rear of Wardle Hill, rising to a shrill whistle as it dips over the hill top, dying away into a melancholy whimper as it weeps towards Blackedges, a range of hills in the far distance. The wind rises and falls, rustling round the tapering shafts, shifting the little streams of smoke that rise from the fires, and carries the fog and noxious vapours away till the boundaries of Wolmington can just be seen. The town lies in a hollow, flanked on one side by Wardle Hill, and on the other by the river Aire; to the left the town tails off with suburban residences of usual design, and terminates to the right with the railway station. Near the middle is the home of the co-operative movement, towering high above the surrounding buildings; further away, in the direction of the terminus, is the fire station, and just below the hill is situated the new Technical School; here and there are a few thin-looking spires, and halfway up the side of Wardle Hill stands the ancient parish church, contrasting strangely with the sturdy and numerous chimney shafts that taper upwards from every part of the town; street after street of two-storied workmen's dwellings of the same design, occasional waste spaces covered with ashes, and a mill rising in the background. This can be seen distinctly in the now clear atmosphere. The rays of a full moon, which has long breasted the hill, falls upon the buildings and quiet streets. On the ridge of a new inn, called the "Black Owl," stalks a philosophic cat, who looks down upon the town with a pleased and complacent air. "This is progress," thinks the philosophic one, and suddenly disappears over the end, his tail waving in the moonlight for a moment as he grips the gable wall for his last jump. Far away in the distance are some upstanding monoliths, older than the parish church—rude stone monuments that mark the resting-place of the builders who laid the foundations of modern Wolmington. G. LL. M.

### The Teaching of Design.

THE well-known story of the writer who began a work upon "Snakes in Ireland" with the sentence, "There are no snakes in Ireland," seems applicable here—"The Teaching of Design." Design cannot be taught. The power of designing cannot be communicated, for the designer is like the poet—born, not made; though it is not intended to assert that his development may not be aided or hindered by the course of study through which he passes, if the divine spark be there. What can be taught is the mechanical part of the business, just as in drawing, the perception of balance and proportion, the accurate triangulation of the figure and the relations of points and lines, the retirement of planes and measuring of tone values by the eye may be gradually hammered in to the student who is not an artist at heart. But all teaching is negative;

which he works, must necessarily be able to design for it, and that the way to produce fine things is to turn over the designing of them to him. It is forgotten that the power of design is one thing, the talent for execution quite another, and that although the two may co-exist in the same person, it is at least equally likely that they may be divorced. It is certain that the designer ought to be familiar with the processes of the craft for which he is designing, or he will miss opportunities or plan impossibilities; but that craftsmen left to themselves do not necessarily produce fine works of Art, or progress in power of design, is shown by the example of the German smiths, who, for 150 years, had the whole thing in their own hands, and fell by the usual temptation of the craftsman which lures him on to think that the successful overcoming of difficulties of manipulation is the one thing needful to ensure artistic



Near the Station  
Toledo

DRAWN BY F. HAMILTON JACKSON, R.B.A. (See page 83.)

one can point out where the pupil has gone wrong, can even explain to him sometimes where his work lacks feeling, and show him how it might have been better done; but, after all, the creative impulse must be innate, and, lacking it, the utmost which can be attained is the production of work which shall be inoffensive. The mistake which the old schools of Art made was in supposing that all that was wanted to equip the designer for his work could be learned and provided for him at a desk in a room; that design was a thing quite by itself, a product of nicely strained paper, T-squares and compasses, of dissection of flowers and geometrical diagrams, having little relation to its subsequent rendering, and capable of being judged from the standpoint of abstract æstheticism. We have got beyond that to-day, and the pendulum swings the other way. The gospel preached now is that the craftsman, because he knows the capabilities of the material in

success and give interest to his work. The time-honoured English way of teaching has been by apprenticeship or some analogous arrangement, where the pupil had a hint here and a hint there, but had to puzzle things out for himself for the most part. This had the disadvantage of being a lengthy process, but the possibilities of mistake were exhausted, and the same thing had often to be done in different ways during the period of apprenticeship, which gave the workman aptness in seizing the best way of conquering a difficulty. The system of apprenticeship having decayed, technical schools have been established to take its place, which endeavour to teach the best way of doing each thing, thereby causing the mind of the student to become rigid and formula-ridden. Even for the teaching of technique this is not an ideal mode, while for that to which spontaneity is as the breath of life it must prove asphyxiating. It was not thus that the designers were brought up whose works are now conquering the Continent, whence an ever-increasing demand is coming for English designs and designers. S. S. G.



## On Reflection.

**London Street Traffic.** THE attempts that are being made to deal with the congestion of traffic in the streets of London have given rise to some rather curious recriminations amongst the parties concerned. The "crawling" cabmen, indignant at being turned out of the main streets, where "fares" are usually picked up, demand that the 'buses, which they say are the real causes of the congestion, shall be treated with equal stringency. The Government has lately brought in a Metropolitan Streets Act Amendment Bill, which proposes to give the Chief Commissioner of Police powers to divert omnibuses from their present routes. Against this proposal the bus proprietors are up in arms; they consider the exercise of the powers it is proposed to confer would result in grave injury to themselves and their employees, as well as in great inconvenience to the travelling public. They, in turn, would shift the blame on to the heavy drays and the private carriages, suggesting that the former should be compelled to take the less frequented routes and the latter forbidden to stand for a long time outside shops. It seems almost impossible to deal with this question without inflicting a certain amount of hardship on one section or another of the community. But that it must be dealt with—and that soon—must be evident to everyone. If time is money, the citizens of London must lose thousands of pounds daily in their slow progress between Charing Cross and the Bank. The widening of narrow streets and the increase of underground electric railways may be calculated to effect some improvement, but more than this is necessary, for the congestion, if not checked, will inevitably get worse every year. On the whole, we think the plan of giving the police larger powers in regulating the traffic is the one most likely to effect good results.

### The New Vauxhall Bridge.

MR. WARD, Chairman of the Bridges Committee of the London County Council offered some reply to the meeting last Tuesday week to the influentially signed protest, recently made in the "Times," upon Sir Alexander Binnie's design which we commented on last week. He said he felt that many of those gentlemen who had signed the letter would not have done so had they been cognisant of the facts, and these facts he proceeded to state. The Bridges Committee had received deputations from the Art Committee of the Royal Institute of British Architects on several occasions on the subject, and they had gone a long way to meet the various suggestions which had been received. As a result of a letter the Art Committee was received by the Bridges Committee on May 23, 1894, the president of the Royal Institute of British Architects introducing the deputation. On December 12, 1894, the standing Art Committee of the Institute again saw the committee, and the engineer was instructed to furnish the standing Art Committee with sections of the bridge and give information as to the form of construction. On July 17th, 1895, the Bridges Committee received the third deputation from the architects, who submitted a sketch design for the piers and abutments. This was referred to the engineer for consideration. Several letters passed, and the engineer was instructed to avail himself, as far as desirable, of the suggestions with which the Bridges Committee had been favoured. A model was subsequently prepared of the engineer's design, which included several modifications suggested by the Art Committee, and the engineer invited Mr. Waterhouse and Mr.

Mountford to see the model. On February 19th, 1898, Mr. Waterhouse wrote to Sir A. Binnie congratulating him in the name of himself and Mr. Mountford upon the general design and proposed construction of the bridge. They, however, went on to make some half-dozen further suggestions, and probably three or four of these would be adopted in the carrying out of the working drawings for the superstructure which were being made. It was manifest that the committee had gone a long way to meet the views of the architects, and in the end they felt that the engineer must be responsible for the design, as it would hardly do to put an irresponsible advisory committee in his place. It had been stated that a deputation asked to see the chairman of the Council. The explanation of that was that the clerk opened the letter, and, seeing that it referred to bridges, at once sent it on to the Bridges Committee. The chairman of the Council had stated that he had not seen that letter, but no doubt he would be willing to receive the deputation. The contract for the piers had been let, and the only thing that the committee could now alter was the superstructure. A sketch design had been sent in, but it was so unworkable in many respects that it could not be adopted. This statement of Mr. Ward's is well calculated to throw dust in the eyes of the public, and we notice several papers accept the statement without a word. An examination, however, of the communications which passed between the Institute and the L.C.C., puts a somewhat different complexion on the matter. These were almost entirely confined to the construction of an iron bridge with stone piers, a form of construction subsequently abandoned. The council of the Institute not only laid a sketch before the committee, but furnished suggestions, drawings, and details to scale; but these dealt with an iron bridge, and were not applicable to a bridge completely dressed in stone. The only inter-communication afforded by the engineer was the much-made-of interview with Mr. Waterhouse and Mr. Mountford, which was to be considered informal and confidential, and the confidential letter from Mr. Waterhouse is brought up in defence of the non-submittal of the design to the Institute Council. But the suggestions offered by Mr. Waterhouse and Mr. Mountford were, we learn, more far-reaching than appears at first. The Bridges Committee seems to be afraid to oppose Sir A. Binnie, who cannot be expected to agree to any interference of architects. The Council have need to remember that they and their officials are the servants of the ratepayers, and when they receive deputations from an influential body it is well not to throw aside opinions furnished, on account of one of their highly-paid officials' feelings or prejudices, however important a personage he may appear in their eyes.

### Fog, Smoke, and Electricity.

THE amount of attention that is being devoted just now to the fog fiend encourages the hope that he will soon be out-manceuvred and exterminated. Artists, electricians, and County Councillors have all got their eye upon him. Those enthusiastic folk who have lately been seeking to arouse us from our lethargy on this subject have banded themselves into a society the better to prosecute their aims; Sir William Richmond has consented to become the first president of the new society, and Mr. Owen P. Thomas is its hon. secretary. An experiment which may have some bearing on the question was made by Professor Oliver Lodge in a recent lecture at the Royal Institution. The Professor filled a bell-jar with magnesium smoke, the fumes of which would ordinarily take a long time to disperse. He then passed an electric current through the jar, with the result that the smoke began instantly to clear, the smoke particles uniting

and falling in the form of a white snow of magnesia. This action of the smoke particles is due to what is known as electric cohesion. Now if a jar-full of smoke can be dispersed in this way, why should not the same means be employed on a larger scale to get rid of a fog? An attractive idea, is it not? Dr. Lodge thinks it quite possible that a real fog—that is a fog arising from a moisture-charged atmosphere, quite a different thing from the sulphurous, artificially-made, London variety—might be so dispersed. But the only way, he thinks, to prevent a London fog is not to cause it. People should use gas stoves instead of burning coal fires in open grates, and the gas should be made at the coal fields and conveyed to town in huge pipes and conduits. This does not sound like practical politics, and, indeed, Dr. Lodge admitted that the experiment would have to be tried first in the case of a small town. Scarcely more possible was Mr. Bull's suggestion at a recent meeting of the London County Council that a reward of £1000 should be offered for "a patent smoke consumer adaptable to modern private houses." Sir Harry Poland's parable of the man who had a simple contrivance to prevent cisterns freezing—namely, to remove them from the cold part of the house and take care to keep them warm—induced the Council to reject this fantastic notion. The Smoke Abatement Society would render good service if they could evolve a practical plan of campaign against the smoke nuisance.

### A Senseless Quarrel.

THE little clique of operative plasterers, whose high-handed attempts to enforce an unreasonable demand was the proximate cause of the present trouble in the building trade, must have uneasy consciences just now, if they possess any sense of responsibility, and even a moderate degree of imagination. What the issue of the struggle may be it would be rash to forecast, but this much is morally certain: that before many weeks have passed there will be hunger and cold in the home of many a working man, compelled to idleness through no fault of his own; that there will be many a firm, holding an unblemished record for fair and even generous dealings with its employees, that will be driven to the verge of bankruptcy, or even over the verge. For it is as true in industrial warfare as in the warfare of nations, that it is not those that make the quarrels who suffer most keenly from their effects. It is, of course, a fact that the silly demand about the foremen has long been withdrawn, but those who throw firebrands cannot escape responsibility for the conflagrations they kindle. Yet not all the blame should rest upon the authors of that act of folly. There is beyond doubt a great degree of truth in the charges of objectionable practices that have been made against the plasterers as a whole, though we think these charges have been made somewhat too indiscriminately. Nor has the conduct of the negotiations been all that could be desired. We confess to a good deal of sympathy with the very small minority of operative plasterers who answered "No" to the question, "Do you approve the action of your executive committee in their conduct of the negotiations with the masters?" Mr. Deller's answers to the Secretary of the Master Builders were certainly not of the kind that turn away wrath. And yet we think the masters would have been well advised to have taken him at his word and accepted unconditionally the offer of a conference. If, as suggested, the offer was not seriously meant, the conference would, of course, have been ineffectual, but the public would then have been without the faintest shadow of a doubt as to which side was responsible for the present deadlock.

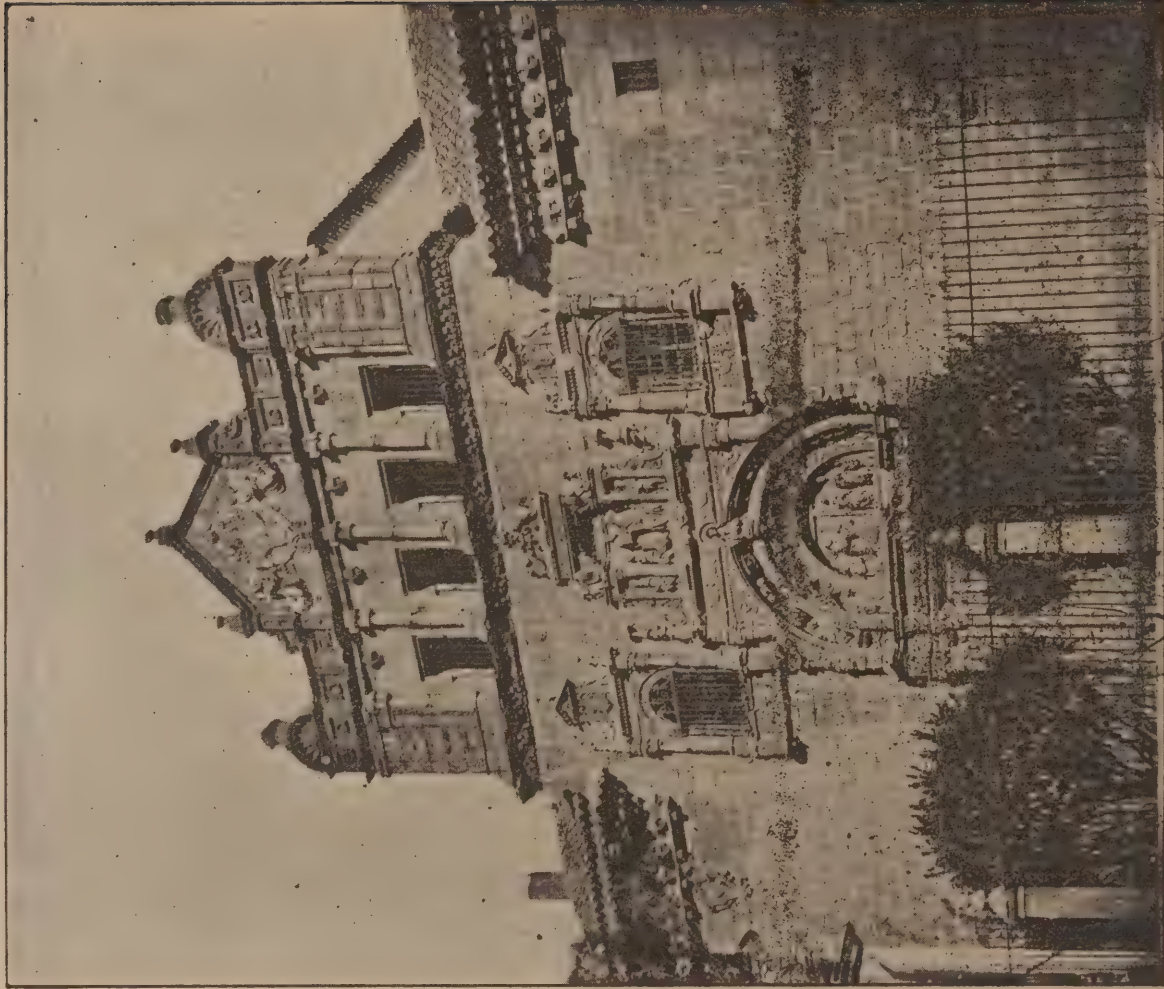






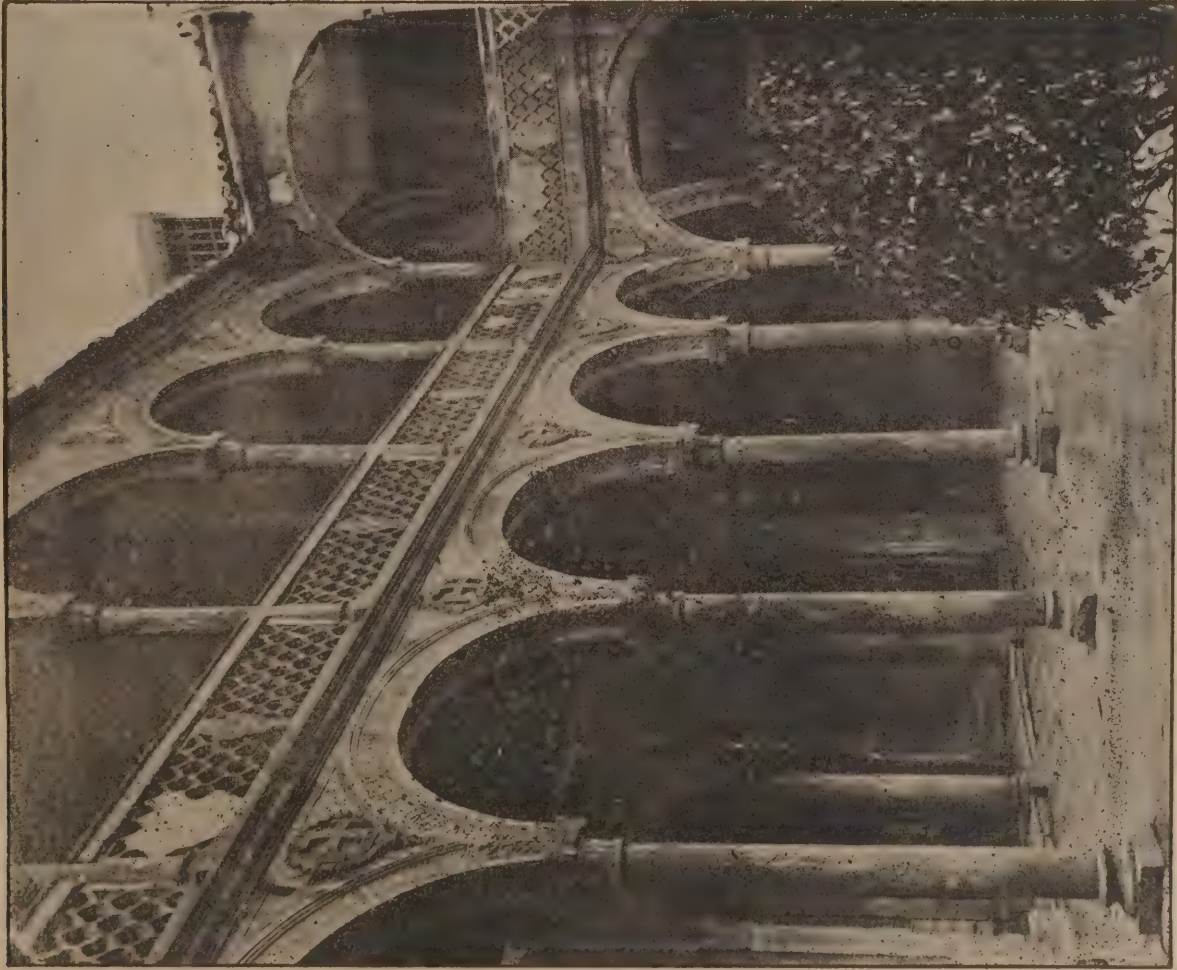


TOWER OF S. TORRÉ.



HOSPITAL OF SANTA CRUZ.





PATIO: HOSPITAL OF SANTA CRUZ.



DOOR OF THE PALACE OF PEDRO THE CRUEL.

IN THE CITY OF TOLEDO. (See p. 83.)



LIBRARY  
OF THE  
UNIVERSITY OF ILLINOIS



## THE ARCHITECTS' BENEVOLENT SOCIETY.

### ANNUAL GENERAL MEETING.

THE annual general meeting of the above Society was held on Wednesday last, when the annual report of the council was read. The president of the Society, Professor Aitchison, B.A., occupied the chair. The report stated that the past year had been a satisfactory one, and much useful work had been done. The sum of £654 14s. 10d. had been distributed amongst thirty-nine persons. The amount received in subscriptions was £471 10s., against £459 13s. in 1897. Nine additions had been made to the annual list of subscribers; but although there had been this increase in the subscriptions, there had been a considerable falling off in the amount received in donations, which was only £105 12s. as compared with over £300 in 1897. The Council thought that the steady increase in the number of subscribers indicated a growing interest in the work of the Society, and a wider recognition of its value in assisting unfortunate architects and their families. They considered, however, that the number of subscribers (a little over three hundred) was small compared with the number of practising architects who were in a position to contribute to the Society's funds. A sub-committee had been formed to consider the suggestion of having a festival dinner in 1900, which will be the fiftieth year of the Society's existence. The proposal carried at the Annual General Meeting last year to increase the number of the Society's pensioners from three to six, and the amount of the pensions from not less than £15 to not less than £20, had been confirmed at a subsequent general meeting specially convened on July 13th, and these pensions had been advertised and allotted to the most deserving candidates. They much regretted to have to record the death of three of the oldest members of the Society, viz., Prof. Hayter Lewis, Mr. J. J. Edmeston, and Mr. T. C. Hine. Prof. Hayter Lewis had bequeathed £100 to the society. He was one of its original members, had served on the Council, and acted as hon. treasurer from 1886 to 1889. Mr. Edmeston had also served on the Council from 1855 to 1870. Five members of the Council had retired, and the Council now consisted of Sir A. W. Blomfield, Col. R. W. Edis, Messrs. H. L. Florence, J. T. Christopher, S. Smirke, W. Grellier, E. W. Mountford, R. St. A. Roumieu, W. Woodward, E. B. l'Anson, E. H. Martineau, E. T. Hall, T. M. Rickman, and R. A. Briggs. The balance sheet and income account were read, and the Council expressed gratitude to the Royal Institute of British Architects for office accommodation.

Professor Aitchison moved an adoption of the report, Mr. Florence seconded, and it was carried unanimously. After this business was finished Mr. T. M. Rickman proposed a vote of thanks to the retiring members. He said they were personal friends of his, and their assistance while on the Council had been of great value to the institution. It gave him much pleasure to step into the shoes of one of them, and he would do his utmost to help on the work of the society. Mr. l'Anson seconded the proposal, which was heartily carried. Mr. Arthur Crow said that he believed he was the only retiring councillor present, and he thanked the meeting for their kind expression of the value of the work done by his colleagues and himself. Mr. Anderson remarked that the society had suffered very much from the loss of those who had rendered good service in the past, but it had been very fortunate, he thought, in securing the services of the gentlemen comprising the new portion of the Council. He proposed that the meeting should thank them. This proposal was seconded by Mr. Z. King, who said that he was pleased to see so many good men left who were willing to carry on the work. The proposition was carried with acclamation. Mr. Currey and Mr. Nash were re-elected Hon. Secretary and Hon. Treasurer

respectively; and the meeting thanked the auditors, Mr. C. Forster Hayward, F.S.A., and Mr. George Lethbridge, for their good services in the past. The Chairman proposed that Messrs. Dawson and King be elected as auditors to the Society, and his proposition was carried unanimously.

A vote of thanks, proposed by Mr. Nash, was heartily accorded to the Chairman, and Professor Aitchison, in reply, said that he was extremely obliged to them for their kind vote of thanks. He had the success of the society greatly at heart, and hoped that the object it was endeavouring to attain would be more widely known. He was sorry to notice the absence from the list of subscribers of the names of many in the profession who were doing very well. He felt sure that if the society was more largely known to the public, and the need for support pressed home on the successful men in the profession, it would not be so much

## SPAIN:

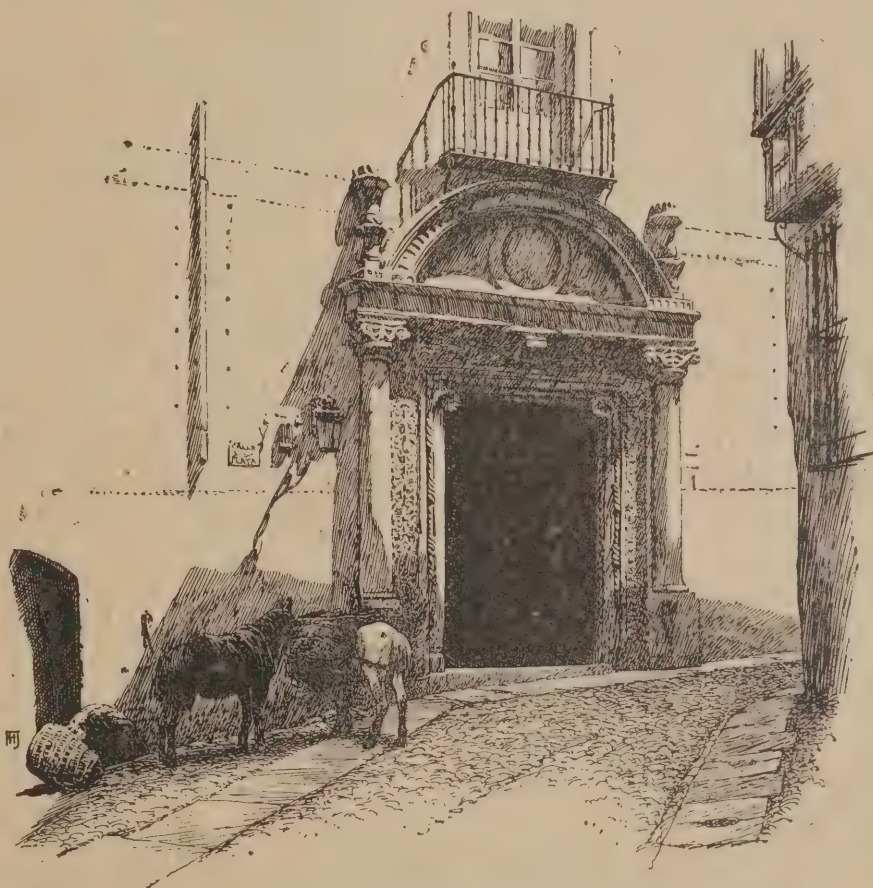
### Its Picturesque Cities and Monasteries.

#### VIII.—TOLEDO.

By F. HAMILTON JACKSON, R.B.A.

(Continued from page 55.)

OF the church towers, that of St. Tomé is the most notable, being the sole remaining portion of a mosque which stood here but was rebuilt at the beginning of the fourteenth century as a church by the Señor de Orgaz, whose descendants were counts of the same name, himself a descendant of Estéban Illan,



CALLE DE LA PLATA, TOLEDO. DRAWN BY F. HAMILTON JACKSON, R.B.A.

neglected. Their profession gave much to the country in which it flourished. It produced things to admire, and showed foreigners that we were a superior race. He was very glad to hear that next year they were to have a festival dinner, and wished it every success.

**The Advertisers' Exhibition** will be open at the Niagara Hall, Westminster, from April 22nd until May 6th next.

**A New Library for Putney** is being erected by Sir George Newnes, M.P., and Lord Russell of Killowen has promised to perform the opening ceremony.

**To Repair Bow Church, Stratford, E.**, the sum of £4700 is needed, according to Mr. C. E. Ashbee (Hon. Secretary of the Committee for the Repair of Bow Church) and Mr. A. M. Poynter (Secretary of the National Trust for Places of Historic Interest or Natural Beauty), who have written a letter to the "Times" on the subject. Of this amount £828 has been collected, and £417 17s. promised. £500 has been expended in the repair of the chancel, and work has been begun on the nave. It is pointed out that the balance in hand is insufficient to carry on the work, and, therefore, appeal is made for further funds.

the great Alcaide, who lived at the Casa de Mesa. It contains a picture by El Greco, considered to be his masterpiece, which professes to represent the burial of Gonzalez Ruiz, which was attended by St. Augustine and St. Stephen in this very church in 1312. The parish priest, Andrés Muñoz, who gave him 24,900 reals to paint it, appears in the foreground—a very determined man, for he compelled the town of Orgaz in 1564 to pay its dues of meat and wine, by action in the chancery of Valladolid. Close to this church is a building, which was the palace of the Count of Fuensalida, in which Charles the Fifth was lodged in 1537, and where his wife Isabel died. Another interesting place quite near is the space where the house of Juan de Padilla and his wife Maria—the leaders of the Comunero Insurrection—stood, which Charles the Fifth ordered to be razed to the ground in 1522. A granite column, with an inscription in honour of Padilla, now stands there.

About the beginning of the sixteenth century Toledo reached the acme of prosperity. Its population numbered 200,000 (now but 17,000 or 18,000) and it contained, besides the cathedral, twenty parish and six Mozarabic churches, nine chapels, fourteen convents, twenty-three nunneries, nine hospitals for



males and one for females. The King's court was unequalled in splendour save by that of the archbishop. The archbishops were a race of mitred kings, great alike in the arts of war and peace, and having the control of enormous wealth; even in 1700 the revenue amounted to 300,000 scudi. When the court was removed to Valladolid, the prosperity of Toledo began to decrease. In 1565 the decree declaring Madrid "Unica Corte" was its death blow.

The archbishop's palace is across the street from the Puerta de Mollete of the cloister, the doorway was made by order of Cardinal Tavera for his hospital of Afuera, but was appropriated by his successor. It contains a public library. The Zocodover is a Moorish market square, so called from "Zoko," "Thursday" in Arabic, the day on which cattle markets were held, and still continue to be held in Morocco. The Christians also held a market here which was exempted from taxes. It was for many years the site of the bull-fight and the auto-de-fé. It is a curious triangular sort of shape, with railings, within which are seats, and trees, which were planted in 840; it is not so picturesque as it once was, though an arched colonnade stretches along one side. Passing through one of these arches and down some steps one arrives at three interesting buildings. The most important of these, the Hospital of Santa Cruz, now the Infantry School, was founded in 1494 by Cardinal Mendoza. The building was finished in 1514, and is one of the first Renaissance buildings erected in Spain. The portal façade is very beautifully decorated with ornamental and figure carving, grouped about the door and windows, in which is one very curious feature, the columns of the architectural framing to the carving above the entrance archway curve round the outside of it in the manner of a hood mould! The two patios are exquisite, and the staircase is transitional between Gothic and Plateresque. Many of the columns are from the ruins of the

church of St. Leocadia. At the end of the street above Santa Cruz is the doorway of the palace of Pedro the Cruel, now a convent. The jambs are covered with arabesques and octofolds, containing the arms of Castile and Leon, a good deal perished from the scaling of the surface of the stone. On the other side is an inn called the "Meson de Cervantes," for Toledo disputes with Alcala the honour of having given birth to that great man. It is a typical Spanish inn, the sleeping rooms opening from a gallery on the first floor, while under the porticos men recline on chairs and read papers or eat their meals, and on the other side of the court yard are mules and country carts. Above the Zocodover is the Alcazar. It has been several times burnt, the last time in 1886, and is now a military college for officers. Three façades still remain, one of 1551, one of 1584, and one of the fifteenth century, the last a good deal altered. There is a celebrated staircase, very grandiose, with steps 50ft. long, made each of one block of stone, but more astonishing than admirable.

St. Juan de los Reyes is near the bridge of St. Martin, close to the spot where the magnificent palace of Cardinal Ximenes stood until the French invasion. It was a splendid Franciscan convent, and was built in 1476, by Ferdinand and Isabella, and dedicated to their tutelar apostle, in commemoration of the victory of Toro, where the King of Portugal was decisively defeated. Outside, on the walls, hang chains suspended as exvotos by captives delivered at the conquest of Granada. The interior consists of one nave of four bays, the westernmost of which has a deep groined gallery, beneath which was originally the principal entrance to the church. The transept is the most noteworthy part of the building. On the walls are enormous shields and heraldic bearings, which are said to be worked in stucco, and at the angles are tribunes pierced most elaborately with lace-like balustrading for the use of the Royal family. The most valuable of the rich decorations were destroyed by a fire at the time of the French invasion, when the monk's quarters were entirely ruined and the church turned into a stable. The cloisters were of the most beautiful workmanship and effect; like the church, of the most florid Gothic, with a profusion of figure sculpture. Of late years the Academy of San Fernando, of Madrid, has been restoring them with the most distressing result!

There are many other most interesting things to be seen in the city, such as the old ironwork, knockers, and bosses of doors, &c.,

which abound in Toledo, carved doors, such as that of the hospital by the door of the north transept of the cathedral, and doorways, such as that of the Posada de la Hermandad, once the hall of a brotherhood; but this article is already too long, and I will only refer before concluding to one or two things of interest just outside the city. Outside the Puerta Visagra is a planted promenade, at the end of which is the great Hospital de Afuera, dedicated to St. John Baptist by Cardinal Tavera in 1540. It has four patios or courtyards with the church in the centre, and covers a square of 300ft. on each side. In the transept stands the founder's mausoleum, the last work of Berruguete, in fact he died at the age of eighty-one before it was finished. It is well-composed and excellently carved, but perhaps a little overcharged with ornament. From this same gate starts the road to the celebrated Fabrica de Armas, which is about a mile away on the Vega. This manufacture dates from Roman times—it was continued by the Goths—the Moors introduced their Damascene system of tempering and ornamenting the weapons, and so early as 852



A COUNTRY TYPE. DRAWN BY F. H. JACKSON, R.B.A.

this identical fabrica was in full work under Abdur-r-rahman Ben Abhakem, though the present building only dates from 1788. The choicest Toledan blades are sometimes packed curled up like a watch spring.

There is a meadow near the station called to this day La Huertadel Rey, in which Alfonso held the Cortes demanded by the Cid (who was made first alcaide of this city among his other honours) before which he accused his vile sons-in-law, the Counts of Carrion, of their scandalous behaviour to their wives. There are some red brick ruins here which contain a few remnants of Moorish Architecture, supposed to have been the palace of a Moorish Infanta.

(To be continued.)

## MALMESBURY ABBEY.

AT the first meeting of the committee appointed to consider the proposed restoration of Malmesbury Abbey, held at the Town Hall, Chippenham, the draft statement for the consideration of the committee was presented, and, among other matters, contained the following:—"It was resolved, first, to undertake the restoration of the church as now used for a parish church; next, to make the ruined portions of the great abbey church safe from further decay; and lastly, if it should seem advisable and funds were forthcoming, to rebuild the three westward bays of the nave, which were almost entirely destroyed in the 16th century by the fall of the western tower. The present arrangement of the interior dates from 1822. Owing to the excellent character of the stonework, the church has been maintained for a long time in good repair, and little else has been done to the fabric beyond the renewal of the outer roofs. But the time has now come when something must be done to prevent impending mischief of a more serious character. The flying buttresses to the nave-vault have in places suffered much from long exposure to the weather, and several of these are in so dangerous a condition that it may be necessary to rebuild the arches. This will not, however, be done unless it is found impossible to repair them otherwise. As there are in all eleven flying buttresses, the cost of making them sound will be considerable; and if taken in hand one at a time a large sum will have to be expended in the necessary shoring, cradling, and scaffolding. The vaulting throughout the church fortunately seems to be in good condition. After the buttresses, the bases of all the walls will need repair, and the parapets must be made secure in places." Mr. Harold Brakespeare is the architect appointed to carry out the restoration of that portion of the Abbey required for use as a parish church.



A COUNTRY TYPE. DRAWN BY F. HAMILTON JACKSON.



## ENGLISH CHURCH ARCHITECTURE.

By H. A. PROTHERO, M.A., F.R.I.B.A.

(Continued from page 70.)

THE cathedral or great abbey type of church appeared in England suddenly and full grown, like Pallas out of the brain of Zeus. Putting aside the cathedrals before the Conquest, of which we know little, the first really great church in England was the first Abbey of Westminster, built by the Confessor, of which some parts still remain. It was a great Norman church of the usual type, with a long nave, aisles, transepts and choir, with apse and chapel, such as you may find abundantly in France, and more rarely in England. At the start our cathedrals and abbeys were virtually French in plan; not indeed entirely so, their proportion being different, and the double aisles never took root with us; but the plan of Canterbury, which was built by William of Sens, is a fair example of a quasi French plan by a great architect who built besides Canterbury a purely French cathedral in his own city.

### English and French Cathedrals.

Now, as I am speaking almost entirely about plans I propose to show you how rapidly and entirely the great cathedrals of England and France went apart in this respect. A French cathedral of normal type has double aisles, shallow transepts, and an apsidal choir surrounded with a corona of chapels. In some cases, as at Notre Dame at Paris, the aisles come out flush with the transepts, so that the cross shape, though visible enough to the eye is lost in the plan. The eastern chapels are also merely continuations of the aisles. At Bourges, one of the finest of French churches, there are no transepts at all; only lateral porches, but the chapels are a little accentuated. At Chartres, perhaps the noblest building in the world, there are transepts, projecting however but little from the line of aisles; and chapels fully developed for small services, round the apse. Now take the English Cathedrals and Abbeys. The present Abbey of Westminster has an almost purely French plan east of the crossing, the Nave only being rather English, with its great length and single aisles. But by way of contrast to our foreign neighbours I propose to go on to two typically English Cathedrals.

### Ely and Lincoln.

Ely as it stands is almost entirely rectangular; a simple long nave, transepts and choir, each with single aisles, and no chapels except as far as they could be formed out of the aisles. You will notice three things about it:—(1) The one little apse that remains belongs to the Norman period, and the form was abandoned by the later builders. (2) When a bigger chapel was wanted it had to be hitched on as an appendix; the general plan of the building not allowing of chapels round the choir. (3) Ely is our one attempt to adapt a central dome to pointed Architecture. It has never quite succeeded yet, and does not entirely succeed there. The Lincoln plan I put before you as that of the typical English Cathedral. It has, as you see, plain rectangular lines, single aisles throughout, and a very long choir with a second transept, leaving space at the east end for a big chapel, and the smaller ones are tacked on here and there when wanted. Just a word or two now on the

### Effect of Plan on Outline.

In skyline our Cathedrals are far finer than the French, and you can see at a glance why that is. Bourges, with no transepts can have no central tower, and the double aisles of other French churches have two faults, one is to dwarf the transepts, and the other to throw up the nave to such a great height that towers must be colossal to show at all. On the other hand the apsidal choirs, with their chapels, are far finer than our straight east ends, as you may see by comparing say Amiens with Ely, Lincoln, or Carlisle. Perhaps the surroundings of a cathedral are

hardly part of my subject, and I must not pause to compare the charming closes in England with their ancient gates and old-fashioned houses with the dusty "place" or ill-savoured bye-street, in which many great foreign churches stand; but I may point out in passing that with us cloisters are the rule and abroad they are the exception. As to

### Structures.

a cathedral or abbey church on a large scale is normally a four-storied building. 1. To begin with, there is generally a crypt under part or the whole of the church above. It may be asked, "What is the purpose or use of a crypt?" Well, if you come to think of it, a building of great size and weight must have something of the kind. As the walls have to be carried down a long way below the ground, a great deal of excavation is necessary in any case. That being so, there was no good in putting the earth back again, and the more sensible way was to make a subterranean chamber, which might serve occasionally for burials, but I suspect more generally for services in winter when the church above could not be kept bearably warm. The crypt of Chartres is used to this day for this purpose, the cathedral above being closed in severe weather. 2. The next story is of course that of the aisles and their arcade. 3. Above that the triforium. 4. And at the top the clerestory for light. As to the triforium, the same question about use might be asked; but the truth is that a triforium came naturally without regard to use, because, if you have sloping roofs to the aisles there must be a space between the nave arches and the clerestory. Then it followed as a matter of course to open the space thus formed towards the church and utilise it as a kind of gallery. Sometimes there are chapels in it, as at Gloucester. Perhaps in bad weather monks took their constitutional in it. One use it has been put to which is now memorable, for it was probably in the Triforium at Westminster Abbey that Caxton set up his printing press. There is one other class of church about which one may just say a word, and that is

### The College Chapel,

because the plan of it illustrates what I said about conformity to use. A college chapel needs no aisles and no nave. Accordingly a normal example has neither, only a choir and transepts forming an ante-chapel or vestibule. In Oxford they were very commonly back to back with the hall, and accordingly have no east window, the end wall being entirely occupied by a great reredos; a feature, by the way, which was not very usual in cathedrals, though there are some half-dozen about the country of which Winchester and St. Albans are the greatest examples.

### West Fronts.

Returning for a moment to a comparison between the cathedrals of England and France—and most of the finest are in one country or the other—two or three points of contrast will strike everyone who knows them well. Of the difference in general plan and skyline I have already spoken, as also of the great dissimilarity of their east ends. Now the west ends differed too in a very marked degree, though there may be a sort of general resemblance with doors and a pair of towers. The fact is, the French cathedral has its main entrances at the west end and at the transepts, while in England a lateral porch was generally preferred; this forms one of the most conspicuous features in our cathedrals, while foreign ones rarely have anything of the kind. The result is that French churches have magnificent west doors; sometimes, as at Amiens and Bourges, five great portals in a row. We have comparatively little to show in that way, and this fact reacts on the whole character of our west fronts, which are very usually quite the poorest and least effective part of the building. Of course, there are exceptions; Wells and Peterborough are magnificent, but they serve as well as any others to illustrate the relative insignificance of the doors. Of the fabrics I will say no more, and can only very briefly touch on the furniture. The splendid woodwork (which our churches have

retained through the storms of the sixteenth and seventeenth centuries much better on the whole than the French have) is mostly of the fifteenth century; and it is a strange thing that almost every little village church, whether in the agricultural counties of Devon, Somerset, or Norfolk and Suffolk, or among the fair hills and valleys of Wales, contained treasures of woodwork in the form of screens, stalls, pews or roof, carving such as we try in vain to reproduce. So lost was the art, that ignorant people staring at these gems of native workmanship concoct stories about their having come over from the Low Countries, or been fished up as trophies of the Armada! As if a fighting navy carried cargoes of church furniture—but there is no nonsense people won't talk. The real truth is that in the fifteenth century the art was universal, and these beautiful things must have been made by the village carpenter, and paid for by the Parish Guild.

### A Period of Decay.

In the sixteenth century it all came suddenly to an end. No more churches were built; no more glass was painted; no more wood was carved; great mansions arose in the new style of adapted Italian Renaissance; but the churches, stripped bare and whitewashed, entered on a long career of gradual decay. We may sum up their later history in a very few words. In the time of Elizabeth a very stately kind of *tomb* came into vogue. There was also a good deal of good Jacobean woodwork in the times of the Stuarts—pulpits, pews, panelling, galleries, and a few fine screens. Wren's churches, built mainly under Queen Anne, followed various plans—some being mere rooms handsomely fitted with woodwork and carving by Grinling Gibbons, some very beautifully planned with columns and a dome, the most perfect example being St. Stephen's, Walbrook. Of the Georgian period and the Gothic revival of our own day I have no time to speak.

### Use Determines Plan.

I have passed very rapidly over a very big subject, and will now only impress on you once more what I said at the beginning, that from start to finish *everything about the plan or structure of a church was dictated by the use to which the church was to be put*. A little church with a little congregation only wanted a nave and a little chancel; if more people wanted to come, aisles must be built for them. Small services entailed chapels; choral services produced larger chancels; the preaching friars required big naves where all could see the preacher, and their churches are in a way the parents of the galleried churches of the Georgian period, and of the typical Non-conformist places of worship, in which it is essential that the minister should be visible and audible to everyone in the building; a necessity which hardly exists (or at any rate exists to a very much smaller degree) in buildings where liturgical forms are in use. That is all I can say to-night. I hope you will bear with me if I have spoken mostly of the dry bones and anatomy of churches, rather than of the graces and beauties of Gothic Architecture—which nobody can love more than I do. For plain facts are, after all, worth knowing; and it is not until we know the recesses of its structure that we can really appreciate the beauties of a building.

**The Marble Plan of Rome.**—The destruction of the wall near the Palazzo Farnese is being continued, and eighty more pieces, large and small, of the ancient marble map of Rome have been discovered. The whole area of the marble map was about 500 square yards. It was constructed between the years 203 and 211 of the Christian era, and gave an exact idea of the form of the ancient city. Altogether, about one-third of the map has been recovered, or rather more than 120 square metres. As soon as the whole of the Farnese wall has been destroyed and all the fragments have been collected, an attempt will be made to reconstruct all that has been found of the map.



## COTTAGE HOMES AT MIDDLEWOOD, NEAR ROCHDALE.

By ESTHER WOOD AND G. LL. MORRIS.

FEW tasks could at first sight be less inspiring than to build homes for an ever-shifting population of citizens drawn from the roughest and least domesticated classes, vagrants to whom the words "home" and "school" are alike synonymous with "prison," and to whom such a phrase as "home life" means worse than nothing. The architect, even if his immediate clients, the "board" or "committee," proved fairly sympathetic, is apt to feel that he is building for an ignorant and indifferent mass of residents, none of whom will ever give a thought to his work and upon whom its æsthetic qualities are absolutely wasted.

Unfortunately this first-sight view of the question, this idea that "anything is good enough for a pauper institution," has produced a whole generation of hideous buildings which are still the eyesores of Marylebone, and it has only been partially shamed out of existence by the writings of Dickens and similar pioneers of poor-law reform. These, and the general humanitarian movement of the last half-century, have given us a higher conception of national charity, and we have begun to see that the outward character of our public buildings should be an index of the feeling of the whole people towards the object for which they are built.

When the evils of industrial schools began to be realised, the experiment of distributing

the children to live in working-class families—in other words, the boarding out system—was widely tried. This way, all things being equal, seems by far the best, the adoption of a child by a family securing at once the advantages of home life. Unfortunately in practice this system broke down; it was rare, indeed, that foster parents of a suitable character could be found, and friction was frequent between the children of the house and the stranger. It was also costly and difficult to exercise proper supervision over children in a home in which the prospect of regular maintenance money from the Union is probably the chief inducement for receiving them, and even if this system had been satisfactory, it only touched a minority, as guardians were only allowed to board out orphan children. Another system that has received much attention is that of scattered homes; this is the next nearest approach to home life, and reduces the official character to a minimum. The scheme generally is to build single homes here and there throughout a fairly wide district; the objections are: (1) A too great expenditure of labour by reason of being spread over such a large area, and (2) the supervision which is almost as difficult as in the "boarding-out system."

The next step was the building of cottages for the children to inhabit in groups, each with a responsible "house-mother," in addition to the girls' and boys' homes, there was the receiving ward, the school, chapel, and the hospital, all being brought under complete control; instead of a homely character it became institutional, with the drawbacks which attend charitable institutions, and too much officialism. The children were all clothed in a similar fashion, and kept safely

within the boundary walls, except during certain appointed hours, and generally the tendency was to regulate and order the lives of the children in a dull and uninteresting routine of duties, likely to drive out any sparks of individuality which they might possess. It is, however, beginning to be recognised that remedial measures of some kind must be adopted in place of these repressive ones, and more especially should this be so in regard to young lives; every effort in the way of giving to each child the groundwork as it were of his or her own life is a step towards the making of good citizens.

The experimental efforts made in this direction by the Sculcoates Union, at Hessle Road, Hull, by the Port of Hull Society at Newland, at Gateshead, and by several other bodies in the Kingdom, have had excellent results upon the health and intelligence of the children, and the Rochdale Guardians now have a similar scheme in hand. They have endeavoured to adopt a middle course in the laying out of their homes, and without altogether sacrificing the advantages of grouping the buildings together, have been able to impart a certain increase of homeliness, by a careful, but picturesque planning of the cottages upon the site (Fig 1). The children attend the local voluntary or board schools as if they were members of an ordinary family, and there is no distinctive dress or uniform to mark them off in an unpleasant way from their school-fellows.

The site is at Middlewood, about three miles from the town of Rochdale, and less than a quarter of an hour's walk from the village of Wardle on the one side, or of Shore on the other. It is surrounded by hills on three sides and approached by a road on the south which runs through the narrow valley at the west and east corners. Some nine or ten buildings, comprising pairs of cottages, superintendent's house, receiving house, workshops and stores, are being variously grouped in a pleasant and interesting way. The architects (Messrs. Butterworth and Duncan, of Rochdale) have aimed at making the little colony appear less like an institution than like a part of a pleasant village, the cottages being of irregular plan, and so arranged as to overlook a pretty glen, while their spacious setting gives all windows abundant light and air. The moral influence of country life has, probably, on sentimental grounds, been largely overrated; the wise guardian will rather depend upon the immediate surroundings and daily habits of a child, and the active interests afforded him, to do the larger educational work than that of school hours. It is here that the architect finds scope for enterprise. The homes must stand hard wear and constant traffic, the stairs and entrances must not be dangerous to young and careless children, nor the mats, fenders, &c., and other furniture, easily tumbled over or upset. At the same time each house should be beautiful enough to give the children a pleasure in their home and an interest in keeping it orderly and clean. The architect must remember that he is building for growing girls and schoolboys, not for the passive life of almshouses and harbours of refuge for the infirm. The whole aspect of the place should be such as to give an incentive to careful use; neither so soiled as to involve continual labour—especially as the children will be expected to do a good deal of the housework themselves—nor on the other hand so bare and glazy that no trouble need be taken. In the appointments of the dwelling the children should be able to learn something of the natural properties of materials, the beauty of the grain in wood, and of smooth or polished metal.

In the designing of this educational colony at Rochdale provision for direct teaching is made by a substantial two-floor building devoted to workshops, separate from the cottages, and including a well-appointed carpenters' room, a smiths' and plumbers' room, another for tailors, and another for shoemakers, each with cutting-room and store attached. The technical side of the education is, therefore well looked after; at least, in the boy's case. It would have been pleasing to see some equal provision made for the manual training

FIG. 1. BLOCK PLAN.



A Girls' homes. B Superintendent's house. C Stores. D Receiving and spare home. E Boys' homes.  
F Spare homes. G Workshops. H Wash-houses. K Farm.

MESSRS. BUTTERWORTH AND DUNCAN, ARCHITECTS,





FIG. 2. SUPERINTENDENT'S HOUSE AND STORES.  
GROUND PLAN.

MESSRS. BUTTERWORTH AND DUNCAN,  
ARCHITECTS.

## COLOUR.

BY HUBERT C. CORLETTE, A.R.I.B.A.

AT the fortnightly meeting of the discussion section of the Architectural Association, Mr. W. B. Hopkins presided in the absence of Mr. H. J. Leaning, D.S.I. Mr. H. C. Corlette read a paper on "Colour," of which the following is an abstract:—

There are three questions with which we are confronted when we wish, as architects, to have colour associated with the buildings we design. The first of these requires an answer which shall tell us how we shall satisfy this desire. The next asks where we may legitimately introduce what we desire to employ. But, perhaps the most difficult of all is to decide upon the method of treatment by which the decoration shall be done. This last involves many things, which everyone must settle for himself. It asks what are the methods to follow, what the media to be employed, how decoration shall be introduced, the nature of drawing and design, and the qualities of colour that should be adopted for effects we wish to see. These are the points a lover of colour must consider if he wishes to do good. His aim should never be to seek applause, but to do his best with the faculties he possesses.

### Structural and Applied Colour.

In asking ourselves how we shall introduce colour in works of architecture, we must consider whether it shall be done by using coloured materials, or by applying such materials as will introduce the necessary colour. The two methods combined are really necessary for a completely satisfactory result. Of coloured materials used structurally there are many examples to be found in many parts

of England. We can see how stone and flints have so been used for this purpose in the Parish Church at Worsted and the old Guildhall at King's Lynn. Essex gives us instances where brick, stone, and flint are associated on one building with very beautiful results. There is no reason why white brick should not be used, as it is sound and lasting, and possesses a "good ring;" also it is cheap, but not necessarily nasty. The yellow or dun-coloured stock brick is also a good colour, if used well, and with some of those silver-grey bricks introduced into a wall of it excellent effects may be obtained. Tiles for roofing are too often red, but there is no reason why we should not resort to white ones sometimes, and we should do well to decline to use so frequently the half shining, dead-surfaced purple-red ones. In the past it was frequently the custom to use local materials to satisfy local needs. This practice has not been altogether discarded, but it might with profit be carried out more often. Although Sir Walter Scott writes of the grey walls of Kenilworth, they are red, because stone of that colour was found in the district. As architects we must devote more attention to the subject of structural colour, for it is in this province we depend upon our own resources. Byzantine and Italian provide us with examples of what was done in the past, but to be more recent, we can see how thoughtful and effective instances can be found in London by studying the north and east fronts of the Law Courts. On this red brick and a grey and white stone have been used. Terracotta can be used in conjunction with brick of a beautiful red with good results, as can be seen in the Exhibition Road, in front of the South Kensington Museum. Age and situation, of course, do much to improve materials which originally have been glaring and self-assertive.

### External and Internal Use of Colour.

Throughout centuries colour has been applied as a means of decoration in ways so numerous that to mention them would mean the compilation of a prosaic catalogue. It was thought at one time that no work of architecture was complete if it was not in some way treated with colour. We all know that the Egyptians used colour on everything to which it could be applied; but they were favoured, like all southern artists, by conditions of climate which allowed freedom of design within certain limits. The Greeks improved on the methods of the Egyptians and coloured the designs in relief of those which were cut back from the surface as incised work, leaving much of the native grey or red of the building to play its part as a ground for the whole of the more brilliant decorations provided by the details. We may, then, use colour either structurally or by application to a material not possessing sufficient colour of its own. When we take up internal decoration we have nothing to fear from climatical conditions,

(To be continued.)

**Denny Cottage Hospital** was opened on Tuesday, last week, by Lieut.-Col. Logan. Its erection has cost £900.

**Phillipsville Estate, Middlesbrough**, owned by Councillor Theo. Phillips, is to be laid out and offered in villa sites. The plans for this work have been prepared by Mr. A. F. Newsome, F.S.A., architect and surveyor, Albert-road, Middlesbrough, and show the estate laid out for some 200 detached and semi-detached villa residences.

**West Stafford Church** has just been re-opened after restoration and enlargement. Mr. C. E. Ponting, the diocesan architect, has had charge of the work, which has been carried out by Mr. Hoskings, builder, of Hungerford. The enlargement has been effected by extending the nave eastward. In the chancel a new altar tomb, and stained glass window to the late vicar—Canon Reginald Smith, of whom the extension is a memorial—have been placed. The tomb is the work of Messrs. Harry Hems and Sons, of Exeter, and the window is by Messrs. Burlison and Grylls, of London.

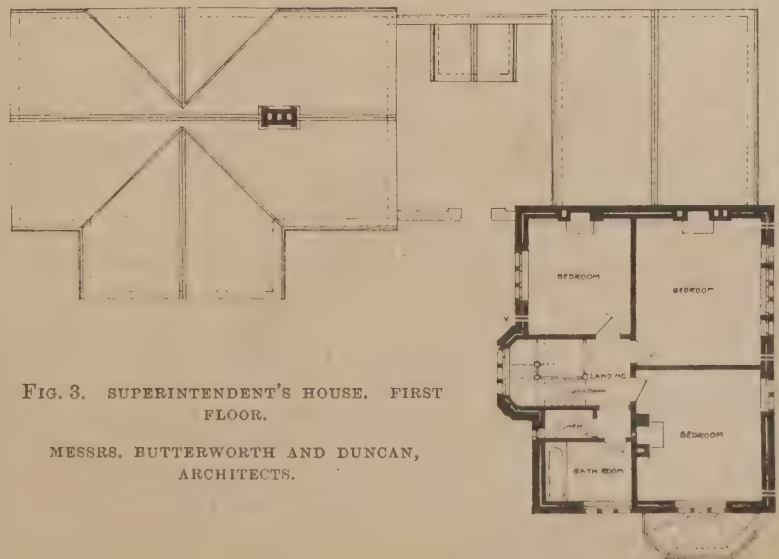


FIG. 3. SUPERINTENDENT'S HOUSE. FIRST FLOOR.

MESSRS. BUTTERWORTH AND DUNCAN,  
ARCHITECTS.



and it is here we find opportunities for our faculties for providing the necessary field for those who possess the capacity to satisfy our aspirations.

### Grounds.

The grounds upon which we may begin our operations call for consideration under two heads. First, the material and texture of the ground, and its capacities for producing, sustaining, and showing colour; and then the colour and method of treating the ground upon which the work is to be done. I will not discuss these points in detail, but will merely recall to your minds some materials which are ordinarily the ground upon which we may ask colourists to provide us with design. The staple material in Egypt was apparently granite, but they also used brick with diversely glazed surfaces. Burnt clay has always been found an excellent foundation for colour. The ordinary red brick with very little preparation was used in the case of a large painting in Albi Cathedral in the South of France. This work was executed in the fifteenth century, and was done directly on the brick surface of the great circular tower piers within the nave. It has stood all these centuries without decay, and the brick pointing lines, which are clearly visible, are a help to the texture and general effect of the whole scheme. Plaster, prepared for fresco methods, tempera, or oil, has been found very good material. A thin coat of plaster over brick or stone was a favourite ground in the middle and later ages for both tempera and oil. Another point to be considered in regard to all grounds is that of the colours they shall take as a foundation on which the designs are to be worked out. We must consider here the scale and tones of all other colour associated with the ground. The Byzantine mosaicists favoured very much a gold ground. At Albi there is one of the finest decorated vaults I have seen, with a beautiful, deep grey-blue ground, upon which a great deal of white has been used in the conventional patterns covering it. Heraldic colour is of great value in a scheme of decoration.

### Drawing, Design, and Colour.

These obviously depend upon the colour of the ground we have to work upon. If it happens to be white we have more liberty of choice than when we have to deal with a coloured surface. Each decorator will best decide for himself what nature of drawing is best adapted to certain situations, but those parts distant from the eye of a spectator require different dealing from those nearer to him. Good results can be obtained by a good use of simple line and broad uncomplex treatment. A designer must be permitted to interpret his ideas in his own nature and characteristic manner, for if he is fettered by fixed conditions in his work it is likely to become spiritless. In regard to colour, it is essential that this should be simple, conventional and flat; that is, without modelling or shading. It need not necessarily be a dead colour, but it must be broad and quiet in feeling. This result can be obtained by limiting ourselves to the use of a very restricted palette of three or four colours. To figure work the same principals may be applied, unless it is close to the floor. The choice of colour is an important matter, and fortunate results can be obtained by selecting primaries to play the most important part in the whole harmony, with the assistance of white and black. One primary with its complementary secondary, or two primaries and a uniting secondary, helped with white or black, should be sufficient to produce beautiful combinations. We need true, pure, and beautiful colour in decorative design, such as Burne-Jones and Morris helped to give us at the time of the so-called Renaissance of the fifteenth century. It should not be overlooked that, however we may decide to work, it is necessary to keep colours which are juxtaposed all in a related key of harmony.

### Source of Ideas.

But where are we to find ideas for all our schemes of decoration? Certainly not by

copying or adapting what others have done, or by trying to revive what some are pleased to call the "Styles of the past." There is only one source of inspiration open to us, and that is to be found in all the works of created nature. Subjects may be derived from Divine action among men, from secular and ecclesiastical history, and from myth, fable, and tradition, if we will. But the proper interpretation of these depends upon our knowledge of, and capacity to tell, what we have learnt from what we see and understand in nature.

### Realism and Conventionality.

Whether this can be best managed by realistic representations of any subject, or conventional interpretation of a set of objects, will be decided by a consideration of those principles I have endeavoured to justify. Realism in clever hands may almost become deception, which we must avoid, as that conventionality, based upon ignorance and bad taste, becomes distortion. Generally, decorative work should interpret by a conventional use of the suggestions to be found in natural forms, while it is to pictorial design in colour that we must leave the representation of forms as they are.

### Methods and Media.

There is a kind of mosaic which I have seen, so far, only once used, and it then suggested to me that we might well take up the method with advantage. The instance was on the side wall of a plastered outhouse in a remote village in Norfolk. The material in the setting sun looked very beautiful, and I was surprised to find on coming nearer that the effect was produced by bits of old pottery, broken china, and glass of various colours. The use of glass, stained or clear, and mosaic, as a method of adding colour to Architecture, is one of most beautiful and reliable media with which a colourist can deal. With regard to glass, it should always be recognised that it is but a part of one united scheme in which the due relations of scale, whether of size, treatment, or colour, must be maintained.

### Architect and Craftsman.

The architect should always, in my opinion, invite the craftsman who works with him to try and enter into the spirit of his own work, and though such a man may be an interpreter, he should be allowed also the privilege of exercising his mind as helping inventor. There must be subordination to the leading oversight of the guiding one, but subjection is not and never should be interpreted to mean slavery. As in any constitution for larger purposes there must be rule from a centre, if the action of law and government is to carry a purpose into effect, so it is in the things of Art. A head of a State should not be too proud to seek the opinion and counsel of those who are qualified to be his advisers in special matters, and, though it is his duty to rule, it is also his privilege to confer with those he is bound to guide.

### Individuality and Compromise.

By this means every individual is led to realise his position as but one of a body with a common aim, and if he feels this he is enabled to do his part towards expressing some definite ideal. We are all at times called upon to subject our own individuality, and it is well if by this compromise we may the better act for the benefit of all.

### Features of the Discussion.

When the paper had been read the chairman called upon Mr. Smith to open the discussion, and his opinions were followed by others, from Messrs. C. H. Strange, Cole A. Adams, A. L. Shuffrey, Hine, and W. B. Hopkins. Mr. Smith expressed for the meeting the thanks they felt were due to Mr. Corlette for the paper he had read, and also for the numerous coloured pictures he had brought to illustrate his remarks.—Mr. Hopkins seconded the proposal.—Mr. Smith then went on to say that he thought the materials used nowadays were very bad. He thought that white, red bricks, and tiles might be made to vary a little. The red brick used by the speculative builder, he said, was unequalled for nakedness. He

thought experiments in trying various mixtures of clay would be of use. He cited an instance of the effect of the sun on patterns made by broken green glass bottles. He said Prof. Aitchison, R.A., in a paper on Greek Art, insisted very strongly that the Greeks used primary colours, and red seems to have been largely used, and to have been primary to a strong degree. He agreed that the architect and craftsman should be more in unison. He thought mosaic work should be plain.—Mr. Weymouth said that he thought the public were beginning to appreciate the use of variety of coloured materials.—Mr. Adams had noticed that white bricks discoloured in time. He thought that with regard to tiles, the less said the better. He was of the opinion that good effects could be attained in the disposition of slates. With regard to stained glass, if there was colouring in the interior of the building one ought to be careful that the two methods did not clash.—Mr. A. L. Shuffrey referred to the anxiety of young architects to put all the knowledge they had into effect on their first building. With regard to glazed materials he was not in favour of them at all. Materials, in his opinion, should be so selected that the hand of time had a mellowing and improving effect on them. He did not think the soot and dirt of London hurt red brick. If, he said, we studied nature at home instead of going abroad, there would be less likelihood of going wrong. He did not agree that primary colours should be used in large masses; secondary colours, he said, were of more use for larger surfaces. With regard to magenta it was, to him, not unpleasing when used in such a way that one forgot it was magenta.—Mr. Hind in the course of his remarks supported Mr. Corlette's views. Mr. Corlette briefly replied to the foregoing remarks on the grounds he had taken up in his paper.

**The Proposed Restoration of Quarnford Church,** near Buxton, will cost from about £1500 to £2000.

### Condition of the Engineering Trades.

—According to the report of 1898 of the general secretary of the Steam Engine Makers' Society, there has been a rapid recovery from the effects of the engineering trades' lock-out, which lasted six months in 1897. The return for the month of May, 1897, showed 335 members on out-of-work donations, and in May, 1898, the number had got down to 83, which has been about the average up to the present time. The secretary states that this has not been surpassed in any previous year.

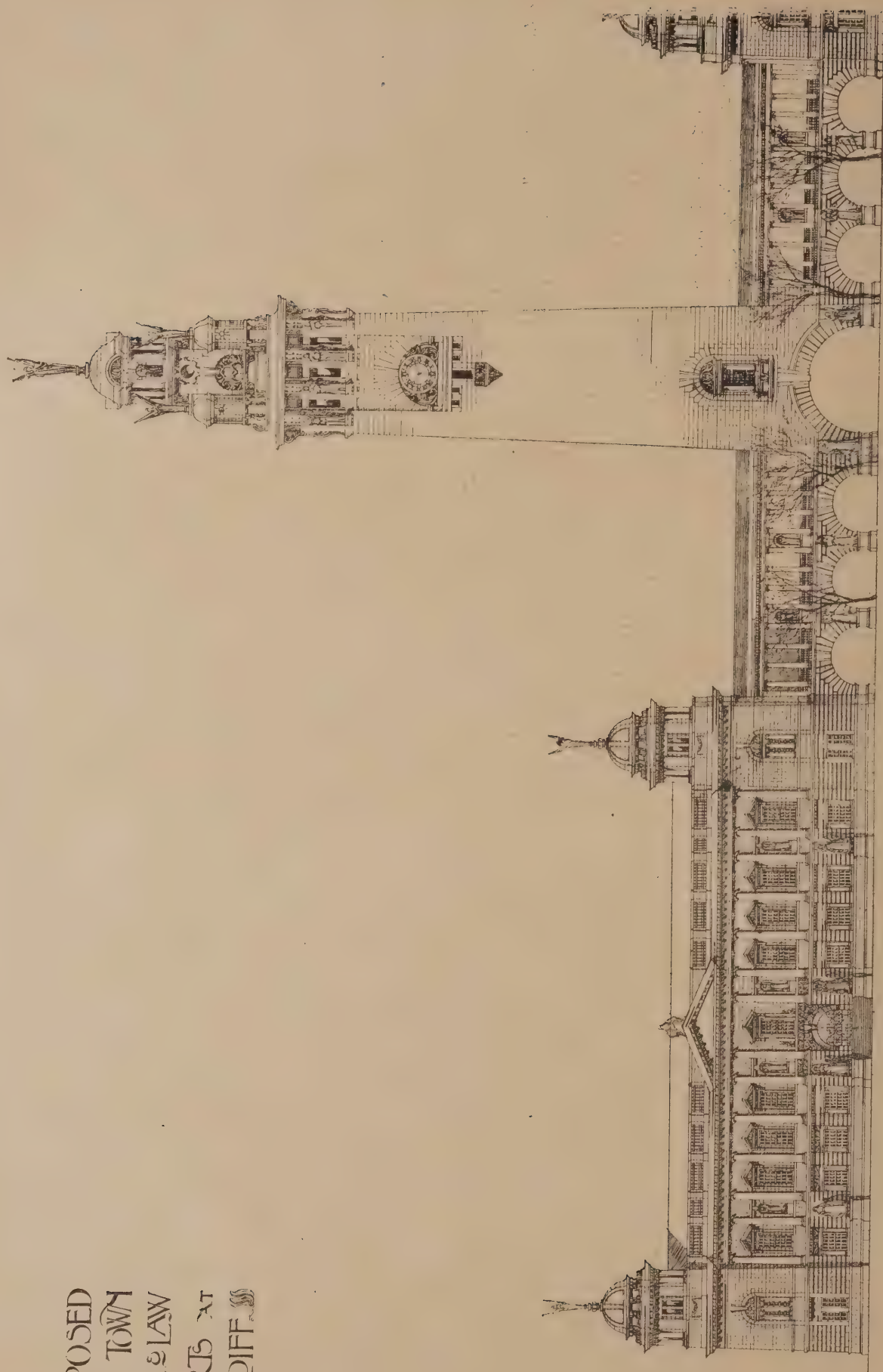
**A Claim for Work Done.**—Before his honour Judge Martineau last week, Asher Collins and Alfred Piper sued John Vinal for £24 balance for work done.—Mr. Prince, for the plaintiffs, said that they were working builders, and did the bricklaying work at some houses at Seaford for the defendant, and the question was whether plaintiffs were to be paid £28 or £25 per house.—The plaintiff Collins was called, and said the agreement made with the defendant was that they should do the bricklaying and slating work at nine cottages for £28 a cottage.—T. Morling, Clinton Place, Seaford, said defendant's foreman gave him to understand that the price was £28. That was a fair and honest price, and the work could not have been done at a profit for £25.—Mr. Dawson, for the defendant, called the latter's manager, who said the arrangement with the plaintiffs was that they should try to do two of the cottages first at £25. When they had finished them plaintiffs asked if they could go on with the others, and were told that they could, nothing further being said about the price. The defendant was also called, and said he did not authorise his manager to go to £28 a house, but in cross-examination he admitted having paid plaintiffs £27 a house for similar work at Newhaven, and denied that they had a great deal more work to do at Seaford.—His Honour said his own impression was that the price for the first two houses was to be £25, and that nothing was afterwards said about the price for the others. There would therefore be judgment for defendant.



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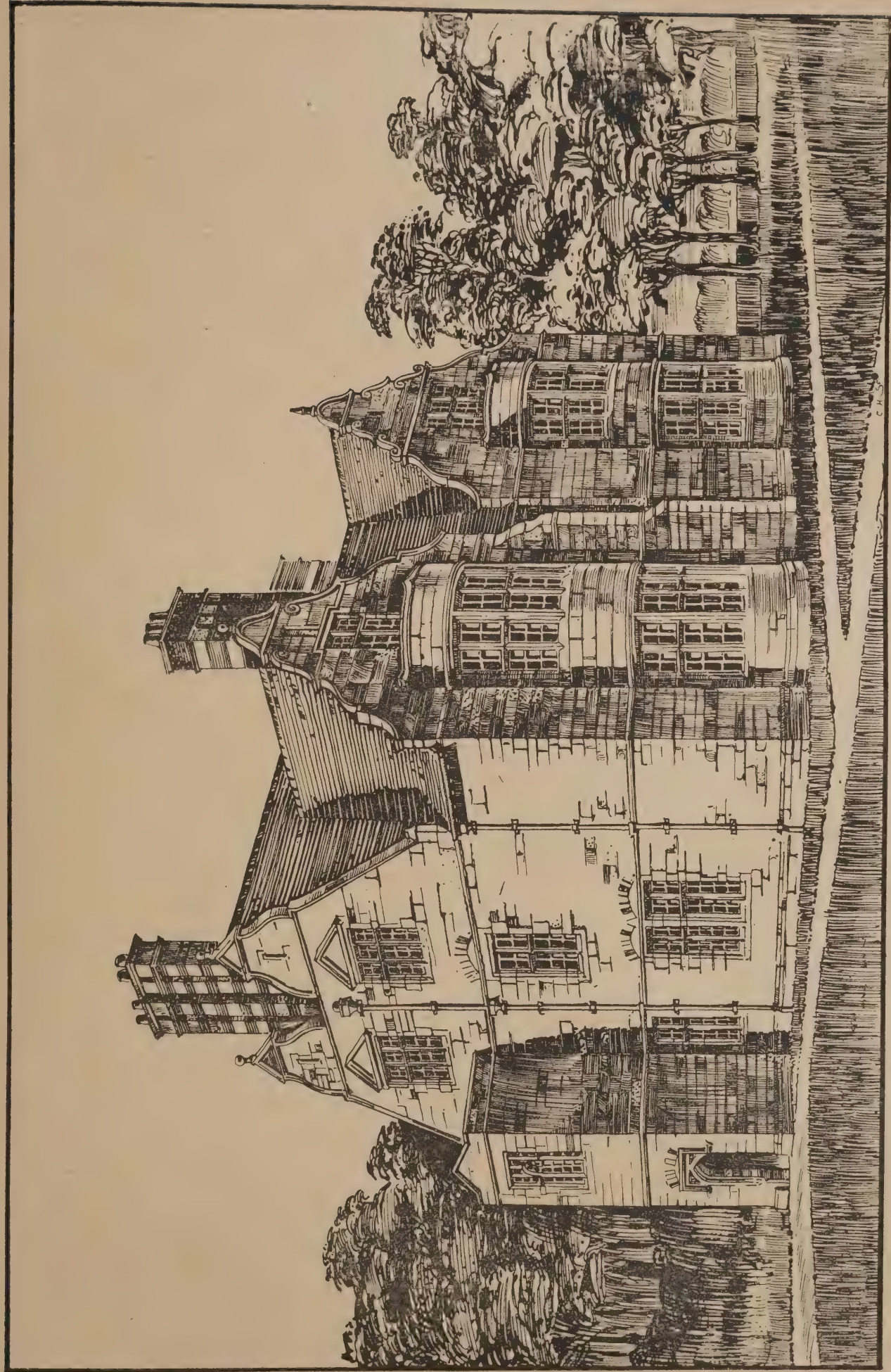
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TOWN HALL.





THE MASTER OF BALLIOL'S HOUSE, OXFORD: THE ENTRANCE FRONT. T. G. JACKSON, R.A., ARCHITECT.

DRAWN BY C. B. QUENNEL.



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## PUBLIC BATHS.\*

BY A. SAXON SNELL, F.R.I.B.A.

(Continued from page 75.)

I HAVE had two long and interesting letters from a Superintendent of Baths in a Midland city. I shall have occasion to refer later on to one or two points he brought to my notice. But among other matters he described the soap bath of his establishment. He says in his first letter: "I like the increasing favour shown for the former [shower] kind of bath, and should be especially pleased to see it supersede our present arrangement of a soap bath, as well as the slipper, as that can scarcely be considered a proper system which only allows one change of water for as many as forty persons for each change (I am referring here to the soap bath). The same bath-room fitted with automatic feeding showers, having a regulated warm temperature, also a separate corner for a cold shower, would hardly use any more water, and even if all the dozen I have seen in at once, were under the showers, they would each at least have clean water." Later on, in answer to my request for

## The Dimensions,

he says:—"The dimensions are 8ft. by 5ft. by 18in. depth—usual depth of water 12in., therefore equal to about 240 gallons. A serious drawback, which I did not like to mention in my last, is the fact that there is no shower with it, so you may imagine the bathers plunging into the bath to clean themselves of the soapy water, especially after some dozen or so of moulders, mechanics, &c., have washed themselves." He adds: "I am forced to believe that the soap bath is also a serious competitor of the slipper on account of the cheap prices of the swimming." Apparently the canny mechanics of the city think a twopenny swim, with the preliminary wash in this delectable soap bath thrown in, very good value for money. But fancy that soap bath after the third man has washed!

## The Soap Bath

is not necessary only for lower-class people. In warm weather, people who do not indulge in a daily bath (and even some who do) are unable to keep their body—and especially feet—in just that state of absolute cleanliness in which—in deference to their fellow bathers—they would wish to be before entering the common bath. Then, too, a cold douche is invigorating after the comparatively warm temperature of the bath. With respect to swimming baths, I have only to add that they should be lighted by a large lantern with side-lights to open in the roof, and the walls should be lined with impervious material, glazed tiles or bricks for preference. A bath cannot be too well-lighted. For ventilation—and a bath wants plenty of it—it is desirable to have an electrically-driven fan. I should add, by the way, that these fans give a lot of trouble, because they are so soon affected by the dampness. Perhaps some form of water-driven fan will yet be devised.

## Warm Baths.

We have next to consider the warm baths, provided only for washing purposes. The present form is almost invariably the ordinary slipper bath as it is called; but—to be prophetic again—I think the days of its general use are numbered. Some of them will always be required, and it is worth while to describe them. The best form is, of course, the porcelain enamelled bath glazed inside and out, and sometimes with a glazed rolled edge. Personally, I always use those glazed inside only, and with a wood top (teak for preference), because I think the greatly increased cost of outside glazing never worth the better appearance; and a roll edge, although cleanly, is uncomfortable, and may be dangerous. It also adds even more to cost. The usual length is 5ft. 6in. to 5ft. 7in. from out to out. These baths are usually enclosed in front, for reasons which have never quite convinced me, and I

am now omitting the casings. Each bath is fitted up in a very small room, which has an area of 36ft., but better 40ft., or as much larger as can be afforded. The walls are generally built up of slate slabs, 6ft. 6in. to 7ft. high, sometimes left plain, but more often highly finished in enamelling. Marble is also employed, but I do not recommend it, and for this reason, it is so necessary to keep these places absolutely clean that any surface which will hide even the appearance of dirt is to be avoided. Inversely, they should not only be clean, but look it, to inspire confidence. It is impossible to see at a glance whether marble is or is not perfectly clean. Various other forms of partition wall are employed, and notably a thin brick wall, glazed both sides.

## I Prefer the Slate,

because with its use no woodwork at all is necessary, even as door-posts. Each bath should be fitted with hot and cold water taps, fixed on to the front partition with the valve spindles taken through, so that the attendant outside can turn the water on or off. In the same way the waste valve should be operated by the attendant from the outside, but it is desirable to have the means of doing so also from the inside of the room. The floors of these compartments should, of course, be impervious to wet—tiles or mosaic if we can afford it, granolithic for economy. A disagreeable experience has taught me that these floors should be laid to fall. Bathers sometimes splash the water over the sides, and the baths also overflow at times. Mr. Hessel Tiltman dwelt at some length upon the

## Shower or Rain Douche, Baths,

which are in use in many Continental towns; and advocated their adoption in this country. At the time, I mentioned that some form of it had been successfully inaugurated by a northern manufacturer for his workmen several years ago. I have since refreshed my memory, and will refer any one who is interested in the details to a paper read before the Sanitary Institute Congress in 1888, at Worcester, by Mr. Charles Clement Walker, F.R.A.S. The main idea of these baths is that the bather shall not be compelled to bathe in water which has already been fouled by what we may describe as the first washing of his body, but that every drop of water, as it becomes soiled, should be carried away at once. This idea was

## Adopted over Twenty Years ago

by Mr. H. Saxon Snell for lavatories in a poor-law industrial school. It has been improved and modified since in many ways, but the principle remains the same. Another advantage of such baths is that they could be erected at about half the cost of the ordinary slipper bath, and it would be possible, therefore, to make a lower charge for their use, a matter of very considerable importance in the great work of reducing the numbers of that class which is facetiously dubbed the "Great Unwashed." It is, however, very hard to wean the public from old-established customs, however salutary the innovation proposed. It is a good beginning to provide a hot and cold shower to the slipper baths, and in time, no doubt, we shall discard the bath itself. I say we, because I think most of us have a sneaking regard for the comfortable warmth of a casing 4in. thick of warm water for a few moments, and some of us love

## The Shower

—the cold shower—more in theory than in practice. Before leaving the subject, it is well to note the necessity of light and ventilation and plenty of both in the room. The amount of vapour alone given off from the baths will soon make everything clammy and the atmosphere foggy unless it can be quickly removed. A lantern with opening side lights is generally sufficient. I do not propose to deal with medicated, sitz, vapour, and other special baths, beyond noting that one or two may be included with advantage. Turkish baths in a public institution are as yet exceptional, but, no doubt, when their hygienic properties are more widely known, and, I may add, when they can be indulged in more cheaply, no public baths

will be complete without them. By the way, why should it be considered necessary to adopt exclusively eastern forms and decoration in Turkish baths? They are none too soul-inspiring, and are certainly not "at home." Personally, I propose to break through the tradition in the Stratford Baths, and try the effect of the latest new humour in design. A fair-sized waiting-room, which should be comfortably furnished, is necessary to each set of baths, for there is much waiting to be endured at certain times in all establishments. Water-closets, in the proportion of, say, one to fifteen baths, should be provided, and they should have direct and

## Separate Light and Ventilation.

The Committee requested me to read a paper on "Public Baths," and I have assumed that the omission of "washhouses," which are almost invariably associated with the subject, was intentional; and I felt profoundly thankful, because the subject of washhouses is a fairly large one in itself, and could not be adequately dealt with as part of another. Every set of public baths must, however, have a small, completely-fitted laundry as part of the establishment. This is required entirely for washing the hundreds—may be thousands—of towels and bathing-dresses used by the bathers. Towels, as they are used, are thrown by the bathing attendants into receptacles which are periodically emptied and taken to the laundry, washed, and returned to the store or the pay office. It follows, then, that there should be

## Easy means of Communication

between the departments, and this is best achieved by subways. If it is possible to have a shoot from each department in these subways a basket or trolley can be placed under to receive the dirty towels, and some labour is saved thereby. With respect to the laundry-room itself, it is only necessary to say that the floor should be paved to falls, the walls should be faced, at least 6ft. or 7ft. high, with white glazed bricks, and there should be ample light and ventilation, mostly from the roof. The machinery should include the usual rotary washing machines, centrifugal wringers, steeping and rinsing tanks, and a few washtubs.

## Steam-heated Drying Horses

are also required, and if there is not room for a fair number (and they take a disproportionate space) a cylindrical steam-drying and ironing-machine will do a very large amount of work for the space it occupies. As the machinery must be power-driven, it is always desirable to have the laundry not too far from the engine room; but it will be found desirable to keep the two departments quite separate, if women are employed in the laundry

## Engine Room and Boiler House.

The engine-room and boiler-house should, in my opinion, be quite show-places in their way. Until quite late years, these vital parts of the establishment have generally been consigned to odd corners or dark basements; in fact, anywhere where the ingenuity of the engineer can possibly fit up his boilers, &c. Only two or three years ago I went over a building, but just then erected, which comprised public baths, a gymnasium, free library, and technical institute, in which the necessity of a boiler and engine-house had apparently been forgotten; indeed, I believe actually so. So the boilers were put in the subway, under part of the swimming-bath hall, and the engines and electrical plant were arranged in a line along the narrower part of the same subway. The towel laundry was 7ft. 6in. high, with no light but what could be obtained from little areas, and the communication between it and the engine-room was a doorway, 2ft. wide and 4ft. high. It couldn't be bigger without cutting too much out of a bath wall-piers. In the smallest institutions at least two steam boilers are required, and if three can be afforded, all the better; because with three boilers it is possible to use one for the direct supply of hot water. The engine-room must of course be closed off from the boiler house and room will be required for an engine, boiler, feed pumps, lathe, and other tools.

\* A paper read before the Architectural Association on March 3rd, 1899.



I have said that the engine-room and boiler-house are, or should be, show places, and perhaps, in saying so I am assuming in my professional brethren something of the keen pleasure I always personally feel in the contemplation of machinery and engineering work generally. Perhaps I may be permitted to add that I have always felt that we should none of us be worse architects for understanding a little of the subject. Short of this I do not see any better way of ensuring that advance in building so desirable to keep pace with the marvellous development of engineering than a closer alliance with those who have made engineering their study and practice. Professional exclusiveness and jealousy may yet die down sufficiently for this. Already the majority of architects consult the other profession very largely; but not as much I think, as they will in future. I have not much necessity to do so myself, because it is part of the tradition of my office to lay down the engineering schemes in all their details in all buildings. Yet that very fact has taught me how much this matter affects, or should affect, the design and details of a building. The profession of an architect calls for so wide and varied a knowledge of ever-increasing details that purely engineering work would appear

#### A Serious Addition to our Labours;

but certainly the knowledge of so much as applies to the purposes of our own buildings is most desirable. Short of this, it is absolutely essential to acquire so much as will enable us to associate ourselves appreciatively with the professional engineer whom we consult. I may add, by the way, that it would be to the advantage of the building work carried out by engineers (public bridges, for instance) if they would consult an architect—and a good one—and take his advice with respect to the architectural “trimmings.” Probably the architect would say, “Don’t have any;” but the work as a whole would not suffer. Adjoining the boiler-house should be a large coal store, and, within bounds, the larger the better. It should have direct communication with the boiler-house and the public street.

#### Administration.

We arrive now at the administration of the buildings. The superintendent’s apartments should be designed like any other private house, and it should have separate access to the public street. Six, or at most eight, rooms are all that are necessary, and, as I mentioned before, they should be comfortable and as roomy as can be afforded. A board or committee room is necessary, and our clients will never complain if we lavish a little architectural display therein—and small blame to them. Unpaid public work deserves comfortable and, indeed, elegant surroundings. A superintendent’s store for towels, soap, and other necessities is essential. It should scarcely have less area than 150ft., and may be nearly twice that size with advantage. If either of the baths are to be used at times for a gymnasium or for

#### Public Entertainments

we can scarcely have too much rough storage room, which may be in basement or even subways. Without going into many other details, which would occupy the rest of the evening to deal with exhaustively, I think it well to mention briefly the important matter of drainage, because there are special conditions to be met in public baths. In the first place the swimming bath drains should not be connected to the general system, and if possible each bath should drain direct into the public sewer, with the usual disconnecting trap, &c., of course. If they are connected to the general system the enormous pressure and bulk of the bath water will quickly choke back the flow from any other part of the building, if it does not even find its way up the pipe into the lower parts. A large sluice-valve is necessary close to the bath outlet. It is important, too, to bear in mind that the outlet should be covered with a close grating. Some few years since, in letting off a certain amount of water to lower its level in a swimming bath, a boy was drawn by the strong suction right into the

outlet pipe, and of course drowned. The warm baths may be taken direct into an ordinary drain, provided the latter discharges over an open trap. The end of the drain-pipe should be continued up in iron as a ventilator. A further precaution against foul air entering the room is to trap each bath. The Midland superintendent I referred to writes me that at his establishment the

#### Wastes are Carried Untrapped

through the floor into a subway to discharge over a channel in the floor of this subway, which leads the water off to a trap; but, he adds, that in this case the channel is too shallow, and so the bath-water is practically discharged on to the subway floor with unpleasant results. I mention the matter as an instance of the want of that care and forethought which are so essential in dealing with the subject. It is not a bad idea to discharge over such a channel if it is only deep enough, and can be regularly cleaned with a hose. Finally, every part of the drainage should be easily accessible, for delay in removing a stoppage might seriously disorganise the work of the establishment.

#### The Discussion.

The Chairman, Mr. G. H. Fellows Prynn, in proposing a vote of thanks to Mr. Snell, said the Germans and Austrians were before us, in many respects, in their public baths and washing arrangements, especially so in the douche system, which was in many respects better than the slipper system. With regard to the transept system of obtaining a large number of boxes round a bath, it had occurred to him that a series of a sort of semi-circular transepts could be arranged round the sides, with a douche in the centre of the semi-circle, thus obtaining quite double the number of boxes. The bather could then readily take the douche on leaving the box, and afterwards plunge into the bath, and the boxes would be at the same time under complete supervision. He thought there was no harm in getting the engineer to carry out purely engineering work in a building, and he thought the more confidence architects placed in engineers, the more confidence would they experience in return. Mr. T. N. Dinwiddy seconded the vote of thanks, and said that in planning baths the difficulty of getting women to wash was sometimes overlooked, and too many slipper baths for women were provided, as they used baths far less in proportion than men. The water supply was, of course, great, and it was found cheaper to use well water than a company’s supply, and in this case it would, of course, be necessary to provide a storage tank.—Mr. E. Harding Payne said that cross ventilated lobbies between lavatories and public baths were frequently neglected. On a warm day the smell from such places travelled to the surface of the water and hung there, and was most obnoxious to swimmers. In nearly all large baths galleries were provided for the purposes of entertainment, and were practically useless, as usually only the first row could see the water. He did not think it was necessary, as a rule, to have a club room in connection with a second-class bath. He thought subways were not used as much as they might be. There might be shootes to trolleys for sending the towels to the laundry. He suggested that galleries could be provided at slightly extra cost and extended site, by providing them in the form of an amphitheatre, with boxes above the tiers, and underneath, at the back, a passage way could be provided from one end to another of the bath, as in many cases there was no means of performers in tournaments getting from one end to another except along the front.—Mr. C. H. Brodie said he did not see why subways could not be used for getting from one end to another of the bath. He thought rubber might be used for the platform round a bath. Mr. H. F. Clark asked the cost of a public swimming bath per cubic foot.—Mr. Ernest Herbert said that in a small public bath in Edinburgh the entrance passage extended all the way round the back of the boxes and, consequently, as the bathers left their boots in their boxes, dirt was not carried on to the platform round the bath.

That arrangement did away with some of the platform on the side of the bath, and, where a gallery was not required above, it gave room for the slipper baths on the first floor round the sides of the bath. There was, however, a waste of space on the ground floor. He thought rubber round a bath would be unsuitable. Slate was all right if it was slightly roughed on the surface.—Mr. O. L. Marchant, Superintendent of the Marylebone Baths, said it was difficult to prevent dirt being carried into a bath by the feet. The remedy was to see that the attendants kept the place clean. He thought that as so many swimming baths were being provided in nearly every parish of London the great swimming baths would become unnecessary, and baths of about 100ft. by 35ft. would be found quite sufficient. Mr. F. Peck said that concrete was not sufficient to keep the water in, asphalt must be used as well. He thought that when an architect consulted an engineer he should be really an engineer, no member of a trade firm. Mr. E. J. Wakeling, Chairman of the committee of Shoreditch Baths thought the ideal size of a bath was 100ft. by 40ft. Mr. Matt Garbutt said that he once saw the danger of accidents due to the slippery edge to a bath obviated in a German one by a railing running all round, with frequent spaces.—The Chairman then put the vote of thanks, which was carried with acclamation.—Mr. A. Saxon Snell, in replying, said that he thought Mr. Prynn’s idea of circular transepts was a very good one, and would give a fine effect, with the shower-bath in centre, but of course the site would have to be unrestricted. He thought it a good suggestion to have the curb of a swimming bath slightly roughed. He had used both Portland stone and marble, but Portland stone wore quickly and got green in spite of cleaning. Marble was not so good as slate. The material he had referred to in his paper was glass mosaic; the surface of which being rough, he imagined would give a good foothold. If cross-ventilated lobbies were heated above the temperature of the bath hall, the air would not enter it. A club-room was useful to provide in a second-class bath as it could be used for parties of school children. He thought a modern set of baths could not be built for less than a shilling per foot cubic. He did not use asphalt linings for baths, but when used he recommended two thicknesses. A good way was to build a bath as a gas-holder tank might, trowelling the cement very smooth, and having puddled wall behind. He did not think a railing good, as it was desirable to have free access to the water all round.

**A Wrought-iron Gate,** the gift of the Vicar, the Rev. D. Methven, has been erected in the chancel of the Parish Church of Earls Colne.

**A Boys’ Institute for Southwark.**—A new building in connection with the Fegan Institute has just been opened in Southwark Street, London. It consists of three floors, the rooms being devoted to purposes of study and recreation.

**The New Wesleyan Church and schools** in Blackhorse Road, Walthamstow, were formally opened last Wednesday afternoon. The buildings are in red brick with white facings. The schools are under the chapel. The cost has been £4796.

**Excavations in Tunis.**—The excavations now going on in the Theatre of Dugga, in Tunis, show (says the “Morning Post”) that the Romans possessed for their theatres a system of stage carpentry equal, if not superior, to the appliances now in use. An ingenious contrivance enabled those who stood underneath the stage to see what was proceeding above. A number of trapdoors opened in the centre of the stage, and grooves have been discovered showing the way in which scenery and stage furniture were lowered and raised. Eight large holes led to several dry wells three yards deep under the stage, while a large receptacle served to store the curtain in during the performance. The floor of the stage was covered with mosaics.



## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### SCIENCE AND ART EXAMINATIONS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Will you kindly tell me, through your columns, if it would be possible for Candidates for the examination in "Building Construction" to enter for the same in any other way than by attending the examination held at the Science and Art Department at South Kensington.—Yours truly,

"ENQUIRER."

Candidates may attend the examination at any science school by paying a small fee and giving sufficient notice.

### BOOKS ON STEEL AND IRON WORK.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—Will you kindly inform me in the enquiry column whether there is a recent and reliable text book on constructional steel and iron work. I mean by recent, one that has been published since steel has been used so largely in the construction of all large buildings?—Your obedient servant,

Tottenham, N. E. C. D.

"Constructional Iron and Steel Work," by F. Campin, price 3s. 6d., published by Crosby Lockwood and Son, is a book that would suit you. "Specification," price 5s., also contains much information on the subject.

### BUILDERS' LIABILITY FOR STABILITY OF STRUCTURES.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—I fixed a monument in our churchyard four years ago, and on that rough night, February 11th., it was blown down and broken. Now the parties to whom it belongs, wants to come on me for a new one. What can they do in the matter?

Bolsover. T. C.

They can do nothing, unless the destruction of the monument can be traced to the act or default of T. C. A builder does not insure the stability of a structure that he erects. He is only bound to execute the work in a skilful and proper manner.

### BUILDING CONSTRUCTION HONOURS EXAMINATION.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—As I intend presenting myself as a candidate for the above exam., and am not connected with any school under South Kensington régime, I would be much obliged if you could inform me where I could procure the questions which have been asked in preceding years, and also as to the method of presenting oneself for examination.

Edinburgh. J. M. S.

The best thing to do would be to apply at the nearest science school for permission to attend the examination, which is always held early in May, names having to be entered much earlier. We fancy it is already too late to make application this year, even by special application direct to the Secretary, Science and Art Department, South Kensington, S.W., from whom papers set upon previous occasions are to be obtained at small cost.

### COKE BREEZE FLATS.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—I have heard that coke breeze is now being used for covering roof flats in place of the usual lead flat. As this system would be much cheaper, perhaps some of our readers have laid down same, and could give par-

ticulars. I believe girders are placed at intervals of about 2ft. to 2ft. 6in. over the opening to be covered, and the spaces filled in with the coke breeze, and after this has become dry a kind of asphalt is laid on the coke breeze to render it watertight. Please state the proportions of coke breeze and cement, and the kind of asphalt used.

H. S. Cardiff.

Flat concrete roofs have been used for a number of years, and may be briefly described as a light form of concrete flooring laid on the slope, and provided with the necessary channels, &c., for collecting and carrying off the water. Concrete is frequently used as a weather covering, and may be laid on timber joists and rough flooring boards, or the supporting framework may be of iron or steel. Where the concrete alone is relied upon to keep out the rain it should be of good composition, and the surface well smoothed off with neat cement. Notwithstanding all precautions which may be taken to insure weather tightness, these roofs are frequently liable to slight cracking and leakage. What H. S. is apparently after is the more modern arrangement of forming the roof as a slab of concrete in which light H-section joists are buried at intervals, to assist in carrying and strengthening the concrete. An arrangement of this kind, when finished off with an asphalt coating, forms a very satisfactory roof. The section of girders depends, of course, on the span over which they are to be carried, and may vary from 3in. by 1½in. for spans from 5ft. to 6ft. (with a total thickness of concrete of 5ft.) to 6in. by 3in., or 7in. by 3½in. for spans up to 17ft. to 20ft. (with a total thickness of concrete of 8in. to 9in.). The usual spacing of girders is 2ft., but 2ft. 6in., or even 3ft. may be adopted in some cases, the strength of girder and thickness of concrete being proportionately increased. The coke breeze must be free from all dirt, slag, or other impurities, being, if necessary, well washed to insure this; and the best proportion is about one measure of Portland cement to four to five measures of coke breeze, or one measure Portland cement to three coke breeze and one fine clean sand. The upper surface of the concrete must be carefully laid with the proper slopes and water channels, and over the same a facing of asphalt, laid in two coats of not less than ½in. thick each, all carefully finished off and carried well up the face of any surrounding parapet wall. Seyssel Rock Asphalt is that most frequently adopted, as it is found to resist the action of the sun and weather well; but other combinations of asphalt, such as Val de Travers, &c., may be used. In constructing such a roof be careful that the supporting walls are properly set, as any settlement there is very likely to crack the concrete, and probably give rise to trouble. Do not paint or oil the rolled joists, as they will unite firmly with the concrete if left unpainted. Keep girders close to lower side of concrete slab. Allow the concrete to dry slowly, protecting it especially from the action of the sun. Be sure that the concrete is thoroughly dry before laying the asphalt, and be careful that this coating is laid in one sheet, without joint cracks or the like, and that a weather protection is made by carrying this well up against any walls or cornices, and that suitable and ample falls and water courses are laid.

ALEXANDER DREW.

The L.C.C. and Science and Art.—The Lords of the Committee of the Council on Education have given their sanction to the recognition, under Clause 7 of the Science and Art Directory, of the London County Council as a body responsible for Science and Art instruction within its area.

The Council of the Church House is appealing for funds to carry out the erection of the second section of the building. The great hall is finished and in use. There is a fair supply of committee-rooms, but they are in constant use, and more are urgently required. It is now proposed to erect the west side of the permanent building at a cost of about £18,000.

## Correspondence.

### FOUNDATIONS FOR FACTORIES.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—The true engineer and architect, whilst fully alive to the results of actual practice, cannot afford to treat theory and experiment with the scant regard that is observed in Mr. Pearson's remarks, in your issue of March 1st, in reply to my letter. I think, however, that I may claim to have some experience, as well as theory, and as we are referring to soft soils, I may just say that I have recently put up four heavy and very large warehouses on the bad soil near the River Thames, but in various districts; and it is my experience and thirty years' practice that has induced me to advocate the theory laid down in my letter, which you kindly published. I say "advocate" because my blushing modesty compels me to disown the authorship with which Mr. Pearson has flattered me.

The point which I particularly emphasized, viz., Mr. Pearson's statement that the concrete should cover the whole surface of the site "in order to obtain uniform pressure" on the soil, he has not noticed. Does he still adhere to that statement? And when in his letter he states that a total load of 15,000 tons distributed over an area of 11,000ft. equals nearly 1½ tons per square foot, does he mean to say that the load is uniformly distributed over the whole area by means of the 3ft. slab of concrete? That is to say, that the ground under a column taking, say, 250 tons, receives no more pressure than the ground under a column taking 25 tons. Mr. Pearson must have an amazing faith in the virtues of a slab of concrete. I am an advocate for concrete and use it largely, but I have yet to learn that vertical pressure can be spread by means of concrete to a distance around the iron or brick base of a column of more than twice that of its thickness, unless steel girders are embedded. In the appended sketch I indicate the mean limit of pressure under ordinary circumstances. I now want Mr. Pearson to say how he manages to get the pressure transferred to the space between A and B so that it shall, as he states, be uniform with that under the columns.

I am not ashamed to admit that I cannot, by gazing on the surface of a site, or poking it with a stick, decide off-hand exactly how much it will safely carry, and that I prefer to make experiments where there is any doubt. It does not, of course, require a genius to say that a certain soil will carry 1½ or 2 tons, as the case may be; the question is, will it not safely carry 3 or 4 tons per foot, and if it will, the architect has no right to waste his client's money in unnecessary digging and concrete, as a result of mere guess work.

I think, sir, it will be useful to give the results of the experiments referred to so far as they have been made. I am designing a factory covering a site of about 15,000ft. super on doubtful ground, and desire to save my clients probably £1500, otherwise necessary for very deep foundations. The results are:—

Load per foot.	Settlement after Three Hours.	Settlement after Six Days.
3 cwt. of apparatus	—	—
½ ton	¾ in.	1 in.
1 ton	1 in.	1½ in.
2 tons	1½ in.	1 in.
3 "	1 in.	1½ in.
4 "	1½ in.	1½ in.

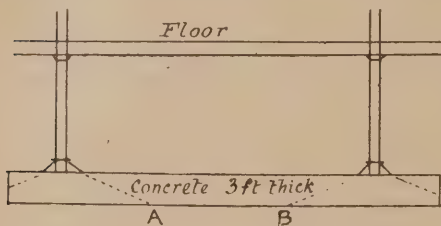
The experiments will be continued to 5 tons. Please note that this or similar ground loaded to 3 tons per foot may be expected to subside ¾ in. more than where loaded to only ½ ton per foot. Result—unequal settlement and disfigurement of building.

But Mr. Pearson's argument is that it does not matter what my theories are, that the fact remains that he has used whole site slabs of



concrete, and he believes them to have been successful. To this there are several answers: 1. An architect does not always know what happens to his buildings afterwards, and often the occupier himself is blissfully ignorant of some eloquent indications of unequal settlement. 2. If there is no serious or obvious movement, Mr. Pearson is fortunate in his ground. Some soil—sharp gritty sand, for example—soft enough to the spade, are, as a maiden soil, remarkably incompressible. 3. His distribution of loads may be symmetrical.

Mr. Pearson made one good point, viz., that the incidental loads may vary on any particular part of the floor from the shifting of stock. In answer let me say:—1. An ordinary warehouse may have from four to seven stories. It is extremely unlikely that in shifting-stock all the loads will follow simultaneously on corresponding points of each floor; in fact, so much is this principle of averages recognised, that it is customary in making calculations for columns and foundations to discount the floor loads as they accumulate downwards. There are, however, the permanent wall and fireproof



floor loads always present. 2. Assuming the utmost possible variation on any one part of the foundation, let it be remembered that once a soil is well compressed any temporary relief produces no movement. 3. There is, fortunately for many architects, a much better power of resistance in most soils than is expected, and the large margin of safety frequently saves them from serious disaster.

J. D.

### MOISTURE DURING FROST.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—Under the heading of "Moisture during Frost," on p. 50 of your issue dated March 1st, your expert says "a painted wall would be much colder than a wall covered with paper in the ordinary way." This is quite a mistake. A thermometer will show that there is no difference, while it is surely obvious that as differences of heat so quickly "find their level," everything in a room, be it paper or paint, must be of the same temperature until again disturbed. I might explain that in touching different articles with a warm hand, what seems to be differences of temperature are really differences of conducting power. If we handle a stone at 70 degrees and a similar stone at 40 degrees we are sensible of losing heat faster in the stone at 40 degrees than in the other, and we say it is colder; and in this case it would be so. Then if we take up, say, a wool mat at 40 degrees, and a stone at 40 degrees, a similar effect is produced in the hand as in the former case, and we say that the wool is warmer than the stone. But it is not, for are they not both at 40 degrees? So the mistake is a natural one. But nature is not deceived in this way, and moisture condenses, according to actual temperature; although there are circumstances (not the difference between paper and paint) where the better conductor, simply because it is a better conductor, will be colder, and therefore produce more condensation.

"ENGINEER."

The National Portrait Gallery Trustees have accepted the gift of a portrait of William Hone, painted by George Patten, A.R.A. They have also purchased several pictures, among which may be mentioned an unfinished sketch in oils of Dr. Samuel Johnson, a portrait of Colonel Isaac Barré, and pencil drawings of Robert Louis Stevenson, by Percy Spence, and of David Garrick, by John Keyes Sherwin.

## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,

March 15th, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### Diamond cut Diamond.

The "Globe" tells a good story of an architect who inspected a church in course of restoration, and discovered that the contractor had not used copper nails for the slating as stipulated in the estimate. He, therefore, informed the contractor that the slates would have to come off again. That evening he received a dozen bottles of port with a note from the builder begging his acceptance of the gift. The architect replied by sending the contractor a hamper of sherry, begging his acceptance of the gift, and concluding: "You will have to use the copper nails."

### The Housing Problem.

This difficult problem of the housing of the working-classes is not confined to the metropolis and very large towns. It crops up in all sorts of unexpected places. For instance, last Tuesday week an inquiry was held by the Local Government Board at Tunbridge Wells in respect to the Town Council's proposal to erect a number of cheap, sanitary dwellings for the many working families said to be unable to secure small houses in or near the borough at reasonable rates. It is estimated that a loan of £20,000 would be needed to cover the expenses of the scheme for the first batch of buildings. It is proposed to erect fifty-three cottages at 7s. per week rent, and thirty tenements at 5s. 6d per week. It was stated that one reason why speculative builders had not coped with the demand was that Tunbridge Wells, being a wealthy town, they had found it paid better to erect larger houses of the villa type.

### Coal-Smoke Abatement Society.

This is the title of the new Society which has been formed under the presidency of Sir W. B. Richmond, R.A. The hon. treasurer is Dr. H. A. des Vœux; the hon. secretary, Mr. Owen B. Thomas; and the offices (*pro. tem.*) are at 59, Chancery Lane. The society will limit its sphere of action at present to the metropolitan area; and its objects are as follows:—(a) To aid in enforcing to its utmost the existing law dealing with the smoke nuisance which is contained in the Public Health Act, 1891. (b) Where the present law

is inefficient to bring about an amendment. (c) To inquire into the present causes of the smoke nuisance, and the best means of removing or lessening the same, and to promote the investigation of appliances designed with that object. (d) To obtain evidence of the methods of dealing with smoke at home and abroad. (e) To promote the knowledge of methods by which the emission of smoke may be prevented, and for that purpose to encourage the organization of exhibitions and to stimulate invention by the offer of prizes. It has been decided that the Society shall give a gold, silver, and bronze medal to the three best exhibits in the Coal Smoke Abatement section of the Building Trades Exhibition shortly to hold in the Agricultural Hall. The medals are to be specially designed by Sir W. B. Richmond.

### Another Academy Election.

An election of an associate in place of the late Mr. Harry Bates will be held towards the end of the month, and it is said that the choice is likely to fall on an architect, who will probably be either Mr. John Belcher or Mr. Aston Webb. It is possible, however, that another sculptor may be preferred, on account of the lack of men available as visitors to the Academy modelling rooms.

### The L.C.C. and Art.

It is encouraging to find that there are members of the L.C.C. who are not desirous of restricting that body absolutely to the discharge of purely utilitarian functions. As we have no ministry of Fine Arts, it is well that the Council should accept a certain responsibility in regard to the artistic and historical side of London life. Mr. R. W. Granville-Smith, one of the representatives of Westminster, has given notice of a motion that it be referred to the General Purposes Committee of the Council to consider and report as to the desirability of appointing a new standing committee to be called the Art and History Committee, to which all questions of an artistic, archaeological, or historical character should be referred, so that the artistic claims or needs of the streets, buildings, monuments, antiquities, statues, and works of art of the metropolis may be fully considered. Mr. Sidney Webb has also given notice of a motion that in view of the fact that the Council possesses among its archives many records dating from the sixteenth century, the General Purposes Committee be requested to consider what steps can most conveniently be taken to publish a selection of such records as are of historic interest.

### Builders and the London Government Bill.

MR. R. ROBERTS, a builder who was for several years an Independent member of the London County Council, has been interviewed by a "Daily Chronicle" representative on the London Government Bill. His opinion was that it would be dangerous to London if the new municipalities had the Building Act to administer; what was wanted in the matter of building was a uniform standard all over London. He thought that the vestries were inclined to act in the interest of the owners of property, whereas the builders and the L.C.C., as a rule, took the broader view of the public interest. If, for instance, in a long thoroughfare between two parishes, where there were gardens in front of most of the houses, the owners were constantly trying to build on this private property, the Building Act line of frontage rule prevented them; but if influential people in one district managed to get permission to build on the gardens or forecourts, and permission was refused in the other section of the road, the thoroughfare would have anything but a pretty appearance. Besides the question of the building line, there were important sanitary matters. If in one district the sanitary officers condemned that which in another was approved, an architect would never know what would or would not be permitted, but with the Building Act he had only one authority to consider—the County Council.



**The Gladstone Statue.** THE proposal to erect a statue of Mr. Gladstone in the garden attached to Gwydyr House in Parliament Street has called forth two suggestions, both of which are worthy of consideration. The first is that the statue of James II., which at present stands in the garden, should be restored to its old position in the centre of the little court behind the Banqueting House. It is pointed out that this is the position in which it was originally placed by the King himself, and that it stood here for two centuries. The other suggestion is that the Gladstone statue should be erected in the middle of the new avenue that is to be constructed between the Strand and Holborn, a statue with four large bronze lamps surrounding it is what is proposed, and it is also suggested that the new street should be called Gladstone Avenue.

**A Dazzling Idea.** A MOVABLE roadway that is to be tried at the Paris Exhibition is being much talked of. A suggestion of something similar was made in the United States; it was proposed that a sort of multiple railway should be built between two towns there, distant 100 miles from each other. A railway track was first to be laid, and on this was to be a platform on wheels bearing another railway of shorter length, and on this a third railway carrying a train. All were to move at a great rate, and each travelling in the same direction would add its rate of progress to each of the others. Thus, if each was propelled at a rate of fifty miles an hour, the train would get over the ground at the rate of 150 miles. What an excellent scheme for adoption here! With footpaths on these principles and we should want no buses nor L.C.C. trams. But we hardly think our country is enlightened enough to adopt this great suggestion yet. We must come to it gradually by way of the Paris idea, which is a three miles an hour affair.

**Northern Architectural Association.** THE annual meeting of this association took place last Wednesday, the 8th inst. Mr. F. W. Rich, president, was in the chair. Mr. J. R. Wallace was elected an associate member, after which the prizes were presented to the successful students. Mr. A. B. Plummer, honorary secretary, read the annual report, which stated that during the year 1 member, 9 associates, and 14 students had been elected—the roll now standing: members, 50; associates, 59; students, 44; making a total of 153.—The honorary treasurer reported that there was a credit balance of £32 5s. 7d. Mr. W. Glover, who had been elected president for the coming year, then assumed the chair of office, and thanked the members for the honour they had conferred upon him. During his membership he had taken great interest in three matters connected with the association. First, a building to be its home; second, a good library; third, students' prizes; but to do that practical help must be given. For No. 1, he would give 100 guineas if they would raise 900; for No. 2 he would give 25 guineas if they would give 75; and for No. 3 he would give 25 guineas if they would give 75; and he would double his offer if they would double their help. That would raise 2000 guineas for the building, 200 for the library, and 200 for the students' fund, the interest of the latter to be devoted to prizes.

**King Alfred's Millenary.** A PUBLIC meeting was held last Thursday at Winchester, in connection with the proposal to commemorate Alfred the Great, by the erection of a suitable memorial in that town. The Marquis of Lorne, in proposing a resolution in support of a national commemoration in 1901, expressed satisfaction that art would be largely represented in this commemoration, inasmuch as a statue was to be erected, and that there would be a possibility, in regard to the proposed hall, of having historical representations in painting of some of Alfred's great achievements. The resolution was agreed to. The sum it is hoped to raise is £30,000.

## Professional Practice.

**Belfast.**—The foundation stones of St. Michael's Church were laid on March 4th. The site is a piece of unoccupied ground in Craven Street, off Shankill Road, and was purchased some time ago by the congregation for the sum of £1450. The cost of the entire structure when completed will be about £3300. The dimensions of the church are 104ft. by 74ft., and it will be capable of accommodating about 800 people, with about 150 more in the gallery. The style is Gothic, and the materials used are perforated brick, with Dumfries red grindstone dressings. The inside columns are to be built of white Bath stone, and all the woodwork will be pitch pine. Mr. James Kidd is the builder, and Mr. Samuel P. Close the architect.

**Caerphilly.**—The memorial stones of the new Congregational Church for Caerphilly were laid last week. It will cost about £400, and is to be built of native stone, with brick dressings. Mr. J. H. Phillips, of St. John's Chambers, Cardiff, is the architect, and Mr. J. H. Phillips, of Caerphilly, the contractor.

**Croydon.**—The new isolation hospital for greater London was opened on Saturday last week. It occupies a position just in the parish of Carshalton, and stands in five acres of ground. It comprises eight separate buildings. The building work has been carried on by Messrs. D. Stewart and Sons for £15,878. The plans have been prepared and the work executed under the superintendence of Messrs. R. M. Chart and Son, of Croydon.

**Dundee.**—A fountain has been presented to Errol by Sir William and Lady Ogilvy Dalgleish. It has been executed from a design by Messrs. Johnston and Baxter, architects, of Dundee, and is sculptured out of red stone from Dumfriesshire, with basins of polished Peterhead granite, the plan being trefoil. The height is about 13ft. Rising from the basin level, the pedestal takes a circular form. On one side a lion's head is carved, from which the water issues to supply the basins, with the overflow running into small troughs below for the dogs. The pedestal is capped by a moulded and carved cornice and base, on which rest the column and carved capital with scrolls and thistle ornament. On the top of the capital is placed the unicorn in bronze, with the Scottish shield in front. The work has been executed by Mr. Alexander Neilson, sculptor, of Dundee.

**Edinburgh.**—A new church is proposed for erection at the corner of London Road and Lochend Road, for the United Presbyterians. The general plan of the church is of a cruciform outline, with a gallery running round three sides, and is to seat 700. The west or main front is flanked by two low towers. Attached to the church is a large hall containing 300 sittings, at either end of which is situated the vestry and session house, and lavatory accommodation. A lower hall for school purposes is below this hall. The whole buildings have been designed in a free treatment of late Gothic Architecture. The total cost is to be £5000, and the competitive plans have been prepared by Mr. R. M. Cameron, architect, Edinburgh.

**Lancaster.**—The front of the "Guardian" Office buildings at Lancaster, a portion of which fell some time ago owing to building operations adjoining, is about to be rebuilt at a cost of over £900. Plans have been prepared by Messrs. Austin and Paley, of Lancaster, and the design will be in style similar to the old building which was erected in 1779. The work will be carried out by the following firms: Masonry, J. Thoms, of Grange; carpenters and joiners, R. S. Wright and Sons; plumbing, Abbott and Co.; slater and pavior, T. Cross and Son; painter, E. Payne; all of Lancaster.

## Views and Reviews.

### WHY CHIMNEY'S SMOKE.

We have received from Mr. Robert Crane, consulting domestic engineer, a pamphlet on the cause and prevention of smoky chimneys. The pamphlet is not written to advocate the use of some particular form of cowl or chimney pot. Indeed the author regards these so-called cares for the smoke evil as almost invariably useless. Of all the tallboys, windguards, revolving cowls, and chimney pots, now applied to buildings 90 per cent., Mr. Crane declares, might with advantage be removed if the cause of the evil were intelligently attacked. Such a consummation is devoutly to be desired from an æsthetic point of view, for nothing could well be more unsightly than the zinc and iron chimney pots and cowls that are so commonly resorted to when a chimney smokes. The great thing is to find out and remove the cause of the tendency to smoke. Some of the causes are discussed by the author in the pamphlet before us. Often the fault lies in the design of the house; even houses of the better class are often designed and built without the least provision being made for a continuous supply of fresh air. Every room ought to contain a sufficiency of fresh air to meet the requirements for supporting combustion without drawing from other rooms. Where this is not the case it is little good clapping a cowl on the offending chimney. There are many other reasons why chimneys smoke and in some cases the remedies are extremely simple. The author discusses them in detail and his suggestions are likely to be of service to builders and others who are sometimes at a loss when called in to doctor a smoky chimney.

"A crusade against Chimney Pots, Cowls, &c., or why Chimneys Smoke." By Robert Crane, 143, Cannon Street, E.C. Price 1s.

### THE GOUPIL GALLERY.

Granted a native inclination towards Art in one form or another, it is often chance that decides which of many possible Arts should be followed, and ultimately practiced professionally. There should remain to the architect a sympathetic understanding of all that appeals to the mind through the eye, and a consequent sympathy with art-workers in other fields than his own; so it is as likely as not that our professional friends will be willing to know what recreation the galleries offer, though at present there seems to be nothing more notable than a few masterpieces to be seen at the Goupil Gallery and the studies of "Picturesque Holland," which the Messrs. Dowdeswell are showing. It cannot be said of either that the poetical or picturesque aspects of buildings requiring drawing have provided the painters with subjects, but to-day we are taking a holiday, and suppose the eager eye of the architect to be diverted from its usual quarry.

It is not so generally remarked as it should be—the influence of the French being so obvious—how much of the Protestant Art of this country, concerned as it is with portraiture, landscape, and purely domestic scenes, may be attributed to the Revolt in the sixteenth century, which made Holland autonomous, nor how entirely in the spirit of their greatest masters, regarding both subject and treatment, are the works of the modern Dutchmen: Israels, Maris, Neuhuys, and others who might be mentioned. The domestic scenes of their choice are epic in their simplicity, and in point of execution superb. It was observed by the earliest chiaroscurists that whoever would intensify feelings of reverence had only to concentrate light on the principal object, the non-essential being noxious in Art as in argument, and this art, applied first by Italians and Spaniards to what was considered most sacred, was carried further in Holland under more various climatic conditions, and shown to be applicable to almost everything lovable. The paintings exhibited here have many characteristics in common, and whether by Dutch, English, or French, the general feeling will be that it is



not a mixed entertainment. Though there are but forty pictures in all, they are most of them excellent, and it is hardly possible that the visitor will be disappointed. Mr. Hornel finds the subjects of his paintings in Japan, but considering their quality they seem not at all out of place in this gallery.

### THE DOWDESWELLS' GALLERY.

A native of Holland is exhibiting at the Dowdeswell Gallery some water colour drawing and frescoes, and from the fact that even on Press-day there were more than a few marked "sold," it may be inferred that this little exhibition will be one of the most successful. It is not our business to sell pictures, however, but simply to note what is best and advise. The painter, Nico W. Jungmann, has brought in his train a selection of maidens from Holland attired as they would be at home, and their faces and holiday dresses are as well remembered at least as the paintings. Out of forty or fifty paintings there are only four or five landscapes, and these in a country so riddled with water-ways can hardly be so described. The artist is young, and probably restless, for what we lack in these paintings is the feeling of peace that results from the contemplation of scenes that respond by their composure to one's own unuttered request. They are graphic however, and capable as they are faithful; but, putting these few aside, there remains so much to delight in the naïveté and utter fidelity of the various character sketches that it would be impossible to speak of them fully. There may be discerned in the works of past masters, Italian, Flemish, or German, a searching understanding of actuality which has taught us to expect, from caricaturists, an ideally real representation, "exclusive and parsimonious," and by virtue of these characteristics, the illustrator of the "Bab Ballads" has a very sure place among artists, while the same might be said of Phil May and some hundreds of others who know what it is to be graphic.

The artist, as might be expected, is a more accomplished draughtsman than painter. In all or nearly all his studies from life the quality is of the highest, so stubbornly real they are; amusing without being absurd, and so scrupulously chosen with regard to what is most telling that the writer who would if he could be critical has little or nothing to do. The fact that either in line or colour they could all be reproduced perfectly will probably lead to his fame being spread to the ends of the earth before long.

**Plans of Workmen's Buildings** and erection estimates are to be submitted by the City surveyor to the Sheffield City Council.

**A Site for a Technical School** and Free Library at Eastbourne has been presented by the Duke of Devonshire. The Town Council have decided to invite competitive designs for the building to be erected, at a cost not exceeding £20,000.

**The Death of Sir Douglas Galton, K.C.B.**, took place last Friday afternoon at his residence in London. He was born in 1822, and got his commission in the Royal Engineers in 1840. In 1842 he directed the removal of the wreck of the Royal George at Spithead, and the construction of fortifications at Gibraltar and Malta. He was engaged on the Ordnance Survey in 1846, and on the Railway Commission in the following year. Appointed in 1859 Assistant Inspector-General of Fortifications, Lord Herbert entrusted him with the construction of the Herbert Hospital at Woolwich, at that time the largest Military Hospital in the world, having as many as six hundred and fifty beds. In 1860 he was Assistant-Inspector-General of Fortifications, and from 1862 to 1870 Assistant Under-Secretary for War. For twenty-five years he was the general secretary of the British Association, and its president in 1895. Sir Douglas Galton was one of the highest authorities on hospital construction, sanitation, ventilation, and hygienic arrangements in general, and his loss will be severely felt in the scientific world.

## BRADFORD FIRE STATION COMPETITION.

IN our issue for March 1st we published an article on the above competition, in which we criticised the accepted designs and pointed out that competitors might reasonably feel aggrieved at the manner in which the competition was decided. So strong and so general was the dissatisfaction that some of the competitors determined to make a united protest, and as a result the following letter was drawn up and forwarded to the Corporation of Bradford:—

"To the Mayor and Corporation of the City of Bradford.

"20, John Street, Adelphi,  
Strand, W.C.

March 10th, 1899.

"GENTLEMEN,—We, the undersigned, having submitted designs in the recent competition for the Central Fire Station, desire to call your attention to the very unsatisfactory result of the competition, and to protest against the manner in which the Adjudicating Committee have made their selection and exhibited the designs without notification to competitors.

"The points we desire to bring under your notice are:—

"1.—That three distinct and separate schemes submitted by one competitor have been collectively awarded the first premium, and that no notification is made as to which of these designs is considered by the committee to be the best or the most suitable for the requirements of the Corporation. We do not contest the right of any competitor to submit alternative designs, but the essence of a competition of this kind is that each design must stand upon its own merits in its comparison with its competitors. How is it possible that three separate designs can be collectively compared with any one individual design? We venture to think that the committee have in effect failed to make any selection whatever for the first premium within the terms of the second of the conditions, under which the competition was held.

"2.—That no notification was given to competitors of the time or place of the public exhibition of the drawings, which, in fact, were only on public view for one day, immediately following the day when the selection was made. The obvious result of the want of notice and the shortness of the time during which the designs were exhibited was that few, if any, of the competitors were able to see the selected designs in conjunction with the other designs, and they thus had no opportunity of forming an opinion upon their relative values. We have not unnaturally considered the course, which has been taken as suggesting to the competitors and the public that open criticism of the design would be unwelcome.

"3.—Having regard to the stringent and very proper conditions forbidding distinguishing marks, the use of small photographic plans by the premiated authors is to be regretted. Also we believe that the drawings which obtained the first premium are coloured, thus affording a ready means of identification. It was expressly provided by condition 12 that the elevation and perspective must not be coloured, but finished in Indian ink. One object of this provision being no doubt to exclude what might be made a distinguishing mark. We desire to point out that condition 17 declared that any design, the preparation of which did not comply with the conditions, would be rejected. We feel sure that you will agree with us that in a public competition of this kind which necessarily puts professional men who compete to considerable trouble and some expense, the conditions and representations under which designs are invited and upon the faith of which they are prepared and sent in ought to be strictly adhered to. It is however, obvious that if the committee had acted upon this principle, they could not have awarded the first premium to the designs which they selected.

"4.—We do not propose to discuss any of the debatable points in the selected designs. We

have, however, no knowledge of any Central Fire Station which has been erected for anything like so small an amount as about 4d. per foot cube, at which the buildings work out in the estimate attached to the premiated designs.

"Having enumerated the points upon which we are compelled to protest, we would ask the Corporation, in order that the matter may be removed from any suspicion of partiality or irregularity, to suspend its adoption of the award of the committee, and to invite (under condition 5) the president of the Royal Institute of British Architects to nominate an expert to assist them in making their selection.

"We also beg to request that when the selection is finally made, a public exhibition of all the drawings may be held, of which due notice shall be given to all the competitors.

"We are dear Sir,

Your obedient Servants,

This letter is signed by nineteen of the competing architects.

What action, if any, will be taken by the Bradford Town Council in reference to the protest remains to be seen, but it would appear that steps have already been taken towards carrying out the design to which the committee—in spite of its non-compliance with their conditions—have given their approval. The following paragraph appeared in the "Yorkshire Post" for March 7th: "The Bradford Watch Committee yesterday decided to accept the plans of Messrs. Mawson and Hudson, architects, of Bradford, for the new Fire Brigade Station. The Committee recommend the Council to approve of the plans, and to apply for powers to borrow £30,000 to carry out the work." It will be remembered that one of the conditions of the competition was that the limit of cost was to be £15,000.

## Keystones.

**A new Public Hall** is proposed to be erected at Woodside, Aberdeen.

**North Lonsdale Hospital.**—The memorial-stone of "Schneider" Ward was laid last week.

**Surfleet Church** has been Examined by Mr. Hodgson Fowler, F.S.A., and he thinks that the cost of its restoration would be about £2000.

**Newcastle New Infirmary.**—The site for the new infirmary on the Castle Leazes has been approved of by the freemen of Newcastle-on-Tyne.

**Aberdeen Art Gallery** is to have cupolas placed in the side roofs, a floor laid with pitch pine blocks, an orchestra erected over the gallery, and turnstiles erected at the entrance hall.

**A Memorial to Sir Frank Lockwood** was unveiled in York Minster on Tuesday last week. It consists of a stained glass window in the eastern side of the north transept, representing St. Paul.

**Battersea Polytechnic.**—Sir Henry Tate has offered to present a large organ for the new hall of the Battersea Polytechnic. Sir Henry gave the munificent donation of £10,000 towards the establishment of the Polytechnic.

**Partnership.**—Mr. George E. Clare, M.S.A., who has been practising at 66, Duke Street, Chelmsford, has taken into partnership Mr. Walter G. Ross, and opened a London office at 1, West Street, Finsbury Circus, E.C.

**New Hospital at Hampstead.**—Sir Henry Harben has promised £3000 to the building fund of the New Hampstead Hospital, provided the £14,000 required is raised by June 1st. £3050 has already been raised from other sources.

**St. Mary's Church, Wanstead,** is in great need of repair, and an appeal is being made for funds. Sir A. W. Blomfield says the tower and the north aisle roof are in urgent need of speedy attention. The tower cannot be considered safe.



## Under Discussion.

### BRITISH ARCHÆOLOGICAL ASSOCIATION.

The seventh meeting of the current session of this Association was held at the rooms in Sackville Street on the 1st inst., C. D. Compton, Esq., V.P., in the chair. Dr. Perry, president of the Spalding Gentlemen's Society, exhibited a so-called hand brick about 4in. in length, tapering from 2in. wide at one end to 1½in. at the other end, which was considered to have been used in the formation of a pavement, as similar hard bricks were discovered in the foundation of an old church at Waynfleet, *in situ*, as a pavement. In this case they were rudely shaped cylinders of baked clay. Mrs. Day exhibited some fine drawings and engravings of St. Magnus Cathedral, Orkney, and Mrs. Collier some engravings of brasses from Brundish Church, Suffolk. The Rev. W. S. Sach-Szyrma, M.A., read a paper upon an interesting but little known subject, viz., "Ancient British Costume," or rather the costume of the early inhabitants of this island, prior to the Aryan immigration here of the Celts and Cymri. He said we find little to lead us to any satisfactory conclusion as to the probable ancient costume of the inhabitants of early Britain from the study of the savage habits and customs of the races of Australia and Africa, because the climate of those countries is more or less warm all the year round, but the climate in Britain in winter, since man settled in the island, must always have been severe, and we can hardly imagine an English winter in which the people had no need for fairly warm clothing. The author conceived that the traditional costume of early Britain may be best traced in Wales and the Scotch Highlands. A discussion followed the paper.

### AN ATTACK ON JERRY-BUILDING.

At the annual dinner of the Aberdeen Master Masons' Association, held on March 3, Mr. James Souttar, in reply to the toast of "The Architects," said that of late years his heart had failed a little on account of the immense number of buildings which were got up of very little merit. Of course they, as architects, got the blame for it, and one friend that night was anxious that they should show their skill in some directions, but probably before they got the opportunity some little speculator would step in and start building houses. These speculators would perhaps get an articulated pupil in some architect's office to give them a plan, breaking every article of his agreement, or perhaps they would get some fellow, for a few drams or drinks, to prepare the plans, so that they might pass through the Town Council. The municipality legislated beautifully about the thickness of the water pipes and about the cementing of the drain pipes, and about the lines and levels. Beyond that they could build as they liked. They could put in posts that would not support the joists, and that would not support the masons' scaffolding, and what was the consequence?—down came the scaffolding with three or four men beneath it. He thought what the municipality had to do was to have a superintendent of works, and when a plan came in before the Plans Committee they ought to see that a responsible man was placed over the buildings, to see the building carried out to its finish. Since he spoke last on the system of jerry-building, when he expressed regret at the way houses were being erected, without any plans or specifications or schedules or superintendence, they had had some serious accidents in connection with buildings. Some one ought to be responsible not only for lines and levels, not only for pipes and drains, but to see that the plans and specifications of buildings to be erected within the jurisdiction of their municipal authorities were prepared by responsible and qualified architects, who would continue to carry out the works and be responsible for them to the end. Legislation was provided in other cities affecting masonry as to thickness of walls in due proportion to

their height, as to character of masonry and bond, as to the number of chimneys allowed in a certain thickness of wall, as to the thickness of posts supporting joists and flooring, as to strength of joists and beams, and as to the stability of a building throughout—its roofs, stairs, materials, &c. The municipal legislation dealt peremptorily with the thickness of their water and gas pipes, the character of their plumber work and their drainage, but it had never reached the more vital question of their sewer ventilation. If the masons refused to undertake jerry building, and refused the offers of the speculators who wished buildings rushed up in an outrageous and wrong manner, then they would have an end to the system. If a man put up a jerry building and death occurred as the cause of it, he was liable to be brought up for culpable homicide or manslaughter. Architects were also liable if they passed the plans of such a building, but what they wanted was that the blame should fall upon the right man. If they stuck up for buildings being erected in a proper way then they would have reason not to be ashamed of their good old city.

### A DIFFICULT SURVEY.

At a meeting of the Society of Engineers, held at the Royal United Service Institution, Whitehall, on March 6th, Mr. John C. Fell, President, in the chair, a paper was read on "The Shan Hill Country and the Mandalay Railway," by Mr. E. Wynter Wagstaff, A.M., Inst., C.E., Executive Engineer, Burma Railway. In this paper the author gave some particulars of surveys carried out by him in connection with the location of a line of railway through the Northern Shan States from Mandalay to the Salween, now known as the Mandalay-Kunlon Railway. The paper contained a special description of the work on that portion of the line known as the Gokteik Gorge, a deep ravine or cañon which cuts the line about eighty miles from Mandalay. The chief engineering difficulties were the Ghat between the fifteenth and thirty-fifth mile, with a rise of about 3200 feet, and the Gokteik Gorge, with a fall and rise of about 1400 feet in eight miles. The author described the method of conducting the survey, which was carried out in this remarkable ravine under great difficulties, and sometimes dangers. The system adopted was a series of compass traverses along the hill side above and below the belt on which it was assumed the line would probably fall. A way was cut through the jungle by a working party, the compass officer following with a couple of levellers. These were followed by another leveller, and behind him came yet another taking cross sections. Each day's work was plotted on return to camp. A rack line was marked out on the basis of an incline of 8 per cent., and submitted to the Government. Subsequently a new survey was made with the view of a 4 per cent. adhesion line. Ultimately another survey of the gorge was made, and a 2½ per cent. grade was obtained, thus making this portion uniform with the rest of the line, which has a ruling gradient of 1 in 50. The works included a viaduct 2000ft. in length, with a maximum pier height of about 320ft. A natural bridge occurs in the Gokteik Gorge, and upon it is an interesting monument with an inscription in Chinese, setting forth the date of the construction of the caravan track, and the names of those who made it. This track consists of what is practically a winding flight of irregular steps, in many places cut out of the solid rock. It is said to have cost a lac of Rupees. The channel under the natural bridge is approached by a cavern of great natural beauty. The walls have been coated by the infiltration of lime-charged water, with a brilliant white covering, and this in its turn has been painted in soft pinks, and greys and greens, from traces of various minerals. The entrance is blocked with foliage and masses of ferns partially petrified with every delicate frond intact.

The New Buildings to be occupied by the Stirling Co-operative Society has been opened. Messrs. M'Luckie and Walker are the architects.

Ruskin's Old House at Herne Hill is shortly to be put under the hammer.

A New Cancer Ward was Opened at the New Hospital for Women in Euston Road last week.

The Aberdeen Painters have gained the day, the standard minimum wage being now 8d. per hour, and they have resumed work.

M. Vilain, a French Sculptor, who, in 1838, won the Grand Prix de Rome, died in Paris at the end of last week at the age of eighty-five.

H.M.S. Implacable was Launched last Saturday. She has a displacement of 15,000 tons and 15,000 indicated horse power. The length is 400ft., and draught 26ft. 9in.

The Patent Office.—The work of clearing the ground at the rear of Staple Inn and Southampton-buildings for the erection of the Patent Office Library has been commenced. The new premises will take three years to erect.

The Public Baths for Portobello were discussed at the meeting of the Edinburgh Town Council on March 7th. The Plans and Works Committee recommended the acceptance of the estimates, amounting to £24,758, and this was finally agreed to.

Cruden Bay Hotel has been formally opened by the directors of the Great North of Scotland Railway Company. It is a handsome and well equipped building, and has been erected to designs by Mr. John J. Smith, A.R.I.B.A., the company's architect.

The Byron Statue at Aberdeen.—At a meeting of the sub-committee, appointed in connection with the movement to erect a Byron statue in Aberdeen, held last week, it was unanimously agreed to appoint Mr. P. Macgillivray as sculptor of the statue.

Aberdeen School Board.—At a meeting of the School Buildings Committee of the Aberdeen School Board last week, it was resolved to have the Kitty Brewster School opened, if possible, in June, and with this view instructions were given to push forward the work.

Proposed new Fire Station for Cardiff.—The Chief Constable of Cardiff has brought to the notice of the Watch Committee the necessity for providing new and larger premises for the accommodation of the Cardiff Fire Brigade. The matter has been referred to a sub-committee.

St. Peter's Church, Plymouth.—As a memorial to the Rev. George Rundle Prynne, who for more than fifty years was the vicar of the Parish of St. Peter's, Plymouth, the subscribers to the fund are trying to complete the tower of St. Peter's Church. This will cost £2600, and the amount already in hand is £1616 14s. 4d.

A Statue of Victor Hugo is to be erected in the poet's native town, Besançon. A committee was formed there in 1885 to erect one, but, although fourteen years have elapsed, only £800 has been subscribed. The matter is now in the hands of a sculptor, and it is hoped at Besançon that the statue will be ready in two years' time.

New Municipal Buildings are to be erected at College Park, Dumbarton, and the plans were passed on Monday last week. Mr. Thomson is the architect. The cost is estimated at about £15,000, and the contractors are: Mason, Mr. William Barlas; joiners, Messrs. M'Leod and Sons; plumbers, Campbell and Cameron; slater, Mr. Mackie Thom. The cost is exclusive of the site, which is the gift of Lord Overton.

The Building Trade's Exhibition at the Agricultural Hall will be opened on April 26th by Professor Aitchison, R.A. (President of the Royal Institute of British Architects), supported by the Duke of Westminster, Sir Wm. Richmond, R.A., Sir Arthur Blomfield, A.R.A., G. T. Bodley, A.R.A., Robert Vigers, Esq. (President Surveyors' Institute), G. F. Fellowes-Prynne, Esq. (President Architectural Association), Alfred Waterhouse, Esq., R.A., T. Blashill, Esq., Architect, London County Council, Sir Alfred Hickman, M.P., Sir Wm. Arrol, M.P., and others.



## CURRENT PRICES.

OILS AND PAINTS.			
Castor, French	per cwt.	1 4 0	—
Colza, English	per cwt.	1 2 9	—
Copperas	per ton	2 0 0	—
Kerosine, water white	per cwt.	1 5 0	1 15 0
Lard	per ton	28 10 0	32 10 0
Linsed	per cwt.	0 18 0	—
Neatsfoot	per gal.	0 2 6	0 4 0
Paraffin	per cwt.	0 10 0	0 19 0
Pitch	per cwt.	0 8 0	—
Tallow, Town	per cwt.	1 1 6	—
Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 12 9	—
Glue	per cwt.	1 19 6	2 18 6
Lead, white, ground, carbonate	per cwt.	0 19 0	—
Do. red	per cwt.	0 16 9	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	3 10 0	3 18 0
Do. sticklac	do.	2 2 6	2 15 0
Pumice stone,	do.	0 8 9	—

## METALS.

Copper, sheet, strong	per ton	78 0 0	80 0 0
Iron, bar, Staffs, in London	do.	6 15 0	8 0 0
Do. Galvanised Corrugated sheet	do.	11 10 0	—
Lead, pig, Spanish	do.	14 0 0	—
Do. English common brands	do.	14 5 0	—
Do. sheet, English, 6lb.	do.	16 10 0	—
Do. pipe	do.	17 5 0	—
Nails, cut clasp, 3in. to 6in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Straits	do.	106 0 0	—
Do. English ingots	do.	109 0 0	110 0 0
Zinc, sheets, English	do.	27 10 0	28 10 0
Do. Veuille Montaigne	do.	31 0 0	—
Do. Spelter	do.	27 5 0	—

## TIMBER.

SOFT WOODS.			
Fir, Dantzic and Memel	per load.	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Laths, log, Dantzic	per fath.	4 10 0	5 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Deals, Archangel 2nd & 1st per P. Std.	do.	10 0 0	12 15 0
Do. do. 4th & 3rd.	do.	8 5 0	8 15 0
Do. do. unsorted	do.	7 5 0	8 5 0
Do. Riga	do.	8 5 0	9 5 0
Do. Petersburg 1st Yellow	do.	14 15 0	—
Do. do. 2nd	do.	12 0 0	—
Do. do. Unsorted	do.	8 0 0	10 10 0
Do. do. White	do.	7 15 0	9 15 0
Do. Swedish	do.	9 15 0	12 10 0
Do. White Sea	do.	10 15 0	18 0 0
Do. Quebec Pine, 1st.	do.	22 15 0	24 5 0
Do. do. 2nd	do.	15 10 0	—
Do. do. 3rd & 4th	do.	6 15 0	7 10 0
Do. Canadian Spruce, 1st	do.	7 15 0	9 0 0
Do. do. 3rd & 2nd	do.	6 5 0	6 10 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	do.	6 15 0	8 10 0
HARD WOODS.			
Ash, Quebec	per load.	3 17 6	4 10 0
Birch, Quebec	do.	3 0 0	5 0 0
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, in, Cuba	per ft. sup.	0 0 4	0 0 4
Do. Honduras	do.	0 0 4	9 16
Do. Tobasco	do.	0 0 4	—
Elm, Quebec	per load.	4 12 6	5 10 0
Mahogany, Average Price	per ft. sup.	0 0 5 1/8	—
Do. African	do.	0 0 3 7/16	0 3 25/32
Do. St. Domingo	do.	0 0 5 1/16	—
Do. Tobasco	do.	0 0 3 21/32	—
Oak, Dantzic and Memel	per load.	3 5 0	3 15 0
Do. Quebec	do.	4 12 6	—
Teak, Rangoon, Planks	do.	8 10 0	13 15 0
Wainscot, Riga (Baulk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub. ft.	0 1 9	0 2 7

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## COMING EVENTS.

Wednesday, March 15.

MANCHESTER MUNICIPAL SCHOOL OF ART LECTURES.—Sir Thomas Wardle, on "Calico Printing as an Art." 7.30 p.m.

SOCIETY OF ARTS.—Ordinary Meeting at 8 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers).—Inspection and Demonstration of Disinfecting and Filtering Appliances at the Lambeth Disinfecting Station, Wanless-road, Loughborough-junction, at 3 p.m. Conducted by Mr. Wolf Defries, B.A., M.L.C.E.

BUILDERS' FOREMEN AND CLERKS OF WORKS' INSTITUTION.—Ordinary meeting of the members. 8 p.m.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—(1) Mr. C. A. Donnelly on "The Crannog at Dumbuck." (2) Mr. C. Dack on "Survival of Old Customs at Peterborough." 8 p.m.

Thursday, March 16.

ROYAL INSTITUTION.—Mr. William Poel on "English Play-houses in the Fifteenth, Sixteenth, and Seventeenth Centuries." II. 3 p.m.

SOCIETY OF ANTIQUARIES.—8.30 p.m.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—Mr. E. Doran Webb, F.S.A., on "The Diary of a Sarum worthy of the Seventeenth Century." Mr. Philip H. Newman, R.B.A., F.R.S.I., in the chair.

SANITARY INSTITUTE (Lectures and Demonstrations for Sanitary Officers).—Mr. Henry R. Kenwood, M.B., D.P.H., &amp;c., on "Infectious Diseases and Methods of Disinfection." 8 p.m.

INSTITUTION OF CIVIL ENGINEERS.—Student's visit to the Generating Station of the South London Electric Supply Corporation, in course of construction. 2.30 p.m.

Friday, March 17.

ARCHITECTURAL ASSOCIATION.—Mr. Reginald T. Blomfield, on "Reflections on the English Renaissance." 7.30 p.m.

GLASGOW AND WEST OF SCOTLAND TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMAN'S SOCIETY.—Mr. W. G. Peidle on "Electric Lighting of Buildings." Mr. G. Davidson on "Levelling." 8 p.m.

Saturday, March 18.

ROYAL INSTITUTION.—The Right Hon. Lord Rayleigh on "The Mechanical Properties of Bodies." VI. 3 p.m.

SANITARY INSTITUTE.—(Demonstrations for Sanitary Officers).—Inspection at Morden Hall Farm, Morden, Surrey. 3 p.m.

PERTH ARCHITECTURAL ASSOCIATION.—Visit to Brahan House, near Tulloch. 2.30 p.m.

Monday, March 20.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Mr. John Bilson, F.R.I.B.A., on "Beginnings of Gothic Architecture: Norman Vaulting in England." 8 p.m.

VICTORIA INSTITUTE.—Meeting at 4.30 p.m.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.—Election of Officers, and Annual Report presented. 6.30 p.m.

LIVERPOOL ARCHITECTURAL SOCIETY.—Mr. H. B. Bary, F.R.I.B.A., on "Notes on American Architecture," and Mr. J. H. Hook on "New York Office Buildings."

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers).—Dr. Louis Parkes, D.P.H., on "Water Supply, Drinking Water, and Pollution of Water."

Tuesday, March 21.

SOCIETY OF ARTS.—Meeting of Foreign and Colonial Section at 4.30 p.m.

Wednesday, March 22.

EDINBURGH ARCHITECTURAL SOCIETY.—Open discussion. Mr. W. N. Cumming (will open the debate, Mr. T. R. Paterson moving the previous question.

SOCIETY OF ARTS.—Ordinary Meeting at 8 p.m.

## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

CHOPWELL (co. Durham).—For the erection of store premises, &c., for the Co-operative Society, Ltd. Messrs. Liddle and Brown, architects, Mosley-street, Newcastle.—Ed. Taylor ... £7,190 2 10 John Westgarth £6,421 3 6 J. G. Bradley ... 6,881 10 0 Stephen Sheriff 6,312 18 0 G. T. Manners ... 6,850 0 0 M.A. Armstrong 6,152 15 2 Reay and Son ... 6,722 0 0 H. A. Atkinson, Davidson & Bolan 6,653 16 0 Blaydon ... 6,130 15 7 T. Hutchinson ... 6,535 10 0 Thos. Doin ... 5,974 8 6 Thos. W. Wilson 6,462 15 11 T. & J. White ... 5,516 9 2

DOVER.—For a public convenience and additions to the Museum, Gaol-lane, for the Town Council. Mr. H. E. Stilgoe, C.E., Town Hall, Dover. Quantities by the Borough Engineer.—C. F. Keeler ... £1,445 0 0 H. Richardson ... £1,233 0 0 H. Warren & Son 1,393 15 7 W. Logan, Man- G. Munro ... 1,393 9 2 stone ... 1,279 0 0

LONDON.—For the erection of stables, &c., for the Victoria Wine Company, at Berners-street, Whitechapel, E. Mr. George Waymouth, architect, 23, Moorgate-st., E.C. 1. Bristow and Sons ... £2,236 Barlow and Roberts ... £1,850 W. Gladding ... 1,919 Stevens Bros. ... 1,200

LONDON.—For alterations at the "College Arms," Bethnal Green, for Mr. Geo. Lakeman. Edward Brown, M.S.A., architect, 161, Commercial-street, Bishopsgate.—A. Hood ... £512 0 R. Preston ... £311 10 E. Lanchester ... 487 0

W. Paddon, jun. ... £77 0 B. J. Grimes and Son £68 0 W. Rogers and Sons ... £8 10

J. Miller and Co. ... £53 J. Shadman ... £50 Dupuy, Pottier, & Adams ... 50

LONDON.—For ventilating work, including the installation of electrical fans at Bridgewater House, St. James' Park. O'Gorman and Cozens-Hardy, engineers, 66, Victoria street, S.W.—

The Grahays Ventilating and Engineering Co. Ltd. ... £1,250

LUTON.—For roads and sewers, Leigh Estate, Luton, for Messrs. J. Cumberland and Son—Geo. Powdrill ... £3,475 Killingback and Co. ... £2,745 Free and Son ... 2,930 Hollingsworth ... 2,665 S. Adams ... 2,889 Bell ... 2,590 A. T. Catley ... 2,770

NEWQUAY (Cornwall).—For the erection of a sea retaining wall at Great Western Beach, for the Newquay Urban District Council. Mr. John Ennor, jun., surveyor.—Hoare and Stephens £116 10 Pearce & Trebilcock £110 0

PETERBOROUGH.—For the erection of three shops, Fletton, for the Peterborough Co-operative Society. Messrs. Townsend and Fordham, architects, Cross-street, Peterborough. Quantities by Mr. Fordham.—

Cracknell ... £2,207 19 0 Watson and Lucas £1,589 0 W. Wade ... 2,195 0 0 J. Bridgfoot & Son, R. J. Nicholls ... 1,665 5 0 Woodstone, Peter- S. Hipwell & Co. 1,620 0 0 borough ... 1,565 14 Hicks Bros. ... 1,500 12 4

ST. ALBANS.—For the erection of the St. Albans Liberal Club, Hatfield-road. Mr. S. Doddimead Edmunds, architect, 22, Verulam-road, St. Albans, and Bow, E.—Whibley and Jervis ... £1,074 G. Wiggs ... 2945 Boff Bros. ... 961 E. Dunham, St. Albans ... 833

WIGSTON MAGNA (Leicestershire).—For the erection of residence and stabling. Messrs. Miles and Beasley, architects and surveyors, Friar-lane, Leicester. Quantities by architects.—

S. Briers ... £2,220 J. O. Jewsbury ... £1,984 Bradshaw Bros. ... 2,216 U. Gurney ... 1,934 Jos. Wright ... 2,100

[All of Leicester.]

WINDERMERE.—For the erection of a bridge over the River Troutbeck. Mr. J. Bintley, County Surveyor, 7, Lower-street, Kendal.—

T. & M. Atkinson £1,080 0 0 A. Jackson, Amble- W. Grisenthwaite 870 10 3 side (accepted ... £720 0 0

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## PUBLIC ABATTOIRS FOR LONDON.

At a meeting of the Sanitary Institute, held last Wednesday at the Parkes Museum, Margaret Street, W., Mr. E. B. Forman, L.C.C., presiding, Dr. William Arthur Bond, Medical Officer of Health for Holborn opened a discussion on "The Establishment of Public Abattoirs in the Metropolis in Relation to the Prevention of Tuberculosis." Dr. Bond began by summarising the conclusions of the last Royal Commission on Tuberculosis, and also of the former one, which reported in 1895, he then referred to the experiments of Dr. Klein and Dr. Sydney Martin, which tend to show that tuberculosis is often caused by the eating of diseased food. The disease, said Dr. Bond, is exceedingly prevalent among cows but less so among sheep and calves. The inspection of the animals, to be efficient, must take place at the time of slaughter, as it is only then that the organs belonging to the animal can also be adequately inspected. In addition to the inspection of meat slaughtered in the public abattoirs, there will still remain the need for inspection of carcasses brought from other districts. Dr. Bond was of the opinion that, with efficient inspection of all meat, properly constructed public abattoirs would be advantageous to the stockowner, the butcher, and the consumer for the following reasons:—

### 1. To the Stockowner,

because (a) increased inspection would make him try to eliminate tuberculosis and other diseases from his stock, and thus diminish his losses. (b) In London some 5000 butchers, instead of only some 450 who have private slaughter-houses, would have the opportunity, if they so desired, of slaughtering home-fed animals. (c) The consumer would know home-fed meat and have a guarantee that it had been passed as sound, so that there would be increased demand for such meat.

### 2. To the Butcher,

who dealt in home-fed meat because (a) Of the increased demand for it. (b) The monopoly of those having private slaughter-houses would be prevented. (c) His losses, especially in summer and muggy weather, would be much diminished, as his meat could be well kept until required for sale in the cooling chambers or cold-air stores provided in the public abattoirs. (d) His heavy expenses for ice, especially during the summer, would be diminished, and his savings from this alone would more than pay for the small sums that would be charged for the cooling chamber.

### 3. To the Consumer,

especially to the poor, because he could ensure a meat supply wholesome and free from disease, especially tuberculosis. The additional cost, if any, would be so infinitesimal that it may be neglected. On account of the enormous population of London, the efficient inspection of all meat coming into it would make stockowners careful to eradicate tuberculosis from their herds, and in this way the milk supply would also be much improved, and therefore human tuberculosis would also be diminished. This diminution of tuberculosis would be the greater the more universally the recommendations of the Royal Commission were carried out. Dr. A. E. Harris, M.O.H. to the Islington Vestry, has thus stated the reasons for providing public abattoirs:—

#### 1. Hygienic Reasons.

(a) That the erection of such buildings would remove nuisances from the neighbourhood of dwelling houses. (b) That it would exclude putrifiable matter from the sewers. (c) That it would protect meat from the liability to exposure from foul emanations. (d) That it would ensure the thorough examination of all meat for disease. (e) That it would materially tend to limit the traffic in diseased meat.

#### 2. Economic Reasons.

(a) That the meat would be less liable to spoil, because slaughtered under better conditions. (b) That much blood and offal now

lost would be entirely saved. (c) That there would be a saving from order, the proper division of labour, avoidance of driving animals through the streets, and the doing of business on a large scale. (d) That abattoirs publicly managed yield a fair profit.

### 3. Humanitarian Reasons.

(a) That much of the cruelty to animals that now occurs would be put an end to, owing to the use of improved appliances for slaughtering. (b) That the driving of weary and exhausted cattle through our streets would be avoided, owing to the abattoirs being situated near railway stations. (c) That the street danger to the public would be greatly lessened, if not altogether eliminated. Dr. Bond then gave a short account of his

### Experiences in Holborn,

as showing the necessity for the efficient inspection of all meat, and the provision of public abattoirs. About one-third of the diseased meat "seized" has been for tuberculosis. This meat has come from very many counties of England, and some also from Scotland, Holland, and Belgium. Nearly all the tubercular carcasses seized were cows; a few were pigs or oxen. The average weight of these cows was under 350lb. In the first quarter of the year 1896, at the beginning of which the meat inspector began his duties, there were more than 4000 stones of diseased meat seized, or at the rate of more than 16,000 stones per annum. This is exclusive of diseased offal. Legal proceedings were taken against many of the offenders, and in a very large majority of the cases fines or imprisonment were inflicted. For several years prior to the appointment of this special meat inspector there had not been a single conviction obtained for exposing or depositing for sale diseased meat. This fact proves the necessity for efficient inspection. The enormous area and population of London made it desirable that there should be at least six public abattoirs. In Glasgow, the second city of the United Kingdom, there are three; in Manchester, another very large city, there is but one; and in both the system has been

### A financial Success.

The Royal Commission states—Part II., p. 341—that all the public slaughter-houses in Germany are self-supporting. The slaughter-house charges vary in different towns, thus:

	Cattle.	Calves.	Sheep.	Lambs.	Pigs.
	s. d.	s. d.	s. d.	s. d.	s. d.
Glasgow .....	0 9	0 1½	0 1½	0 0½	1 0
Manchester .....	1 6	0 4	0 2	.....	0 6
Liverpool .....	1 6	0 6	0 1½	.....	0 6
Leeds .....	1 0	0 4	0 3	.....	0 3
Germany .....	2/- to 5/-	4d. to 1/-	4d. to 1/-	.....	1/- to 2/-
		(Reckoning a Mark as a	Shilling.)		

Osthoff also gives the charges made for weighing, inspection, and lairage, that for the first day being free; also details respecting the cost of erection of the public slaughter-houses, with or without cooling chambers, and the charges made for the use of the latter, which are from 14s. to 40s. per annum per 10 square feet.

### Arrangement of an Abattoir.

In the best modern slaughter-houses the slaughtering is done in large halls, separate halls being provided for cattle, for sheep and calves, and for swine, also a small one for diseased animals. Associated with the slaughter-house is the cattle market, and both are in direct connection with the main railway lines. On the premises also are buildings for carrying out the various processes incidental to slaughtering, such as fat melting, bone boiling, gut scraping, and the extraction of albumen from blood, &c. In the newer slaughter-houses there are large cooling rooms, and provision for microscopical and pathological examinations, &c. The lecturer then dealt with some of the objections that have been raised against public abattoirs. Private slaughter-houses are said to be more

convenient to the butcher. There are about 5000 butchers in London, and of these less than 450 have private slaughter-houses, so that the abolition of these latter could not certainly cause any inconvenience to the great majority—more than ten to one—who do not possess them. The greater number of these have to go several miles to get their meat at the Central Meat Market or Deptford. And of those that have private slaughter-houses many have to go several miles to the Cattle Market, Islington, or other markets, and have the animals driven through the streets. Moreover, those who have private slaughter-houses generally sell their meat in addition to that of their own killing.

### Belfast and Glasgow.

In Belfast, where the number of private slaughter-houses has been reduced from thirty to five, many of the butchers who do not slaughter in the public abattoirs have had private slaughter-houses built outside the city where the inspection is not so rigorous, and on that account willingly put up with the inconvenience of sending their man a long distance to do their slaughtering. In Glasgow, where private slaughter-houses have been abolished, the butchers now express a strong preference for the public slaughter-houses over the old system. Another objection is that meat killed in a private slaughter-house keeps better and retains its freshness better than meat killed in a public slaughter-house. A similar objection was raised by Mr. Hart, of the Central Meat and Poultry Markets Association, who urged that the establishment of public slaughter-houses, requiring more handling and carriage of recently killed meat, would "destroy the unique characteristics of home-killed meat." On this point Dr. Bond quoted the remarks of Mr. Shirley Murphy, Medical Officer of Health to the London County Council, who said that the slovenly and disgusting habit of piling the carcasses into carts, the driver often sitting on the top, was in marked contrast to the methods adopted in well-ordered foreign cities, where meat was conveyed to the butcher in specially constructed, well-ventilated vans, from the roof of which the meat is suspended. The paper concluded with the following extract from one of Sir Richard Thorne's Harben lectures:—"How is the very proper demand of the butchers for uniformity in the condi-

tions regulating the seizure of carcasses on account of tuberculosis to be met? How is such skilful handling of slightly tuberculous carcasses to be attained as will secure the removal of the diseased portions in such a way that no risk shall attach to the remainder? I only know one answer, namely, by the abolition, as far as practicable, of private slaughter-houses, by the provision in all large centres of population, whether technically styled urban or rural, of public slaughter-houses under the direct control of the sanitary authorities and their officers, and by the adoption of measures which will, as soon as practicable, provide a class of skilled meat inspectors. The properly administered public slaughter-house is demanded as an act of justice to those trading in meat; it is demanded in the interests of public health and decency; it is demanded for the prevention of cruelty to the lower animals; and it is demanded in order to bring England, if not the United Kingdom, somewhat nearer to the level of other civilised nations in this matter. Public slaughter-houses, officered by skilled inspectors, and supervised by medical officers of health, are urgently required, amongst other reasons,



for the prevention of tuberculosis in man." The discussion was opened by Mr. Thomas Blashill, architect to the London County Council, who exhibited to the meeting a sketch plan of an abattoir suitable for a small town or a district in the suburbs of London. Mr. Blashill explained that he had, at the request of a committee of the L.C.C., visited many cities on the Continent to study the different systems of public slaughter-houses. The plan represented a square piece of ground, with a road on one side and a railway on the other. The cattle arriving by railway would be received into a series of lairs or pens, in which the veterinary inspector can take a general view of them. If he sees anything the matter with them they are taken off to a place set apart for diseased animals. In the case of pigs, the animals are given a preliminary bath. There are separate pens for horned cattle, calves, pigs, and sheep, and separate abattoirs for each class of animal.

#### The System in Germany.

The system, said Mr. Blashill, was extending rapidly in Germany, and within ten years there would not be a German town, however small, which would not have its public abattoir. The animals are kept in the lairs for a few days until they are wanted. In the slaughter house every part is clean. The buildings are no disfigurement to the vicinity, being as ornamental in appearance as our best modern hospitals. The cattle are led into the slaughter hall with a mask over their faces which contains the spike with which they are killed. All the animals are slaughtered on one side of the hall, and the carcasses are then hung on the other side. Along the central passage the medical inspector is constantly walking. Directly the animal is killed the different parts of the viscera are hung up on hooks each in its proper place. If the inspector is satisfied with the viscera, the meat is passed, he puts a stamp on it, and his assistant stamps every piece of the carcass. If unsatisfactory, it has to undergo further examination.

#### Conveniences for the Butcher.

If the butcher does not want the meat immediately, it is run across on a trolley to a cooling chamber kept three or four degrees above the freezing point. Every butcher rents small cells in which he keeps veal, pork, and the smaller joints of beef. The butchers take their meat away in covered vans, leaving behind them at the abattoir any they may not require for immediate sale. Ice is made on the premises, and sold to the butchers at reasonable prices. In connection with the abattoir there would be the office of the superintendent, and residences for some of the attendants. Then there would be a hall for business transactions, with refreshment room attached; also accommodation for vans and horses, and for the men engaged in the work. A market for hides and skins, and a food store, would also be provided. The meat of the condemned animals, if not very bad, is sterilised and sent to shops where it is sold at very cheap rates. This meat is really entirely good and the demand for it exceeds the supply. Mr. Blashill's experience of foreign abattoirs was that they were entirely cleanly and free from anything offensive, that they were self-supporting, and were generally approved by all parties concerned. His enquiries led him to believe that the erection and fitting up of slaughter houses in London could be carried out without any charge on the community.

#### The Butchers' Case

against public abattoirs was stated with great clearness and force by Mr. A. Redman, who maintained that the Royal Commission and the medical faculty had failed to prove how very grave the risk was from a slightly tuberculous animal. The doctors could not prove that any man ever acquired tuberculosis directly from eating meat. They drew their inferences from experiments made on animals, using for their purpose those animals that were most susceptible to this particular disease. It was true that animals inoculated with tuberculous emulsion took the disease,

but the same material taken in the ordinary way through the alimentary canal often passed off without any injurious effects. Let them give these animals the tubercle in food which has been submitted to the same temperature as that the meat usually undergoes before being eaten by man, and he challenged the world to give a single instance of the disease being acquired in such circumstances. The Commission made some remark to the effect that the danger was greatly exaggerated, and the lecturer himself showed that this was so when he pointed out that from some abattoir in Germany only  $\frac{1}{2}$  per cent. of the animals were rejected as unfit for human food.

#### The Consumption of Meat

In London had increased enormously during recent years, but notwithstanding this the death rate had fallen enormously, too. The lecturer admitted that milk as well as meat communicated the disease, and also that it might be taken through the lungs. It was found that half the deaths from tuberculosis were of children under two years of age—before they would begin to eat meat—and that the period of greatest immunity from the disease was from five to fifteen years of age. Between the ages of fifteen and forty-five the nature of the disease changed entirely; it ceased to be intestinal, and attacked the respiratory organs, and, of course, eating meat had very little to do with the respiratory organs. Mr. Redman proceeded to refer to

#### The Case of Salisbury,

which, he said, was well known some time ago as a dreadful place for consumption. They proceeded to drain Salisbury, and in a little while the rate of consumption dropped as much as 50 per cent. There were other cases also where the death rate from consumption had been reduced by getting rid of the dampness of the soil. The provision of good housing accommodation and abundant ventilation also reduced the disease. And so he argued that of one hundred cases of consumption, ninety-nine were due to other causes, and only one to the eating of meat. Moreover, London had a lower death-rate from consumption than many towns which had spent half a million or a million on public abattoirs. Turning to the

#### Financial Argument,

Mr. Redman declared that anything could be made to pay. Supposing the charges at a particular abattoir for slaughtering, &c., amounted to 8s., and it was found at the end of the year there was a loss of £2000, the charge to the butcher would be raised to 10s., and then, of course, the thing would pay, and they could argue that public abattoirs were self-supporting. The butchers, as a trade, were not frightened of inspection, they welcomed it, for their meat—especially in London—was the best in the world; but until it was proved that their meat was disseminating disease they were not prepared to accept the system of public abattoirs.

#### Medical Arguments.

Dr. Glover Lyon contended that the last speaker had given no reason whatever why they should not have public abattoirs. For he had not disproved anything that Dr. Bond had said. He agreed that we should take care not to exaggerate the danger; the position they should take up was this: there is a danger and if it can be so easily got over as by public abattoirs, that method should be adopted. He thought there should be no need of compulsion, as it would be to the butcher's interest to use the public abattoir. A large dairy firm sent round circulars stating that all their milk was taken from fully inspected cows. The butcher who made it known that his meat was killed at a public abattoir, where it was thoroughly inspected, would gain a great deal over a man who slaughtered his beasts in private houses. It was of great importance that the public should be properly informed as to the production of tuberculosis. As Dr. Bond rightly said, it was produced by the entrance into the body of the tubercle

bacillus, and its growth there. Mr. Nicholson, an agricultural engineer, caused some amusement by his vigorous denunciation of these "atrocious institutions." His remarks were only partially audible at the reporters' table, but his objections appeared to be on the ground that a public abattoir involved great cruelty to the animals, and also great waste, as bullock's blood was a most valuable manure.—Mr. Coggan pointed out that emaciated animals did not come into the slaughter houses of London. The diseased animals mentioned in Dr. Bond's paper were old cows not averaging more than 350lb. each; such beasts did not come into the London slaughter-houses.

#### Railway Companies and Diseased Cattle.

Mr. H. Shaw said that although diseased cattle were not killed in private slaughter-houses they did come into London, chiefly to the cattle market at Islington. The railway companies should be compelled not to take cattle that were diseased. Professor Hunting, F.R.C.V.S., said the worst case of tuberculosis he ever saw was killed and distributed from a private slaughter-house in Chelsea. Twenty per cent. of the milch cows in London were tuberculous. What became of them? Most of them slipped through the private slaughter-houses. He suggested that butchers ought to be compensated for the destruction of tuberculous animals, and that the farmer who distributes the diseased cattle should be dealt with, as well as the butcher.

#### Meeting the Butcher Half-way.

Mr. James Lemon thought that something should be done to meet the objections of butchers to public slaughter-houses. One of their objections was that the killing of cattle in a large hall was a barbarous system. He had seen cattle killed at Liverpool; the animals were knocked down one after another, they were all of a tremble, and a more disgusting and villainous thing he never saw in his life. There was no reason why they should not have a house, as in Manchester, which the butcher could open and use in the same way as in the case of a private slaughter-house, but which would be open to public inspection. The private slaughter-houses were often quite unsuited for their purpose, being merely converted stables. They would not get public slaughter-houses until they came to a more reasonable frame of mind in reference to the butcher. They ought to put up a building to which the butcher would go voluntarily, and if they did that the private slaughter-house would soon disappear. It was possible to erect a good house without having to charge the butcher more than he now pays for a wretched private slaughter-house.

#### Views of the R.S.P.C.A.

Mr. John Colam, Secretary of the Royal Society for the Prevention of Cruelty to Animals, entirely concurred with what had been said as to the immense superiority of slaughter-houses on the Continent. From the point of view of his Society the great evil of the present system was that the private slaughter-house was private ground, and the inspector could not enter without permission. The public slaughter-house would be open to public inspection, and there would be less possibility of cruelty.—In the course of a somewhat lengthy reply, Dr. Bond touched upon most of the points raised by the various speakers. To Mr. Redman's objection, that particularly susceptible animals were chosen for experiments, he pointed out that many human beings were particularly susceptible to the disease. He did not, of course, deny that there were many causes of consumption, but the eating of tuberculous food was one.—The Chairman, in the course of a short speech, alluded to the difficulty of deciding whether a beast was diseased without examining the entrails. He related the case of a member of the L.C.C.—a member of the butcher's trade—who had passed a cow as being in perfect health, but admitted when he saw the entrails that he had never seen a cow so infected in his life. In a public abattoir thorough inspection of every part would be assured.



## THE PLASTERERS' LOCK-OUT.

THE lock-out which began on the 6th is proceeding in a very leisurely way. It has not yet affected so large a number of men as might have been expected, nor has it brought us any nearer to a settlement of the dispute. From the returns of the number of men locked out in London and the Provinces, received at the head offices of the Plasterers' Association, it appears that about 2400 members of the Union have been affected. Of this number at least 700 had found work in other directions, so that only about 1700 last week received strike pay. The men received 15s. and the apprentices 8s. The men who remain in work will, from this week, contribute a special strike levy of 3s.

The Secretary of the Master Builders' Association states that his Committee are very well satisfied with the results so far. A number of sub-committees have been appointed to deal with the lock-out.

Mr. Deller has issued a circular to the members of the Plasterers' Association, giving the text of his correspondence with Mr. Hassall, the masters' Secretary. Mr. Deller proceeds in his circular to review the masters' demands *seriatim*. With regard to the question of the limitation of apprentices, he states that the Secretary of the Central Association of Master Builders, in his report presented to their meeting at St. Martin's Town Hall on February 23rd, charges them with not availing themselves of the services of apprentices to anything like the extent to which trade unions assent. On the charge of refusal to work on buildings where some of the workmen employed may not belong to a trade union, Mr. Deller says there might be produced instances where individuals had done so without the consent of their branches or the executive committee, but he claimed that an association could not as a whole be blamed for what might happen without its consent. On the subject of submitting trade disputes to a conference, the men's secretary says:—"This question the National Association of Master Builders have settled themselves in a manner not only discreditable to them, but showing clearly that it is not we, but they, who will not meet in conference." Mr. Deller concludes by advising his members to work honourably for any employer who is willing to carry out the local rules.

Mr. Hassall, the secretary to the Master Builders' Association, has addressed a letter to Mr. Deller, in which he complains that, beyond a formal acknowledgment, his letters seem to be ignored by the Plasterers' Association. He then repeats that his association is willing to meet the Plasterers' Association in conference as soon as the latter body send alternative proposals in writing. He adds, with reference to the last paragraph of Mr. Deller's letter (which appeared in our columns last week):—"I may state that there is not the slightest foundation for your statements that my association desire your annihilation, or that no reliance can be placed on any settlement being honourably carried out so far as my association is concerned. Such remarks are not only unnecessary and offensive, but also absolutely untrue."

The support accorded to the policy of the National Association of Master Builders by the builders of the provinces evidently varies in different localities. In many places the lock-out is being enforced, but in others work is being carried on as usual.

At a meeting of the Scarborough Master Builders' Association for instance, it was decided to take no part in the dispute. It was stated that the grievances against which the Master Builders' National Association are contending do not exist in Scarborough. The Works Department of the London County Council, although appealed to for their support by the Master Builders' Association, maintains a strictly neutral attitude. It is stated that a large London firm which originally joined the lock-out have restarted their men. On the other hand reports of fresh

adhesions to the lock-out on the part of provincial employers are being constantly received.

A possible new development is the starting of work by the operative plasterers themselves on co-operative lines. The idea is being considered, but it is extremely doubtful whether it will be practically realised. The Brussels correspondent of an evening paper states that advertisements are appearing in Belgian newspapers offering permanent employment at good wages to plasterers willing to go to England. The wages of plasterers in Antwerp and Brussels vary from 5d. to 6d. per hour. No mention is made in the advertisements of any dispute in England, but the news has already been sent round to the various Unions in Belgium. A few Dutch plasterers are said to have been already brought over and engaged by an Oxford Street firm.

Mr. J. A. Hassall, the secretary of the National Association of Master Builders, has forwarded to Mr. Deller a series of extracts from the monthly reports of the Plasterers' Union, which, he claims, show that Mr. Deller's reply to the employers' letter of February 1st is not accurate.

Mr. Dellar formally replied to this letter, acknowledging its receipt and refusing to discuss certain matters with Mr. Hassall, as they were private and only concerned the Central Executive and their branches.

## Surveying and Sanitary Notes.

**The Eastbourne Town Council** has made an application to the Local Government Board for sanction to borrow the sum of £5000 for street improvements.

**Paving Kew Bridge.**—In a letter to the "Morning Post," "R.D." advocates wood-paving for Kew Bridge, as, no matter how much gravel is thrown on to stone roads, horses slip on them, and the strain of such slips, and the after consequences are, he says, only too well known to the owners of horses.

**The Burslem Town Council** is going to apply to the Local Government Board for permission to borrow £2800 for paving Newcastle Street, and £150 for paving Chapel Bank. A recommendation of the Joint Hospital Committee to further consider the question of enlarging the sanatorium before coming to a final decision was approved.

**Sheffield Street Improvements.**—The Improvement Committee of Sheffield City Council have agreed to purchase 1024 square yards of land with the salesshops and buildings thereon in Neepsend Lane, at a cost of £4500, for the purpose of widening the Lane. Also, in consideration of Church Burgesses giving up 400 square yards of land in Coleridge Road, near the canal bridge, in order to widen the same to 40ft., they have agreed to execute the necessary street works at an estimated cost of £200.

### Examinations for Sanitary Inspectors.

—In answer to a question in the House of Commons last Thursday week, Mr. Chaplin said that an association has been formed, with the concurrence of the Local Government Board, for holding examinations of persons desirous of obtaining certificates of competency for the office of sanitary inspector or inspector of nuisances. The association has been registered as a company with limited liability. One of the objects of the association is to prescribe such course of study and technical training as may be calculated to ensure the fitness of persons desirous of qualifying for the offices above mentioned. Several bodies, some of whom provide instruction for those who desire to become sanitary inspectors, will be represented on the examination board, and representatives may be elected by such additional bodies as may from time to time be approved by the Local Government Board.

## Masters and Men.

**The Annan painters have struck** for  $\frac{1}{2}$ d. per hour rise on their present wage, which is 6 $\frac{1}{2}$ d.

**The Scottish Masons** have consented to continue for another year the existing agreement with the masters as to hours and wages.

**Advance of Wages in the Chain Trade.**—All the employers in the South Staffordshire and North Worcestershire districts have granted an increase of ten per cent. in wages to their operatives engaged in the manufacture of small chains.

**The Keith Masons' Strike.**—The master masons, by request of the men, met in conference on March 6, three representatives of the operatives and two delegates from the Operatives' Union, Glasgow, and it was agreed that the masters, having at present contracts for dressed stones from Auchindor Quarries, be allowed to finish the jobs for which they had contracted; but after they are finished all stones required for future jobs are to be dressed on the ground at the job.

**Workmen's Compensation Act: A Widow's Claim.**—On the 5th March, Lords Justices A. L. Smith, Collins, and Romer, in the Court of Appeal, heard the case under the Workmen's Compensation Act (1897), of *McNicholas v. R. F. Dawson and Sons*. Mrs. McNicholas, a widow, appealed from the decision of the County Court judge of Bradford, who decided that her husband had not met with his death under circumstances that entitled her to compensation under the Act. It seems that the man was engaged to look after a steam engine, and also had to attend to a mortar tank which the engine worked. This tank was outside the engine shed, and adjoined it. A few minutes after the steam had been turned on on the morning the accident occurred, a labourer saw the deceased being whirled round on the engine shaft. Besides the door which gave access to the shed, there was a small door at the opposite end. To get at it a man would have to pass under the engine shaft, which could only be done by crouching down. It was the deceased's duty after setting the machinery to work, to go outside the shed and attend to the filling of the mortar tank; and strict orders had been given, according to the defendants' foreman, that the men were never to use the little door when "steam was on." The defendants' counsel stated that the man must have attempted to leave by this door, and said that it was absolutely uncertain whether the accident to McNicholas "arose in or out of the work" that he was employed by the firm to do. They had got a judgment, and it was for the appellant to show by evidence of some sort that the learned County Court judge was wrong in deciding that there was not sufficient evidence to show what the unfortunate man was actually doing when he got entangled with the machinery. The learned counsel then argued that the work the man was engaged on was not work "on or about a building," and relied on the fact that the steam engine was in a low shed that did not come within the definition of "a factory."—Lord Justice A. L. Smith said there could be no doubt that if anyone were asked to say whether or no the deceased man met with his death by an accident arising out of or in the course of his employment with the defendants the answer would be "Yes?" The respondents had attempted to get out of their liability by saying that this was not a "factory," and that the man might have been attempting to leave the shed by the little door for his own purposes. The County Court judge did not find that the man had gone to the little door "for his own pleasure." The appeal would be allowed.—Lords Justices Collins and Romer delivered judgments to a like effect.



Builders' Notes.

Engineering Notes.

**A Kiln Collapsed** at Mr. Forder's cement works at Sundon, near Luton, on Monday, last week. One man was killed, and two others severely injured.

**Moss Vale School, Paisley** (Mr. John Hutcheson, of Glasgow, Architect), is to be ventilated by "Cousland's Improved Climax" patent direct-acting invisible roof ventilators, supplied by the "Climax" Ventilating and Heating Co. Ltd., of Glasgow.

**A New Cement Company.**—The Lyme Regis Cement Company, Limited, has been formed with a capital of £75,000 in £1 shares, to acquire a property at Lyme Regis containing a supply of limestone, for use in the making of Portland cement. The vendor has fixed the purchase price of the business at £25,000, and out of the issue of £50,000 there will be working capital of £25,000 provided.

**A Builder v. the Magistrates of Aberdeen.**—In the Second Division of the Court of Session of Scotland before the Lord Justice Clerk, Lord Young, and Lord Frayner, judgment was given in a reclaiming note for the pursuer in an action by James Russell, builder, Aberdeen, against the Corporation of Aberdeen. The pursuer sought a declaration that he was entitled to build walls to a greater height than 7ft, on the north side of Broomhill Road, provided they were not nearer the present centre of the road than 18ft.; or, alternatively, that they were not nearer than 25ft.. The defenders maintained that, under their Police

Acts, they were entitled to require the pursuer not to build within 25ft. of the old centre of the road. Lord Low, in the Outer House, was of opinion that the defenders were entitled to require the pursuer to keep back his buildings to a distance of 25ft. from the centre of the existing road. The question of expenses was reserved. In the Second Division their lordships—Lord Trayner dissenting—affirmed the decision, with expenses.

**The death of Mr. Robert Neill** took place at his residence in Higher Broughton, Manchester, on Sunday, March 5th. He was born in 1817, and was first engaged in Manchester in the workshop of a well-known joiner and builder in Strangeways. After occupying the position of foreman for some time, he began business on his own account in 1842. Mr. Neill erected the Manchester Jubilee Exhibition of 1887. In 1866 he was elected Mayor of Manchester, and in 1888-9 he served as High Sheriff of the County of Rutland.

**New Brickworks at Newhey.**—The Newhey Brick and Terra Cotta Company Ltd., formed in April, 1898, to acquire from the Waterhead Land Company, which was then in liquidation, the brickworks at Newhey, has just started operations. There is a splendid bed of shale running under the whole of the Company's freehold land, which is about 28 acres in extent. Since taking possession the Company has removed the whole of the old buildings and machinery, and erected a new plant complete in every detail. Three brick-making machines have been fitted, and are at work. Two of them are each capable of turning out 5000 bricks per day, and the other makes 10,000 bricks during the same period.

**Municipalisation of Gasworks.**—The local authorities at Morecambe, Skipton, Kirkby Lonsdale, Littleborough, and Northwich, are seeking to take over the gas undertakings in their various districts.

**Refuse Destruction and Electric Lighting.**—The Hackney Vestry has resolved to spend just on £250,000 in the laying down of combined works of electricity supply and refuse destruction. The work will be executed by Mr. E. Hammond, of 64, Victoria Street, Westminster.

**Battersea to have Electric Lighting.**—The Vestry of Battersea have decided to instal the electric light throughout the parish at a cost of £102,000. Two hundred and forty arc lamps are to be erected throughout the principal thoroughfares, and power is to be provided for 24,000 wired eight-candle power lights. Fivepence-farthing per unit is the price suggested, though the Act allows a charge of eightpence; and it is anticipated that the total income resulting from the instalment will be £14,040. The cost of generating the current, of maintenance, repairs, and expenses of management, it is estimated, will come to about £8500. A site for the erection of a central station at a cost of £42,000 has already been secured, and the scheme is to be proceeded with at once. The machinery employed will also be such as will easily lend itself to the supply of power for electric tramways in the parish.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—			
March 17	Blaenau Festinieg, Wales—Alterations, &c., to Chapel	.....	Rev. R. R. Morris, Brŷngraig.
" 17	Ipswich—Erection of Conservative Club	.....	T. W. Cotman, Architect, Northgate street, Ipswich.
" 17	Leeds—Band Stand Foundations	Corporation	City Engineer, Municipal buildings, Leeds.
" 17	Manchester—Erection of Post Office	H.M. Commissioners of Works, &c.	H.M. Office of Works, Storey's-gate, S.W.
" 18	Manchester—Sanitary Alterations to Cottages	Joint Workhouse Committee	A. J. Murgatroyd, 23, Strutt-street, Manchester.
" 18	Bridlington Quay—Buildings	Neal and Son	S. Dyer, Architect, Bridlington Quay.
" 18	Colchester—Cookery Room at School	School Board	Goodey & Cressall, Architects, Victoria-chbrs., Colchester.
" 18	Gloucester—Altering Premises	Y.M.C.A.	W. B. Wood, 12, Queen-street, Gloucester.
" 20	Morecambe—Mineral-Water Works	Aderson and Son	A. L. Lang, 12a, Filder-street, Morecambs.
" 20	Croydon—Workshop at Workhouse	Union Guardians	F. West, 23, Coombe-road, Croydon.
" 20	Manchester—Twenty-two Cottages	Improvement and Buildings Committee	City Surveyor, Manchester.
" 20	St. Albans—Additions to Hospital	Hospital Committee	F. Hibbert, 45, St. Peter's-street, St. Albans.
" 20	Thorpe-le-Soken, Essex—Additions to Police Station, &c.	.....	H. W. Gibson, Deputy Clerk of Peace, Shire Hall, Chelmsford.
" 20	London, S.E.—Alterations to Vestry Hall	Camberwell Vestry	W. Oxtoby, Vestry Hall, Peckham-road, S.E.
" 21	Fenny Compton—Cottage	Great Western Railway Co.	Engineer, Wolverhampton Station.
" 21	Brentford—Extension of Market	Urban District Council	N. Parr, Engineer, Clifden House, Boston-road, Brentford.
" 21	Hanley, Staffs.—St. Jude's New Parish Church	.....	R. Scrivener and Sons, Architects, Hanley.
" 21	Luton—School Buildings	.....	J. K. Brown and Sons, 17, Market-hill, Luton.
" 22	Braintræ—Dwelling-house	Mrs. Anne Downing	Clare and Ross, 66, Duke-street, Chelmsford.
" 22	London, S.E.—Bathrooms at Infirmary	Lambeth Guardians	W. Thurnall, Clerk, Offices, Brook-street, Kennington-road.
" 22	Croydon—Cemetery Works	Rural District Council	R. M. Chart and Son, Union Bank-chambers, Croydon.
" 22	Godmanchester, nr. Huntingdon—Alterations to Court Hall	Corporation	H. M. Townsend and R. A. Fordham, Cross st., Peterboro'.
" 23	Nelson, Lancs.—Walls to Bridge Abutments, &c.	Parks Committee	B. Ball, Borough Engineer, Town Hall, Nelson, Lancs.
" 25	Dewsbury—Extension of Electric Light Station	Corporation	H. Dearden, Borough Surveyor, Town Hall, Dewsbury.
" 25	Croom, Ireland—Sacristsy	.....	—Moriarty, Main-street, Croom.
" 25	South Kirkby—Wesleyan Church	.....	G. F. Pennington, Architect, Central-chambers, Castleford.
" 25	Westport, Ireland—Post Office	Office of Public Works, Ireland	Office of Works, Custom House, Dublin.
" 27	London, N.—Alterations to Steam Laundry	Holborn Union Guardians	J. Buley, Engineer, Suffolk House, Lawrence Pountney-hill.
" 27	Beckenham—Dust Destructor	Urban District Council	J. A. Angell, Council Offices, Beckenham.
" 28	London, E.C.—Coroner's Court, &c.	Poplar Board of Works	Lansdell and Harrison, 38, Bow-lane, E.C.
" 28	London, S.W.—Stabling and Cottage	Wandsworth Board of Works	Offices, East Hill, Wandsworth, S.W.
" 28	Kingston-on-Thames—Infirmary, &c., at Workhouse	Union Guardians	W. H. Hope, Union Offices, Portsmouth-road, Kingston.
" 29	London, N.—Boiler and Engine-house	Metropolitan Asylums Board	Pennington and Son, Hastings House, Norfolk-st., Strand.
April 1	Englefield Green, Surrey—Enlarging School, &c.	School Managers	W. Menzies, Architect, Englefield Green, Surrey.
" 1	Ipswich—Asylum Alterations, &c.	Asylums Committee	E. Buckham, Borough Surveyor, Town Hall, Ipswich.
" 4	Kaneby, near Sleaford, Lincs.—Superstructure of Lunatic Asylum	Kesteven County Asylum	G. T. Hine, 35, Parliament-street, S.W.
" 5	Lanchester—Bridge over New House Burn	.....	The Surveyor, Lanchester, Durham.
" 4	Leyton, E.—Public Baths	Urban District Council	Town Hall, Leyton, E.
ENGINEERING—			
March 17	Alnwick—Steel Wire Suspension Bridge	Rural District Council	Union Offices, Alnwick.
" 17	London, E.C.—Well Sinking	Poplar Union	F. J. Warden-Stevens, 34, Victoria-street, S.W.
" 18	Bexhill, Sussex—Storm Overflow Works	Urban District Council	G. Ball, Surveyor, Town Hall, Bexhill.
" 18	Earlestown, Lancs.—Gas Condensers and Exhauster	Urban District Council	A. Bowes Engineer, Town Hall, Earlestown.
" 18	Sheffield—Corrugated Iron Roofs, &c.	United Gas Light Co.	F. W. Stevenson, Engineer, Offices, Commercial-st., Sheffield.
" 18	Lynn—Steam Fire Engine, &c.	Urban District Council	W. Mullard, Clerk, Council Offices, Lynn.
" 20	Beckenham—Heating of Swimming Baths, &c.	Urban District Council	J. A. Angell, Engineer, Council Offices, Beckenham.
" 20	Rochford—Well and Boring	Union Guardians	J. Mansergh, 5, Victoria-street, S.W.
" 20	Burnley—Storage Reservoir	Rural District Council	S. Edmondson, Surveyor, 16, Nicholas-street, Burnley.
" 20	Bury, Lancs.—Boiler	Electric Lighting Committee	Borough Electrical Engineer, Electricity Works, Bury.
" 21	Todmorden, Lancs.—Retorts, &c.	Gas Committee	H. Hawkins, Engineer, Gasworks, Todmorden.
" 21	Dover—Water Mains	Town Council	H. E. Stilgoe, Borough Engineer, Town Hall, Dover.
" 21	Leeds—Dry Gasmeters	Gas Committee	R. H. Townsley, G. M. Inger, Gas Dept. Municipal blds, Leeds.
" 21	Belfast—Steel Girders, Joists, &c.	Corporation	A. B. Thomas, 7, Queen Anne's Gate, S.W.
" 22	Huddersfield—Waterworks	Corporation	T. & C. Hawksley, 30, Great George-street, Westminster.
" 22	Paisley, Scotland—Railway	District Railway Company	Formans and McCall, 160, Hope-street, Glasgow.
" 22	London, E.—Electrical Machinery	Poplar Union Guardians	F. J. Warden-Stevens, 34, Victoria-street, Westminster, S.W.
" 24	Ringstead, Northants—Two Girder Bridges	Thrapston Rural District Council	Surveyor to the Council, Thrapstead.
" 24	Stockport—Electric Lighting of School	Sunday School Committee	W. B. Leigh, Hon. Sec., Committee Room, Stockport Sunday School.
" 25	Bristol—Pumping Engines, &c.	Waterworks Company	T. & C. Hawksley, 30, Great George-st., Westminster, S.W.
" 25	Manchester—Steam Pumping Engines	Waterworks Committee	Secretary, Waterworks Offices, Town Hall, Manchester.
" 25	Edinburgh—Chemical Plant	Gas Commissioners	W. B. Herring, Engineer, Gasworks, Edinburgh.



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—Continued.</b>			
March 27	Dartford—Gas Main, &c. ... ..	Urban Rural District	G. H. Tait, Engineer, Sessions House, Dartford.
" 27	London, E.C.—Pumps, &c. ... ..	Holborn Union Guardians	J. Buley, Suffolk House, Laurence Pountney-hill, E.C.
" 27	Norwich—Heating and Ventilating Hospital	Health Committee	A. E. Collins, City Engineer, Guildhall, Norwich.
" 27	Glasgow—Railway	Caledonian Railway Co.	G. Graham, Engineer, Buchanan-street Station, Glasgow.
" 27	Dublin—Tramway	Great Northern Railway Co. (Ireland)...	Company's Engineer-in-Chief, Amiens-st. Terminus, Dublin.
April 5	Bury, Lancs.—Gas Purifiers, Valves, &c.	Gas Committee	H. Simmonds, Engineer, Gasworks, Elton, Bury.
May 17	London, E.—Construction of Wells, &c.	Poplar Union	E. J. W. Stevens, 34, Victoria-street, S.W.
June 30	Shanghai—Tramway Concession	Municipal Council	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
<b>IRON AND STEEL—</b>			
March 18	Eastbourne—Various Stores	Town Council...	R. M. Gloyne, Borough Engineer, Town Hall, Eastbourne.
" 18	Barry, Glamorgan—Cast-iron Pipes, &c.	Gas and Water Committee	E. W. Waite, Gasworks, Barry.
" 20	Lancaster—Cast-iron Pipes	Water Committee	J. Cook, Water Engineer, Town Hall, Lancaster.
" 20	Pwllheli—Cast-iron Pipes	Town Council...	A. J. Dickinson, Borough Engineer, Pwllheli.
" 20	Bury, Lancs.—Sanitary Tubes, &c.	Sewering, Paving, & Streets Committee	J. Cartwright, Borough Engineer, Bury.
" 20	London, E.C.—Rails, &c.	Burma Railways Co. Limited	Company's Offices, 76, Gresham House, Old Broad-st., E.C.
" 21	Southampton—Tramway Rails, &c.	Corporation	Kincaid, Waller, and Manville, 29, Great George-street, Westminster.
" 24	Newcastle-upon-Tyne—Pipes, &c.	Guardians	J. W. Gibson, Clerk, Union Offices, Pilgrim-street, Newcastle-upon-Tyne.
" 27	Poole—Pipes	Gas and Co. Limited	W. Davis, Secretary, Poole.
<b>PAINTING AND PLUMBING—</b>			
March 18	Bury, Lancs.—Lead Piping, Brushes, &c.	Gas Committee	H. Simmonds, Engineer, Gasworks, Bury.
" 18	Preston—Brushes, Paints, &c.	Corporation	Borough Treasurer, Town Hall, Preston.
" 20	Warrington—Oils, Paints, Bricks, &c.	Water Committee	J. Deas, Water Engineer, Warrington.
" 21	Manchester—Plumbing	Corporation	City Surveyor, Town Hall, Manchester.
" 30	London, S.C.—Painting Casual Wards	St. Saviour's Union Guardians	G. D. Stevenson, 13 and 14, King-street, E.C.
No date.	Shepherd's Bush, N.W.—Painting and Graining...		F. and A. Church, 266, Portobello-road, N. Kensington, W.
<b>ROADS AND CARTAGE—</b>			
March 17	Sutton Coldfield—Materials	Corporation	Borough Surveyor, Town Hall, Sutton Coldfield.
" 17	Guildford—Materials and Cartage	Rural District Council	A. Lambert, Highway Surveyor, Meadow, Godalming.
" 17	Hull—Stone for Macadamising	Corporation	A. E. White, City Engineer, Town Hall, Hull.
" 17	Repton, Burton-on-Trent—Materials	Rural District Council	C. F. Chamberlin, Clerk, Union Offices, Burton-on-Trent.
" 17	Windermere—Street Works	Urban District Council	C. E. Hines, Surveyor, The Institute, Windermere.
" 17	Preston, Lancs.—Paving Works, &c.	Corporation	Borough Surveyor, Town Hall, Preston.
" 18	Hoyle, Cheshire—Materials, &c.	Urban District Council	T. Foster, Surveyor, District Council Offices, Hoyle.
" 18	Burnley—Limestone and Granite Macadam	Rural District Council	S. Edmondson, 18, Nicholas-street, Burnley.
" 18	Morley—Materials	Corporation	W. E. Putnam, Borough Engineer, Town Hall, Morley.
" 18	Swindon—Road Works	Urban District Council	H. J. Hamp, Council's Surveyor, Regent-circus, New Swindon.
" 20	London, N.—Materials	Finchley Urban District Council	Surveyor, District Council Offices, Church End, Finchley.
" 20	London, W.—Sand, Shingle, Wood Blocks, &c.	Paddington Vestry	Surveyor, Vestry Hall, Harrow-road, W.
" 20	Beckenham—Road Making	Urban District Council	J. A. Angell, Engineer, Council Offices, Beckenham.
" 20	Hounslow—Various Materials	Urban District Council	W. A. Davies, Engineer, Town Hall, Hounslow.
" 20	Maidenhead—Various Materials	Town Council...	P. Johns, Borough Surveyor, Guildhall, Maidenhead.
" 20	Nelson—Materials and Team Labour	Corporation	B. Ball, Borough Engineer, Town Hall, Nelson.
" 20	Ashton-in-Makerfield—Materials	Urban District Council	Council Offices, Ashton-in-Makerfield.
" 20	Downham Market, Norfolk—Materials	Rural District Council	T. L. Reed, Clerk, Downham Market.
" 20	Grassendale, Lancs.—Materials	Gaiston Urban District Council...	F. W. Bowden, District Surveyor, Public Offices, Grassendale.
" 20	Heaton Norris, Cheshire—Road Making	Urban District Council	J. G. Banks, 79, Heaton Moor-road, Heaton Norris.
" 20	Ilford—Materials	Urban District Council	H. Shaw, 7, Cranbrook-road, Ilford.
" 20	Lower Bebington, Cheshire—Materials	Urban District Council	Council's Surveyor, Beddington.
" 20	Spibsey, Boston, Lincs.—Granite	Rural District Council	J. M. Simpson, Clerk, Boston.
" 20	Spennymore—Road Works	Urban District Council	G. W. Rogers, Surveyor, Silver-street, Spennymore.
" 20	Stokesley—Whinstone, &c.	Rural District Council	W. H. Dixon, District Surveyor, Kirby, Carlton, Northallerton.
" 20	Hanwell—Road Making	Urban District Council	S. W. Barnes, Offices, Church-road, Weist Hanwell, W.
" 21	Leamington—Cartage, &c.	Warwick Rural District Council	H. C. Passman, 48, Bedford-street, Leamington.
" 21	Salisbury—Materials, Haulage, &c.	Rural District Council	D. W. Morrice, District Surveyor, Homington.
" 21	Warwick—Road Stores	Rural District Council	C. H. Passman, 48, Bedford-street, Leamington.
" 21	Brentford—Paving and Drainage Works	Urban District Council	N. Parr, Clifden House, Boston-road, Brentford.
" 22	London, E.C.—Granite Spalls...	Holborn Union Guardians	H. O. Hill, Clerk, Clerkenwell-road, E.C.
" 22	Reading—Materials	Corporation	J. Bowen, Borough Surveyor, Town Hall, Reading.
" 22	Sutton, Surrey—Materials, &c.	Urban District Council	C. C. Smith, Surveyor, Public Hall, Sutton.
" 22	Uckfield, Sussex—Materials	Rural District Council	F. Hodman, 86, High-street, Lewes.
" 23	Deal—Flints	Corporation	T. C. Golder, 28, Queen-street, Deal.
" 24	Wood Green, N.—Works and Materials	Urban District Council	C. J. Gwynon, Surveyor, Town Hall, Wood Green.
" 24	Steyning, Sussex—Flints	Rural District Council	E. Cripps, Clerk, Council Offices, Ham-rd., New Shoreham.
" 25	Burnley—Road Materials	Highways and Sewage Committee	G. H. Pickles, Borough Surveyor, Town Hall, Burnley.
" 25	Cambridge—Carting	County Council	J. H. Coates, Surveyor, Little Shelford, Cambs.
" 25	Claypole, Newark—Carting, &c.	Rural District Council	C. D. M. Trinder, Surveyor, Brant Broughton, Newark.
" 25	Maldon, Essex—Materials	Rural District Council	M. C. Warner, Surveyor, Southminster.
" 25	Pontefract—Materials	Rural District Council	W. A. Glover, Clerk, Union Offices, Pontefract.
" 29	Ramsgate—York Paving Flags	Corporation	T. G. Taylor, Borough Surveyor, Broad-street, Ramsgate.
" 31	Aylesbury—Granite	County Council	R. J. Thomas, County Surveyor, County Hall, Aylesbury.
April 4	London, S.W.—Cartage and Materials	Middlesex County Council	H. T. Wakelam, County Surveyor, Guildhall, Westminster.
<b>SANITARY—</b>			
March 17	Howick, Northumberland—Stable Sewerage		C. D. Forster and Co., 24, Grainger-st, Newcastle-upon-Tyne.
" 20	Bournemouth—Sewers	Corporation	F. W. Lacey, Borough Engineer, Bournemouth.
" 20	Richmond, Surrey—Sewers	Town Council...	Borough Surveyor, Town Hall, Richmond.
" 20	Walsall—Scavenging	Rural District Council	A. H. Lewis, 29, Leicester-street, Walsall.
" 21	Aylesbury—Removal of Refuse	Rural District Council	F. B. Parrott, Clerk, Bourbon-street, Aylesbury.
" 21	Knarborough—Sewerage Work	Rural District Council	Annakin, Surveyor, 44, Station-parade, Halifax.
" 21	Croston, Preston, Lancs.—Sewers, &c.	Urban District Council	F. E. Dixon, 49, Lune-street, Preston.
" 21	Enderby, Leics.—Removal of Refuse	Blaby Rural District Council	B. A. Shires, Clerk, Alliance-chambers, Leicester.
" 21	Manchester—House Drainage	Corporation	City Surveyor, Town Hall, Manchester.
" 22	Hemsworth, near Wakefield—Sewers, &c.	Rural District Council	T. H. Richardson, Surveyor, Hemsworth.
" 23	Clydebank, Scotland—Scavenging	Town Council...	J. Hepburn, Town Clerk, Clydebank.
April 4	King's Lynn—Sewers	Corporation	E. J. Silcock, Engineer, 10, Park-row, Leeds.
May 12	Johannesburg—Sewerage Scheme		Town Engineer, Johannesburg.

## COMPETITIONS.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
March 22	London, E.C.—Additions to Town Hall	£50, £25	Shoreditch Vestry.
" 28	Killmallock, Ireland—Monument		Hon. Secretary, O'Sullivan Memorial Committee, Killmallock, co. Limerick.
" 30	Doncaster—Design for Master's House	£50, £25	Doncaster Grammar School Trustees.
" 31	Forfar—Isolation Hospital	£31 10s., £21, £15 15s.	Forfar and Forfar District Committees.
" 31	Swindon—Additional Fever Pavilion		W. H. Kinneir, Clerk to Hospital Board, High-st., Swindon.
April 14	Bradford—Cartwright Memorial Hall and Art Gallery...	£150, £100, £50	City Surveyor, Bradford.
" 18	Fleetwood—Schools	£10 10s.	Clerk, School Board, Fleetwood.
" 30	Ramsgate—Concert Hall, Reading Room, Lavatories, &c.	£50, £20, £10	T. G. Taylor, Surveyor, Broad-street, Ramsgate.
June 1	Leeds—Market Hall and Shops	£150, £100, £50	Corporation.
" 3	Harrogate—Kursaal	£150, £100, £75	Corporation.
No date.	Wilkesden—Elementary School		School Board.
"	Staines—School to Contain 250 Children		J. A. Engall, Clerk to School Board, Staines.



Property and Land Sales.

**EAST PARADE CHAPEL ESTATE, LEEDS.**  
This important Freehold Property offers singular facilities for professional and commercial purposes, as the present building is capable of conversion into a business emporium, but disregarding it, the site presents an almost unrivalled opportunity for the erection of a magnificent building suitable for **INSURANCE and PROFESSIONAL OFFICES.**  
The frontage to East Parade is 83ft., to Greek-street 133ft., and to Russell-street 134ft.  
The **INCLOSED AREA** is about **1265 SQUARE YARDS.**  
East Parade is the main avenue from the railway stations to the Town-hall (in which are the Assize Courts), the Municipal Buildings, the Poor Law and School Board Offices, the Fine Art Gallery, and Free Library.  
It is close to all the chief banking establishments, near to the Royal Exchange, and in the midst of the professional business of the city.  
Any insurance or other company seeking a site in a commanding position of increasing value cannot find one offering so many advantages as this property, at the price which the vendors are willing to accept; consequently this sale is one of special interest, and one which ought to command unusual attention.  
The widening of Infirmary-street, which leads direct from City-square to the Town Hall, will greatly enhance the value of this property, and other improvements likely to occur in the vicinity, will largely increase the demand for office accommodation, for which this site is extraordinarily suitable.  
**MESSRS. HEPPER and SONS** are instructed by the Trustees to **SELL by AUCTION**, in their Estate Sale Rooms, East Parade, at 4 p.m. on Tuesday, March 21st, subject to conditions. The above highly important **FREEHOLD PROPERTY.** Plans, particulars, and conditions of sale are being prepared, and may be had fourteen days before the sale, of the **AUCTIONEERS**, or of **Messrs. SCATCHELD, HOPKINS, and MIDDLEBROOKS**, Solicitors, Prudential-buildings, Park-row, Leeds, and Morley.  
**To Syndicates, Builders, and Speculators.—Chelsea.—**A magnificent Building Site of 24,000 super. feet.  
**MESSRS. ROBINS, SNELL, and CO.** have received instructions from the Wilkinson Sword Co. Ltd. (in consequence of the removal of their works to more extensive premises) to **LET by AUCTION**, at the **MART, City**, on **TUESDAY, MARCH 28th** next, the valuable **FREEHOLD SITE** now occupied by the Company's works, and admirably adapted for the erection of a handsome block of flats, a theatre, or other purposes requiring a large area in a leading thoroughfare. The site has frontages of 109ft. to King's-road and 250ft. to Sydney-street, and contains an area of about 24,000 square feet.  
Particulars, plans, and conditions of sale from the Solicitors, **Messrs. CRUSEMANN and ROUSE**, 85, Gracechurch-street, E.C.; and at the **Mart**; and from the Auctioneers, **Messrs. ROBINS, SNELL, and Co.**, 22, Conduit-street, Bond-street, W.  
**Forest Hill, S.E., close to station.**  
**MESSRS. EASTMAN BROTHERS** will **SELL**, at the **MART, E.C.**, on Tuesday, March 21st, at Two, a valuable **FREEHOLD BUILDING ESTATE**, 6 acres, with frontages to Devonshire-road, Honor Oak-road, and Manor-road, ripe for erection of villas, or a portion offers a fine site for an institution.  
Particulars of **Messrs. WONTNER and SONS**, Solicitors, 19, Ludgate-hill, E.C.; and of the **AUCTIONEERS**, 23, Bucklersbury, E.C., and at **Forest Hill, S.E.**  
**FAIRMILE PARK, near Cobham, Surrey.—A FREEHOLD BUILDING ESTATE** of about 40 acres, with possession.  
**MESSRS. DRIVER and CO.** have received instructions to offer to **AUCTION** at the **MART, Tokenhouse-yard, Lothbury, NEXT SPRING** (unless previously sold by private contract), the above property, situate in a favourite residential district, about a quarter of an hour's walk from the Oxshott and Fairmile Station, and about a mile and a half from Cobham Station. The estate comprises Building Land, ripe for development, the higher portion (sloping to the south) possessing charming views over the intervening country to Epsom Downs; and a Residence known as "South Lodge," with stabling and garden; Eight small Villas, some Cottages, and the "Griffin" Beerhouse. On a portion of the estate brickearth is being worked, and will be included in the sale as a "going concern."  
Particulars and plans, when ready, can be obtained of **CHARLES JUPP, Esq., Solicitor**, 48, Lime-street, E.C.; and of **Messrs. DRIVER and Co.**, 23, Pall Mall, S.W.  
**By order of Trustees.—Preliminary Advertisement.—**Freehold Building Estate, Streatham, near West Norwood Railway Station.  
**MESSRS. FIELD and SONS, and Messrs. WOLFORD and WILSHIN**, who are jointly concerned, will **SELL by AUCTION**, at the **MART**, at an early date, a valuable **FREEHOLD BUILDING ESTATE**, known as **High View Park**, comprising 16a. 1r. 10p., lying immediately at the rear of and with approach from Leigham Court-road; also a contiguous Freehold Building Site of 2a. and 5p. in a new road intended to connect Canterbury-grove with Thurlby-road.  
Particulars and plan, in due course, of **Messrs. KINGSFORD, DORMAN, and Co.**, Solicitors, 23, Essex-street, Strand; of **Messrs. WOLFORD and WILSHIN**, Auctioneers, Anerley, S.E.; and of **Messrs. FIELD and SONS**, as above.

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Sin. by 4ft. 11in., of best selected Pine; best drab tapes and lines; fitted with Beaumont's Patent Action. No reasonable offer refused.—Apply "Housekeeper," 23, Crutched Friars, E.C. 2

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##### INSIDE SIZES.

	Height.	Width.	Depth.
Large ...	48in.	25in.	16in.
Medium ...	42in.	20in.	13in.

Non-absorbent, superior to Marble or Slate.

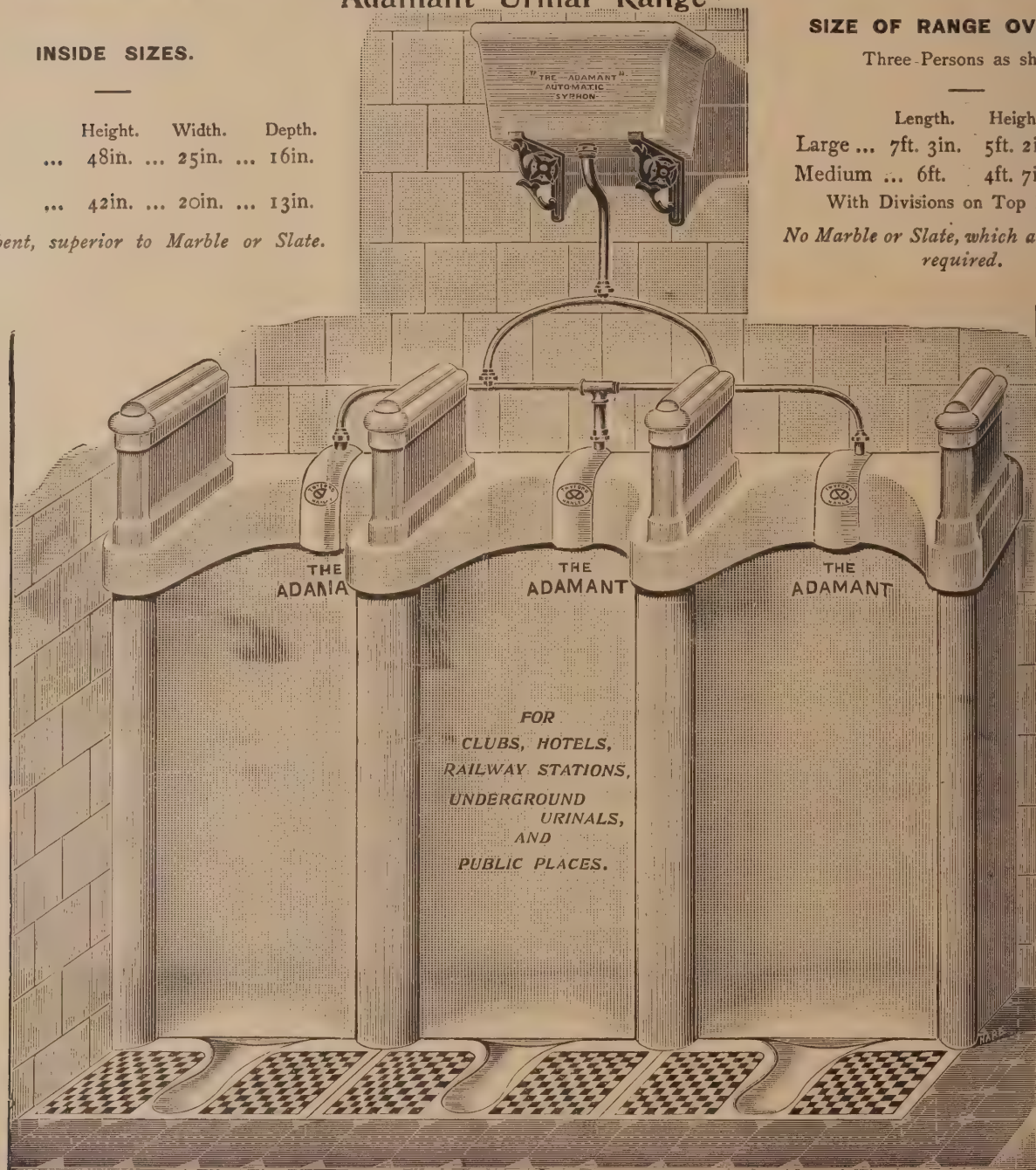
##### SIZE OF RANGE OVER ALL.

Three Persons as shown.

	Length.	Height.	Depth.
Large ...	7ft. 3in.	5ft. 2in.	1ft. 7in.
Medium ...	6ft.	4ft. 7in.	1ft. 4in.

With Divisions on Top Facings.

No Marble or Slate, which are absorbent, required.



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MARCH 22, 1899.

No. CCXV.

## An Architectural Causerie.

The Art Teaching  
of William  
Morris.

*I know by experience  
that the making of de-  
sign after design—  
mere diagrams, mind*

*you—without oneself executing them is a  
great strain upon the mind. It is neces-  
sary, unless all workmen of all grades are to  
be permanently degraded into machines, that  
the hand should rest the mind as well as  
the mind the hand.*—"Art and the Beauty  
of the Earth," being the text of a lecture  
delivered by William Morris in Burslem  
Town Hall, October 13th, 1881.

The first of what promises to be a most  
delightful series of booklets was made the  
subject of an article published in our columns  
some months ago. The second is no less  
desirable, and we are glad to note that there  
are more to come. Of the worth of this  
unstudied deliverance there is no need to  
speak at all fully, our object being merely to  
say that its moderate price brings the work  
within reach of us all. When we spoke in  
our haste of the awful expense of the printed  
books he produced we should have enquired  
"what of their cost to him?" He neither  
asked nor expected the millions to pay.  
Knowing well where the money was, it prob-  
ably amused him to think that, merely to be  
in the fashion, the people who wasted the  
most would help him to give us a lesson.  
It is pleasant to think that his miscellaneous  
writings and sayings may be recovered and  
issued in the form of the books we are prais-  
ing. Whoever collects these reprints should  
notice their dates, and range them accord-  
ingly, for within our recollection there have  
been remarkable changes in the intellectual  
world, and every such change, or indication  
of change, was reflected in Morris's mind.  
In his earlier days, if we may take him at his  
word, he was a mere fatalist, seeing evil  
enough and to spare, but no way of escaping  
therefrom; at any rate no way of bettering  
matters by talking. But while singing of  
"Empty days," and, as if to show what  
could be, he gathered around him workers  
who knew nothing of idleness, and desisted  
only when bidden by Nature. Are we to  
suppose he was not thinking the while, seeing  
where his heart was, and what he had to  
contend with? We are, at any rate, sure  
that there was never a shrewder observer,  
and that he noted as tending to better or  
worsen his work whatever went on in the  
world. He had, as his eulogist says, "an  
instinctive perception of right" which put  
him ahead of his times, and naturally made  
him impatient, not so much with the people  
about him, as with their roundabout ways of  
reaching a point. The change of which we  
have spoken has pretty well revolutionised  
thought, and affected all branches of know-  
ledge. There is evidence of it in Mill,  
and, where we might least expect it, in books  
which profess to facilitate the study of  
Architecture. The older economists were  
almost solely concerned with a set of ideas  
pertaining to the conception of a system  
supposed to be permanent, whereas we  
observe it to be moving, and are immensely  
excited about it. In Morris the change  
was complete; for he who had been despondent,  
finding all his pleasure in Art, and wishing

it might be shared, became conscious at once  
of a call to the outside world; was convinced  
that whatever was wrong could be altered,  
and that whoever could help should. The  
date of this lecture at Burslem, a town pro-  
ducing "more smoke than pottery," may  
account for the note of discontent being  
heard perhaps too often; but the date, as  
we said, marks an epoch, and in all his later  
discourses we hear more of his hopes than  
of his fears. E. R.

### The One Drop of Gall.

To all those—and they are  
many—who do not regard  
a large practice and a heavy  
balance at the bank, as the only aim and ideal  
of the architect, the position of many of our  
most successful practitioners presents an  
aspect not altogether devoid of a certain  
amount of pathos. After all is said and done,  
the deepest satisfaction that a man can get  
out of his life's work is,—after the approval of  
his own conscience,—the knowledge that he  
holds the respect and sympathy of his fellows.  
To many of those of high general talent, who  
have worked their way, by their energy and  
character, to a large practice, and a large  
measure of general practical success, even to  
the extent of impressing the Government and  
the public with a sense of their abilities,  
there must come moments when the thought

fessors should be men whose artistic gifts  
were not balanced by character and intellect.  
It is not exactly the calling for "the erotic,  
the neurotic, and the tommy-rotic." But, by  
the nature of things, it is evident that a call-  
ing which is first of all artistic—which has  
no reason for its existence, now-a-days, if it  
be not artistic—demands, first of all, some  
natural artistic gift. The practical question  
is, would it not be possible to discover  
whether the aspirant to artistic fame possesses  
this gift; to arrange that all those wishing  
to enter the profession should have their  
capabilities tested before being allowed to  
proceed further in a career for which they  
may be unfit. It is evident that if you wish to  
produce an architect, you must have the  
proper quality of raw material. You cannot  
make a silk purse out of a sow's ear. In the  
other plastic arts the same necessity hardly  
arises. The artistic faculty is well-nigh  
the only thing required, its cultivation  
is the one thing to which the student's  
attention is directed, and its fancied posses-  
sion was the one thing that decided his  
choice. If he possess it not, this is soon  
apparent to himself and every one else. He  
can at once retire from a career in which  
practical success would be difficult. But, in  
Architecture, how few adopt it because they  
think they have artistic powers; and, in the  
present day, the cultivation of the artistic



QUAINTON. (See p. 99.)

that they do not carry with them the applause  
and sympathy of their comrades, and those  
best qualified to judge—that they would never  
have obtained their positions by the vote of  
their colleagues—must rob this success of its  
greatest charm. How many able men, men  
of the highest talent and character, do we not  
find, completely out of their element as archi-  
tects? How many potential Lord Chan-  
cellors or Cabinet Ministers; men who, as  
administrators or as soldiers, might have  
earned the admiration of their country, or, as  
surgeons or scientists, might possibly have  
won the undying gratitude of humanity? As  
architects, this crowning glory is hope-  
lessly beyond their reach, for the artist's  
fame cannot be bestowed by any Government,  
it is not made by the public, but by his  
brother artists. It is not that high general  
talent, lofty character, and strength of pur-  
pose, are wasted in Architecture. Far from  
it. Architecture is a pursuit which emphatic-  
ally demands these qualities. But there  
must be added to them the one little gift, the  
instinct for art, for without this they are  
nothing worth. But neither would it be to  
the advantage of Architecture, that its pro-

faculty is well-nigh the last thing to which  
the student's attention is directed. He finds  
plenty to occupy his mind, plenty of scope  
for his energies, in mastering the practical  
side of his calling, to say nothing of the  
archaeological, the professional, or even the  
purely commercial. It is possible that,  
wrapt up in these pursuits, and succeeding  
well at them, many unimaginative men  
actually go through life quite unconscious  
that they lack the one thing needed to make  
them architects. Or if they do discover it,  
it is often too late; and seeing that practical  
success can be assured without an atom of  
artistic ability, well, high-flown sentiment is  
all very well in its way, but we have to make  
a living; why throw up a good opportunity,  
just because certain pedantic persons attach  
a restricted meaning to the word "Arch-  
itecture?" The pity of it is that there are  
better opportunities for such men in other  
pursuits, where a life of hard work and  
honest endeavour might meet with, not only  
the monetary reward, but also the reputation  
which is its due; where no such bitter  
flavour is found in the wine cup of success.

A.R.J.



## On Reflection.

### The Decoration of St. Paul's.

A GOOD many people are very angry with Sir W. B. Richmond for the manner in which he is decorating (or, as some prefer to say, desecrating) St. Paul's Cathedral. The criticism is not a new thing, but the latest developments of the work seem to have inspired a louder and more general outcry. Of recent critics perhaps the most extreme is Mr. Samuel Howe, of New York, who has contributed a strongly-worded letter to the "Times" on the subject, and followed it up with another in the "Pall Mall Gazette." We would not suggest that the decoration of St. Paul's is no concern of Mr. Howe's, for these great monuments of human genius belong not to a city or a nation, but to mankind. But we would point out that Mr. Howe's criticism defeats its own purpose owing to its lack of restraint. To speak of Sir W. B. Richmond's work as "an impertinence," and "a wretched business;" to hint at his "poverty of drawing," "limited knowledge of colours," and "ignorance of strong decorative problems;" to say that "the artist of St. Paul's decoration cannot draw;" to do all this is to abdicate the position of critic and come perilously near the border line which separates sober criticism from vulgar abuse. More sober, and therefore more effective, are the criticisms of the Earl of Wemyss, Mr. Lewis G. Fry, and others, and with these we confess to a large measure of sympathy. The decoration itself is not so much at fault; indeed, much of it, we think, is altogether excellent. Its great fault is that it does not harmonise with the architectural character of the cathedral, being more fitted for a Byzantine than a Renaissance building. It is certainly not the style of decoration Wren would have adopted, and that is in itself a grievous fault; without perfect loyalty to the spirit of the original design, any attempt to complete or restore a great work of Art becomes almost a sacrilege. It is true that Wren desired to use mosaic, but it is not conceivable that he would have done so in a manner that would have done violence to his own architectural conception. For the benefit of future generations the inscription over the north door should be amended. The "Si monumentum requiris, circumspice" is no longer applicable; there should be an addendum explaining in choice Latin that Sir Christopher had nothing to do with the mosaics and the paint.

### Harrogate and Its Pump Room.

THE Corporation of Harrogate recently invited designs for the erection of a new pump room, or, as an alternative, the enlargement of the present building. Mr. Pawson, of Leeds, was engaged as assessor, and the premiums, amounting in all to £160, were duly awarded. It now appears, however, that the Corporation intend to throw over all the competitive designs—fifty-six in number—and adopt instead one which the Borough Surveyor has had lying for some years past in a pigeon hole in his office. The Surveyor has been asked to submit this plan, with an estimate of the cost, to the next meeting of the Wells and Baths Committee. If the Committee had an eligible plan it is a pity they did not find it before spending £160 of the ratepayers' money, and inducing fifty or more architects to waste their time over a useless competition. It was pointed out at last week's meeting of the Corporation that the course proposed was not fair to the gentlemen who had competed, and one councillor went so far as to declare that the Committee were making themselves ridiculous in the eyes of the whole of England. Nevertheless, the

majority of the Corporation, unmoved by these considerations, adopted the recommendation of the Committee. Such tactics are not calculated to inspire respect for the fairness and judgment of the Harrogate Corporation, and may well deter architects, whose time is too valuable to compete for the mere chance of a premium, from entering the competition just advertised by the Corporation for a new Kursaal. When will town councillors begin to familiarise themselves with the elements of professional practice, and act towards architects with the same consideration and fairness they habitually—and rightly—display towards the tradesman and the mechanic?

### Secret Commissions.

THE Blue Book, just published by the Council of the London Chamber of Commerce, embodying the report of the Special Committee on Secret Commissions, is an astonishing revelation of the wide prevalence of systems of bribery in this country. Not only is trade paralyzed thereby, and a condition of commercial probity rendered to a large extent untenable, but the wider aspects of business and even the professions themselves are morally enervated by the payment of commissions, which, though of a secret and illicit and often fraudulent nature, have in many cases become a "custom." The story is an ugly one all through, whether we read of doctors who draw a commission of from 25 to 50 per cent. on the price charged by the chemist who dispenses their prescriptions, and who take a "discount" from the undertaker who buries their patients; or of the enginemen who accept the secret bribes which are paid them by the manufacturers of lubricating oil on a scale which tempts them to waste their employers' property and use the inferior commodity which brings the highest "discount" per gallon. Solicitors divide the stockbrokers' fees on investment for clients of trust or other funds and the accountants' fees in bankruptcy cases; while stockbrokers and bankers conform with the same usage, and the retention of secret profits by brokers on a sale of produce at an agreed rate of commission is at the present time grown to be a crying evil in the City. In workhouse and prison contracts bribery is rampant. With dealers, manufacturers, large shops, and stores bribery of the customers' servants is the rule rather than the exception; and in many lines of manufacture the system has become one of blackmail, when the refusal to pay secret discount to the buyer's agent is understood to mean the almost certain loss of the buyer. Morality in commerce is difficult to enforce, because it is almost impossible to define, and a most serious difficulty is in the way of any proposal to make the bribing of an agent, or his acceptance or solicitation of a bribe a criminal offence, in the fact that the public conscience is not roused to the immorality of the custom, but acquiesces in it. This has led people who may be considered to be well informed and competent judges of the matter to come to the conclusion that the mass of corruption is such as to render it hopeless to struggle towards purity, but the committee do not take this view of the matter. The committee recommend, in chief, that the principal should enforce vigorously towards his agent those civil rights which he now holds; that the matter should be brought by public discussion, and otherwise, before the people; and that manufacturers should openly state in their circulars that they pay no bribes.

### "Trade Commissions."

ARCHITECTS and engineers do not show in any very flattering guise in this report; the custom of paying secret commissions is notorious in the building trade, and architects

and engineers, although they cannot seriously defend the system, are yet widely implicated in it. The prevalence of the offence among architects is sufficiently demonstrated by those praiseworthy attempts which the more honourable members of the profession have taken to stamp it out. It is to the credit of architects that they are conscious of the smirch, and would have none included in the profession who are open to accept bribes, as is evinced in the signed declaration required of all candidates for election as Associates or Fellows of the R.I.B.A. At the same time the practice of its members is not in absolute conformity with the principles of the body. We may remember how, some four years ago, a printed circular was sent by some enterprising firm of manufacturers to London architects whose names and addresses had, it would seem, all been obtained from the Institute calendar, and we may remember the hypersensitiveness with which the late secretary referred to the episode in the Institute journal, adding a self-congratulatory comment to the effect that of course no member of the Institute would respond to such an invitation. Perhaps this comment was not altogether as tactless as at first seemed, for Sir Edward Fry in his second letter to the "Times," on the subject of Secret Commissions, in 1896, was in a position to speak plainly on this matter. "As to the Architect," he wrote, "the Secretary of the Royal Institute of British Architects has abundantly confirmed what I said as to the existence of the above, and of the regret with which it is viewed by the more honourable members of the profession. But I cannot accept his invitation to turn my attention 'more exclusively' to those architects who are not members of the Institute, when that body contains, according to the secretary, members whose 'moral fault' has been apparent."

## AN ARCHITECT WANTED.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—I am wanting a really artistic architect to design me a house, medium sized, on a very picturesque spot in the country. Can you give me any advice as to a suitable architect? I want a house long and low with a large square entrance hall, to be used as a comfortable sitting-room, a wide staircase and a gallery going partly round hall, a dining-room and boudoir for a lady, about six bedrooms, and three servants' rooms, with comfortable offices, &c. I want something little unusual, either dark stained wood and thatch, or whitewashed brick, old timbers thatch, and all kinds of angles and windows. Will you tell me whom you advise my applying to?—Yours truly, B. L.

[We shall be pleased to receive communications from any architects who may be disposed to offer their services to our correspondent.—Ed. B. J.]

**To Erect a Refuse Destructor** the Plymouth Town Council desire to borrow £9000, and are applying to the Local Government Board for sanction to do so.

**Proposed Pier for Fleetwood.**—The promoters of the Fleetwood Pier Company are endeavouring to obtain permission to construct an open pier at Fleetwood, to extend 430 yards from the Fielden Esplanade. The estimated cost of the work is £43,390, and power is sought to borrow money not exceeding one-third of the paid-up capital. Objections have been raised to the undertaking by the Lancashire and Yorkshire Railway, the London and North-Western Railway, and the Urban District Council of Fleetwood.



# THE GREAT CENTRAL RAILWAY.

## DESCRIPTION OF THE ROUTE TO LONDON.

BY CHARLES G. HARPER.

**A**LTHOUGH the geographical features of the country through which it passes have not presented any great engineering problems in the making of the Great Central Railway, there have been many difficulties to contend with at certain points, caused chiefly by the necessity of driving the new line in places through densely populated districts. The new extension, commences at Annesley Junction, some ten miles north of Nottingham, and it is here, on entering the northern outskirts of that populous city, that the costly and delicate engineering works began. Running over a long brick viaduct at Bulwell, constructed of the unlovely, but hard and enduring, blue "Staffordshire brindles," of which all the Great Central brickwork (excepting the stations) is composed, we come to the Sherwood Rise tunnel, of six hundred yards' length, pierced through the heights on which the suburban residential districts of Nottingham are situated. At the southern end of this tunnel is Carrington Station, succeeded by another tunnel, three-quarters of a mile long, which leads directly into the great "Nottingham Central" station, built jointly by the Great Central and the Great Northern. This fine station covers a site of over twelve acres, formerly covered with the densest and poorest population in Nottingham,



CHARWELTON: FIRST BRIDGE OVER THE CHERWELL.

crowded into insanitary hovels of the worst description. As its name implies, the situation is central, and it is easily reached from the principal business streets.

A peculiarity of Nottingham is that the ground on which it is built consists of a soft yellow sandstone. Through this the Great Central engineers have had to pierce their tunnels under peculiarly difficult conditions. To adopt the well-known "cut-and-cover" system would have been so costly as to be practically prohibitive, taking into consideration the highly valuable nature of the property under which the line goes southward from the Central Station to the River Trent. The very heart of the city is thus traversed, and had that system been adopted, this portion of the Great Central would have been as costly as the famous completion of the Circle in the City of London, between Mansion House and Aldgate, which was made at the rate of two millions sterling a mile. Banks, insurance offices, warehouses, and factories of the largest kind would have had to be pulled down and rebuilt, and compensation claims would have filled the law courts with business for years. The company adopted a system of the most elaborate underpinning instead, itself a costly and most delicate resort in this instance, for not only were the buildings to be underpinned of great weight, but the tunnel had to be constructed so near the surface that in several instances the crown of the arch cuts through the cellars and basements of hotels and factories, and here and there the tunnel has had, for the same reason, to be made with an arch so low as to only just clear the funnels of the locomotives. The engineers tell a weird story

of how the basement strong-room of a bank was cut through, its floor removed, and replaced by the tunnel arch. This difficult tunnelling was completed, however, without the slightest displacement of the buildings above. At the southern end of this last Nottingham tunnel the ground begins to fall sharply towards the River Trent. There is a station for Arkwright Street, and then the Trent is crossed in three spans of lattice steel girders, of 110ft. width, with four lines of rails. Thence the country becomes easy, past East Leake, Ruddington, Loughborough, "Quorndon and Woodhouse" stations, and, indeed, remains so to within a mile of Leicester. The country is pretty at Quorndon, which is the district of the famous Quorn Hunt; and the prettiest piece of scenery along the whole route to London is to be found just before reaching Leicester, at a point near Swithland, where the railway crosses the great Leicester reservoirs on a brick viaduct. Here the line skirts Charnwood Forest, and here, at Mount Sorrel and Groby, granite is quarried; the only place in the Midlands where that is found. The railway approaches Leicester by way of "Belgrave and Birstall," and comes along a tall viaduct into the Leicester high-level station, and so to the great Abbey Lane coal sidings.

Viaducts of brick or steel characterise the Great Central throughout Leicester and for some distance southward, as it makes for Whetstone, Ashby Magna and Lutterworth, coming eventually to Rugby.

Rugby is a singular place. The town, whose prosperity is probably caused in equal moieties by the famous school and by the long-existing railway facilities of what Dickens called "Mugby" Junction, is a considerable distance from the different stations. Once, in the old coaching days, an obscure hamlet, to which letters were addressed "Rugby, near Dunchurch," the cynicism of Fate has, since railways ousted the coaches, caused the old township of Dunchurch to decay, and Rugby to flourish, so that "Dunchurch near Rugby" is the modern formula. Possibly the near neighbourhood of the Great Central will render Dunchurch a service. It stands at present, a picturesque village, on the Holyhead Road, with the village cross, stocks, and "lock-up," a complete picture of the England of a hundred years ago.

South of Rugby there are some heavy works on the new line; the Willoughby cutting, two miles long, and the Catesby Tunnel, near Charwelton, of 3000 yards, together with several brick viaducts, making this an interesting section. At Woodford there are big engine sheds and sidings for coals. "Charwelton" is the wayside station for the village of that name, which marks the rise of the little River Cherwell, flowing thence to its junction

with the Thames at Oxford. The village, with its ancient stone bridge over the infant stream, often dry in summer, is a picturesque spot. At Byfield there is a junction line to Banbury now in progress, and from the Great Central near Brackley one obtains a passing glimpse of Sulgrave crowning the ridge of an upland. All good Americans go (or ought to go) to Sulgrave, for, if not a village of any



SULGRAVE.

great beauty, it is of strong historic interest, for here still stands the farmhouse which was the ancestral home of that branch of the Washington family from which descended the great George, the founder of the United States of North America. The church has memorials of bygone Washingtons in it.

Now we come, past the small wayside station of Fimmere and Calvert, to the junction with the Metropolitan Railway, at Quainton Road, a station a mile and a half from the pretty, old-world Buckinghamshire village of Quainton, with its village green, village cross, and great windmill, backed by tall trees, for all the world like one of those picturesque places which the lamented Rand lph Caldecott was wont to imagine.

From this point the Great Central has running powers over the Metropolitan line as far as West Hampstead, where the short London section begins.

The Sailors' Institute at Bilbao was opened on March 4th. The cost of the site and building amounts to £2000.

The Cost of Cheddleton Asylum, Staffordshire, was estimated at £187,250, of which £164,250 was the estimated cost of buildings, drains, &c. The contract entered into for the latter items was £865 in excess of the estimate, and the committee dealing with the matter are now applying to the Local Government Board for sanction to borrow an additional £35,000 to complete the buildings. The increased expenditure, it was stated, was necessitated by alterations in the drains, the lighting of the buildings, making the roads, and disposing of sewage.



CCNARER

DUNCHURCH.



## THE ARCHITECTURAL ASSOCIATION.

### REFLECTIONS ON THE ENGLISH RENAISSANCE.

By REGINALD T. BLOMFIELD.

THE ordinary meeting of this association took place last Friday evening, March 17th, at 9, Conduit Street, Mr. G. H. Fellowes Prynne in the chair. The minutes of the previous meeting were read and confirmed, and a vote of thanks was accorded to Col. Edis for conducting members of the association at their last spring visit on March 11th to the Central Railway Hotel, Marylebone Road, and also to Mr. E. Wragge, who conducted them over the Great Central Railway Station adjoining. The next spring visit was announced to take place at the Fire Testing Station of the British Fire Prevention Committee at North Bank, Regents Park, W., the nearest railway station to which is St. John's Wood. The president, Mr. G. H. Fellowes Prynne, announced that the association's common room will be opened on Monday, March 20th, at 5 p.m. The following classes were announced: On March 22nd, Mr. J. H. Leaning will lecture, at 6.30 p.m., on "Quantity Surveying," and on April 12th, Prof. Henry Adams, at 6 p.m., on "Land Surveying."

The president then called on Mr. Reginald Blomfield to read his paper on "Certain Reflections on the English Renaissance." The paper was as follows:

The English Renaissance is a subject which, historically treated, would be quite beyond the scope of a single lecture. I propose, therefore, to call your attention to certain aspects of this chapter in history, and to endeavour by this means to disentangle some clue to guide us through the perplexities of modern architecture. Any conclusions which I may offer you, however I may express them, I offer with great diffidence. The present condition of Architecture is so unsatisfactory, and so beset with difficulties, both in theory and in practice, that the most one can hope to attain to is some firm foothold on the facts of history—a foothold from which we can start again with at least a glimmering of an idea of the goal at which we aim. For in Architecture, the oldest of the arts, we can only consider ourselves on safe ground so long as we keep in touch with what has actually been. You may recollect the words that Viollet-le-Duc used nearly forty years ago: "If art has lost its way, let us not impel it to the right or to the left under pretence of conducting it into the true path. . . . The study and love of art—not of one form of art—are the only means to which the wise will recur when art seems to decline." It is only by patient and critical study that we can hope to retrace our path to the highway of Architecture.

#### The Earlier and Later Renaissance.

A comparison has been made between the Renaissance of the sixteenth and seventeenth centuries in England, and that of the nineteenth century (assuming, of course, that the latter exists). In order to test the worth of any such comparisons it is necessary to consider for an instant what that great Renaissance was of which our own sixteenth and early seventeenth century Architecture was but a distant echo. There are two points about this movement which differentiate it from any others in the history of art. The Architecture of the ancient world was one long continuous progression from its dim beginnings in the East till its disappearance with the downfall of the Roman Empire. There was no break in the Hieratic Art of Egypt and Assyria. This, again, only developed into a freer and more perfect expression in the hands of the Greek, to be adopted by the Romans, and wrought by them into the full expression of their own magnificent genius. Architecture might flourish in one place more than another, but throughout its long history there was no break in its continuity. Its historical development went straight ahead, with no throw-back to earlier art till its vitality dwindled, and it died out with

the decaying forces of Roman civilisation. There was a curious objectivity about the ancient world which prevented any intense reflection of its life and thought on its visible art. That art was settled for it. It was accepted as part of the established order of the State, and so it ran its course without regret and without ambition. Now, the Renaissance was a conscious

#### Return to the Art of the Past,

to the art, that is, of the Roman Empire. It was not a mere revival. It was a deliberate and successful attempt to enter into the spirit of the great Roman architects. What makes it the more remarkable, and, indeed, without parallel in history, is that there already existed another method of architecture in full and complete maturity, for Gothic architecture had reached the very limit of technical skill—witness King's College Chapel alone. Yet men were prepared to turn their back on this traditional art, they were learning to welcome the new method, to repudiate their familiar language, as no longer adequate to their needs. For the first time we strike the characteristic note of modern art, its intense subjectivity, its deliberate consciousness. This momentous change in Architecture did not result from the craftsman's instinctive habit of refining on the past, but from a change in the direction of intelligence, from a certain revulsion in ideas, not from the action and re-action of craftsmanship.

#### Two Methods of Development.

For changes in Architecture come about in one of two ways. When a method (or style, to use a doubtful term) is fairly established as traditional, the actual manipulation of materials by workmen and the introduction of new materials, lead to the extension and modification of the style itself, as, for instance, the growth of Perpendicular Gothic out of Decorated. The development comes from within and proceeds more or less unconsciously. But there is another source of change in architecture. In the course of ages the seeds of change are slowly at work, till there results some great upheaval of ideas which dislodges mankind from its mental anchorage. The old idioms seem meaningless, the familiar formulae barren, and then comes that tentative effort after a new expression, which will gradually expand and consolidate into a permanent art. A new factor will have taken its place in human intelligence, which has to be recognised, however much our sympathies may lie with the art it has replaced. Such a change occurred at the Renaissance. Since the fighting days of the dark ages civilisation had steadily advanced. Men were rich, intelligent, learned, and the keener and more active minds had long since shown impatience of mediæval standards and idioms. There was but one direction in which this enterprise could find its natural outlet, and this was scholarship. Latin was the familiar language, scholars naturally turned to the country of its birth, and so from the study of the literature of Rome they came to the study of its art, and that art was adopted with enthusiasm as the only fit

#### Expression of Humanism,

that new motive in thought and morals which the Renaissance won back for mankind. In this regard Alberti is typical of the Earlier Renaissance, a man of noble family and brilliant personal qualities; he can have found little to attract him in the professional side of Architecture. His reward lay in his keen enjoyment of the art, in the occasion that it gave him for the exercise of his own fastidious scholarship. Thus, the peculiarity of the art of the Renaissance is that it was much more than a mere change of technique. It was the result and the expression of a new order of ideas which had been slowly growing for generations until it became articulate in art; something altogether greater than the small ephemeral fashions which are all that the nineteenth century has to show by way of a Renaissance.

#### Effect on English Builders.

Now, how did the English builders regard this far-reaching movement? I think it is quite

plain that in the first instance, and indeed, for several generations, they did not in the least understand it. In the first place, they themselves were ingrained in the Gothic tradition, trained exclusively in its method of construction, and unfamiliar with any architecture but that of their own country, one might almost say of their own county. And, in the second place, they were introduced to this new art by amateurs. Merchants and scholars travelled in Italy and brought back astounding stories of its magnificent palaces. Soldiers and ambassadors, such as Lord Henry Marney, Lord Sandys of the Vyne, or Sir Richard Weston of Sutton Place, able and observant men, saw and appreciated the wide significance of the new movement abroad; and the King himself and Wolsey set the fashion by importing Italian artists for the decoration of their palaces. All the inspiration came from the Court, and the wealthier upper classes; and the English builder, probably somewhat against his will, had to set to work to master this strange new fashion.

#### Italian Influence.

The only acquaintance with it, as amongst Englishmen, was possessed by amateurs, and the workmen at first had to follow their instructions with such help as they could get from the work actually executed by Italian craftsmen in this country, and it is to be borne in mind that, in actual fact, not many Italians were over here, and that the majority of them with the exception of such men as Torregiano, Rovezzano, and the Majani, were quite inferior men. The results were the most ridiculous blunders in grammar, for the Englishmen endeavoured to make some rudimentary acquaintance with the orders by way of ornament, and planned and constructed their houses according to their own tradition. As the sixteenth century went on, and the first Italian influence disappeared, their workmanship fell off, but their knowledge of the orders grew. Students, such as John Shute, with some architectural training, were sent out by noble patrons to make systematic study of Italian architecture; and the German and Flemish workmen who succeeded the Italians brought with them an abundance of pattern books; so that the business of decorating houses with fatuous ornament proceeded apace. I have mentioned elsewhere that singular instance at Shaw House, near Newbury, a building which I think characteristic of the state of mind of the Englishman in the time of Elizabeth. Here the owner had himself built a good house of brick and stone on the ordinary Elizabethan plan, but he then adorned it with inscriptions in Greek and Latin, I cannot help thinking from their wording, with some little vanity in his own superior scholarship and knowledge of Italian art. Yet, in fact, the man was barely within the fringe of his subject. Correct details and Latin and Greek inscriptions were not of the essence of the Italian Renaissance, and it required a finer brain and closer training than was possessed by either amateur or builder of the sixteenth century to see the meaning of the great change that had taken place in Italian, and through Italian, in European art.

#### Influence in England.

Yet even in far-away England the air, if one may say so, was instinct with its influence. The horizontality of Elizabethan architecture was itself a dim reflection of the great recovery of the Italian Renaissance; and the day was fast approaching when an Englishman of genius would see his way through all these troubled efforts and grasp the principle, the basis of idea, that underlay this fundamental change in architecture. Let us consider for a moment what that principle was. In spite of the researches of such men as De Geymuller, our younger students are rather apt to consider the architecture of the Italian Renaissance as an affair of detail. Their attention is arrested by its exquisite carving, its arabesques and other details, which form such a tempting subject for illustration. Yet all this detail might go, and the value of the work of the great Italian architects remain untouched. For the basis of their work, and it is this which gives it permanent value, lay in construction; their real accomplishment lay, not



in ornament, but in their avoidance of it, and in their past-mastership of proportion and of the intellectual problems of architecture. They studied to some purpose the remains of the

### Stupendous Architecture of Rome.

Not only did they extend to a point as yet undreamt of since the days of the Empire, the use of domes and simple vaulting, but they recovered the use of the lintel in combination with the arch. They threw off the unreasonable intricacy of detail with which later mediævalism had encumbered Architecture, and brought back the art to its abstract basis in construction, that is to say, to the simplest and most direct methods of building, the lintel for crossing narrow spaces, and the arch for wide ones (I speak of course, without regard to steel and iron construction, at that time practically undreamt of), flat ceilings, domes, or the simplest forms of vaulting, for covering in their areas. The great recovery—that the Italians made from the remains of Roman architecture was this use of the lintel and the arch in construction, and the use of domes and simple vaulting. A dull man might have recovered its detail, but only the genius of

### Brunelleschi or Peruzzi

could have disentangled these constructional ideas, simple as they seem to us now, and showed how they could be applied easily and naturally to every case, as an elastic method of construction, not merely as an exercise in scholastic canons of design. Given, then, a certain method of construction, in good architecture, the design in all its multifarious parts must follow it. To the arch the Renaissance added the lintel; and it is in the play upon these abstract motives that the real significance of Renaissance architecture lies. Now, the first Englishman who really grasped this fact was

### Inigo Jones;

and it is for this reason that his work is so profoundly interesting to us, and so completely differentiated from the work of his predecessors. At length there had appeared a man who understood architecture as the Italians understood it; who brushed on one side all the detail and ornament which had seemed to the Elizabethan and Jacobean designers the whole essence of the art, and had gone straight for the heart of the matter; realising that, after all, Architecture is simple construction, ennobled and idealised by the working upon it of a powerful brain and highly-trained imagination; and that its strength lies in its own abstract qualities, fine proportion, bold distribution of masses, extreme reticence and simplicity of ornament. He saw—and few had seen it in England since the days of early Gothic—that

### Architecture is not Ornament;

that ornament, indeed, is only one, perhaps a subordinate one, of the many weapons which Architecture has in her armoury. For the first time after a hundred years of blind experiment, this country possessed a real architecture, a complete and flexible language. Instead of a set of quotations from a foreign tongue, it possessed at length an organic style. I need not dwell at any length on the brilliant ability with which Inigo Jones used this style. His exact and fastidious refinement is familiar to all students. Perhaps we are not all so familiar with the masterful freedom of his designs. It has been customary to insist on the greater versatility of Wren as compared with Inigo Jones, and a writer in the "Times" once attempted to make some absurd distinction between Jones and Wren, treating Jones as an Italian, and Wren as the first English architect proper. The writer in the "Times" had the usual knowledge of amateur critics; but those who have studied the work of Inigo Jones and Wren know, in the first place, that

### Wren

could never have started where he did if Inigo Jones had not preceded him; and, in the second place, that it is a complete mistake to identify the work of Jones with that pedantic version of Palladianism which the eighteenth-century architects set up as his particular

manner. That Jones did adopt Palladio's Architecture as the last word of the Italian Renaissance is, of course, undeniable; the point to be realised is that, whatever his imitators may have done, Inigo Jones himself worked with all the freedom of genius, a freedom founded on the most intimate mastery of the actual technique of his art. In this regard I think the distinction between Jones and Wren has been very much exaggerated, and Wren followed the lines laid down by Jones far more closely than has been generally supposed.

### The Decadence began with the Eighteenth Century,

with the men who succeeded Wren. Where Wren designed, these men copied, and they copied the least attractive features of Inigo Jones and Palladio. The pedantic conception of this man of genius which exists in the amateur mind is really derived from Kent's publications and eighteenth century copies of his work. I do not propose to follow further the course of English Renaissance architecture. The eighteenth century architects allowed their art to be collared—if I may be permitted the phrase—first by amateurs and afterwards by men of letters. The strength of the old tradition kept them within some reasonable limit—at least, as late as the early part of this century. But, that

### Romantic Element of Literature,

which had made its first incursion in the days of Horace Walpole, has encroached on Architecture with disastrous rapidity and power in this century; so much so that, a generation back, it almost seemed as if the last trace of our fine traditional Classic would disappear under the preachments of men with no exact knowledge of Architecture, who approached the subject from a standpoint entirely out of relation to the art itself. It would have been a curious result if that great development of Architecture which owed its first origin to scholarship, should have suffered its final extinction at the hands of the literary amateur. To put together the results of this very general survey, I would suggest the following conclusions as

### The Teaching of History:

(1) that the Italian Renaissance itself was the necessary result of far-reaching causes; (2) that our English Renaissance in its kind and degree was a part of this movement, and is not therefore to be dismissed as a mere change of expression in Architecture, but must be accepted as part of an inevitable development, precluding a return to the motives and ideas that lay at the back of mediæval art; (3) that in Architecture the real work of the great Italian masters was to rediscover, almost to recreate, new methods of construction and proportion; (4) that the fact was not realised by the Elizabethan builders, who could not see the wood for the trees, and that it actually took about 100 years of experiment to produce the man who could see beyond this detail, and establish order and logic in the tangled maze of English Architecture; (5) lastly, and as a corollary to this, that the mere fact of his having done so, and the circumstances of the case, have brought about a permanent change in the work and position of the modern architect, to which I will call your attention later. Now, how do we stand at this moment in regard to

### The Theory of Architecture?

I do not mean abstract theory as to its philosophical basis, but our own attitude to the art. What are the sources to which we look for inspiration? What are the ideals at which we aim in actual design? I fear that the answer to this question can hardly be satisfactory. We are, here at the end of the nineteenth century, in a condition of greater uncertainty, and more complete absence of conviction than, I should say, at any previous period of history. You have merely to look back upon the last 100 years. We began the century with the remains of the classical tradition, but Adam had already "improved" it, as he thought: Stuart and Revett had done their work, and the Greek fashion was well in

the ascendant. Then came Pugin, ardent, fanatical, full of energy and narrow ideas, a very iconoclast in regard to the old tradition; and after him

### Ruskin,

who thought he had found the key to Architecture in his personal preferences, and the morality of Exeter Hall. Then came the rush for Gothic, Early English, Early French, Early Italian, with a vehemence that threatened to sweep the board clear of everything but a heterogeneous collection of details from every country. Every man has been for himself, and meantime Architecture has gone to the wall. The serious study of Architecture, not only as an art, but also as an expression of the intelligence which is not arbitrary, but determined by certain inevitable causes, has almost dropped out of sight, and I suppose that in practice the very worst work that has ever been done in England has been done in the last fifty years. I need hardly add that a few men of powerful and original mind have done admirable work, but the average of Architecture has been left untouched, and it is by the average level that the state of Architecture has to be gauged. I do not think that we can look back with pride on the

### Artistic Attainments of the Nineteenth Century,

judged from any standpoint, and it appears likely that we shall enter on the twentieth century without having hit upon any certain way through this quagmire of modern Architecture. It is here that the study of the past must help us. I have elsewhere endeavoured to trace the stages through which the function of the modern architect has developed. The days of the craftsman working independently, yet in unconscious unison, ceased, when the choice of styles arose. He tasted of the tree of knowledge, and henceforth to his knowledge of his craft had to be added the responsibility of conscious judgment, if he was to undertake, I will not say Architecture, as it might be thought to beg the question, but building of any sort at all. Because, in any building nowadays, a man has to use one

### Method of Expression

in preference to another, and implicitly in this there is raised the whole question of selection. Now this responsibility proved too much for the simple craftsman, as you may see from the blunders in design which abound in more ambitious Jacobean works; and it was only a question of time how soon there should arise the man who had sufficient training and intellectual capacity to enable him to discriminate between good and bad, to enable him to grasp the logical coherence in expression, which is an essential element of Architecture. As soon as such a man arose, the matter was settled for good or bad. The architect ceased to be a craftsman in the technical sense, and what might be lost in

### Craftsmanship

was assuredly gained in Architecture. I think, therefore, that this critical function of an architect, this detachment from the actual details of craftsmanship, which chafes the enthusiasm of some of by no means the least gifted of our younger men, is of the very essence of his work. The more of craftsmanship he has the better; but a man may be a very good architect without being a very good craftsman—I mean a good craftsman in the sense of being able to carve his own woodwork and model his own ceilings. His craftsmanship must be of a wider range. It must embrace full knowledge of the past; it must rest on a constant habit of analysis of the best methods of expression in building, and a keenly critical insight into the abstract qualities of Architecture, mass, balance, rhythm, and proportion. An architect, to my mind, should be like a fastidious man of letters, he should not be content to express his purpose anyhow, he should be anxious to find the exact inevitable phrase. It is in this sense, I think, that an architect should be an artist of the highest order, and this is the position that has, in fact, been forced upon him since the days of the Renaissance.





COTTAGE HOMES AT MIDDLEWOOD. FIG. 6. FRONT ELEVATION OF RECEIVING AND SPARE HOMES. MESSRS. BUTTERWORTH AND DUNCAN, ARCHITECTS.

Perhaps this reflection may be some consolation to those who would reluctantly abandon the idea that in craftsmanship lies the future of Architecture. Nor, again, is this ideal less exacting than the other. To attain to this faculty of reasonable judgment it is clear that a man must possess knowledge of what has actually been done in Architecture—the more the better, provided he is not over-burdened by it; and this knowledge is not mere student's learning, but means a practical knowledge of buildings, gained by careful analysis and measurements, and by exact observations of materials and local circumstances. A lifetime of constant study is not too much for such a task. I would suggest to you, therefore, to those of you, that is, who are now beginning your career, but there is no shortcut to Architecture through pattern books, or even through the pleasant paths of detail craftsmanship; but that, nowadays at any rate, you must have knowledge, and that now, as always in the history of Architecture, you must seek that knowledge, not only in books, but also in the builder's yard and on the scaffolding of buildings. I have still one more point to bring before you. Perhaps in this paper I may seem to you to have insisted too much on knowledge, too little on imagination, and this criticism has also been made on some remarks of mine elsewhere. In the first place, I would point out that we seem to be face to face with some dangerous developments of originality, or rather eccentricity. To judge by the majority of our buildings, it appears to be thought that "knowledge hampers imagination," as it was put by the eminent Capability Brown. Certainly the results are a very nightmare of Architecture. Now there is only one antidote to this sort of originality, and it is knowledge. I fancy that some of the more accomplished of our original designers would be rather surprised to find that the flattest of their ogees, the boldest of their amazing proportions, have been anticipated, not only in Italy, but even in England. Even a cursory knowledge of the work of such a man as Baldassare Peruzzi would show them that profound knowledge is not incompatible with the most complete freedom in design; and, further, that the most daring imagination can co-exist with the most trivial detail. You may recollect the indignation of the old Sieur de Chambray at the pretensions of the men of his time, who thought that by turning a capital upside down, or something of the sort, they had invented a new Architecture, "as if the Pantheon" (I quote the Sieur de Chambray), "that same stupendous and incomparable structure, were not the invention of the architect who built it, because he has vary'd nothing from the Corinthian ordnance, of which it is entirely composed." In the second place, and this is the gist of all that I have said, this knowledge is not an end, but a means. For an architect does not study in order to reproduce what other men have said once and for all, but to perfect his own mastery of expression; and just as a poet does not invent a jargon of his own, or write in the language of Chaucer, but takes the current language of his time, and compels it to his pur-

pose, so an architect should not waste his time in a vain ambition for a new style, or a futile copy of an old one, but should master the best in all the Architecture of his country, and thereby find ample language for his own individuality. It is not styles, therefore, that we are concerned with, but style, that indefinite quality of all good architecture, whether Greek or Roman, Gothic or Renaissance; indefinable, and ever varying,

because it varies with the individuality of the artist, because it depends on the faculty that the man possesses of giving the simplest and yet the most complete expression of all his purpose. It is here that knowledge must come in as the groundwork of good Architecture. We want to know, as part of our training in our art, how other men in the past have solved the difficulties that confront us now; and it is only by this long laborious study that we can learn to discriminate between good and bad, and to free our own method of expression from what is trivial and irrelevant. It is this way, I think, and not along the pleasant paths of the amateur, that there lies the best chance of the architecture of the future.

(Our report of the discussion which followed the reading of Mr. Blomfield's paper is held over till next week.)

**The Amalgamated Society of Engineers.**—Speaking at the first annual dinner of the Joint Trades Union, at Stratford New Town, Bro. A. W. Golightly, A.S.E., said that the struggle in the engineering trade had been settled just fourteen months, and in that short time the Engineers' Society had paid off all its debts incurred during the lock-out, amounting to over £47,000, and the issue of their next balance sheet would show a membership of 84,000, and a balance in hand of over £207,000.

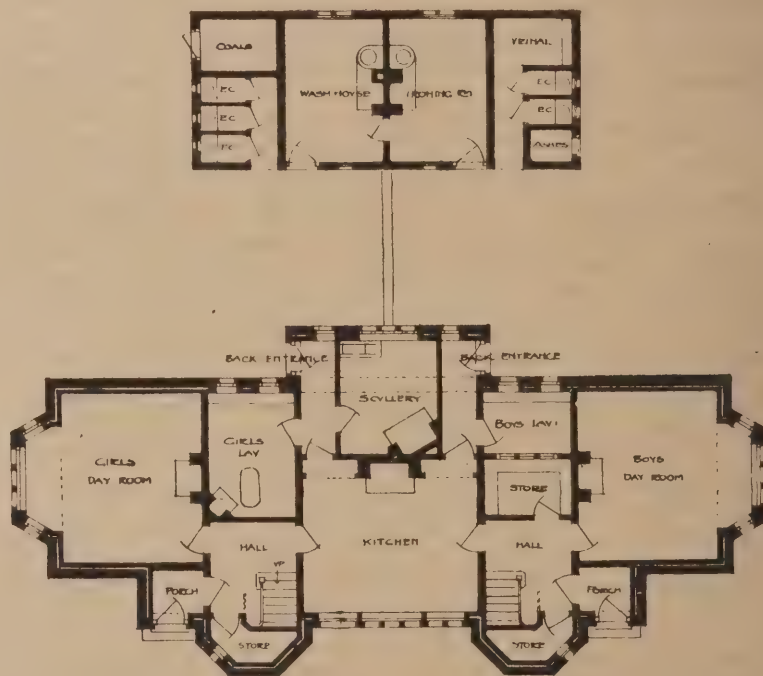


FIG. 4. GROUND PLAN.

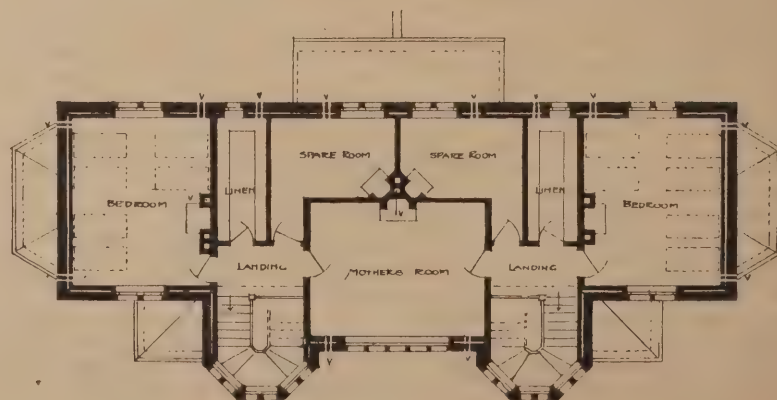


FIG. 5. FIRST FLOOR PLAN.

COTTAGE HOMES AT MIDDLEWOOD. RECEIVING AND SPARE HOMES. MESSRS. BUTTERWORTH AND DUNCAN, ARCHITECTS.



# COTTAGE HOMES AT MIDDLE- WOOD, NEAR ROCHDALE.

BY ESTHER WOOD AND G. LL. MORRIS.

(Continued from page 87.)

THE object of the "receiving home" to the left of the superintendent's house (Figs. 4, 5, and 6), is to keep all new-comers in quarantine for a certain number of days, for fear of any infectious illness, however slight, being thus communicated to the whole colony, and to judge also of the suitability of the children for certain homes. Plans have already been drawn up for a separate infirmary (Fig. 7)—a long, narrow building of the bungalow type, with two groups of wards isolated by corridors, and a central block for doctors' and nurses' apartments. This, however, is still in abeyance, and in the meantime the two spare homes, built on the same plan as Figs. 4 and 5, are well equipped for cases of illness, and could

ends of the block, each holding seven beds, while the central bedrooms contain five. Between these are the mother's room, and a spare room for use as desired. We might strongly recommend that this, if possible, should be accepted as a clothes room, lined with drawers or cupboards for things not in daily wear, and having screens in the centre so arranged as to dry and ventilate garments frequently worn. It is surprising to find in certain homes, under other Boards of Guardians, children being taught the most insanitary habit of folding up their clothes at night and stowing them in a basket under the bed! Their matron or managers seem to have sacrificed all considerations of hygiene to the fetish of tidiness—an idol to which the health of households has too often been offered up. Garments that have been worn all day, especially by children bathed but once a week (a restriction still in force in some such homes)—should surely be spread out to air, not by the bedside, but in another room; or at least near to an open door or window.

## MOSAICS.

BY H. J. POWELL.

A LECTURE on "Mosaics," with lantern illustrations, was given at the Central School of Arts and Crafts last Friday evening by Mr. H. J. Powell.

The lecturer said that artistic crafts are always to be found where colour is. It often happened that the description of the technique for one craft suggested a new application for another, and he hoped that a description of the steps that have been taken in endeavouring to re-introduce mosaic into England might be of interest and of use to the students of the school. As far back as early in the sixties experiments were being made in England; but it was in 1890 that the great impetus to the re-introduction of mosaics was given, when the Dean and Chapter of St. Paul's determined to hand over the decoration of the Cathedral to Sir William Richmond. Sir William resolved that it should be done

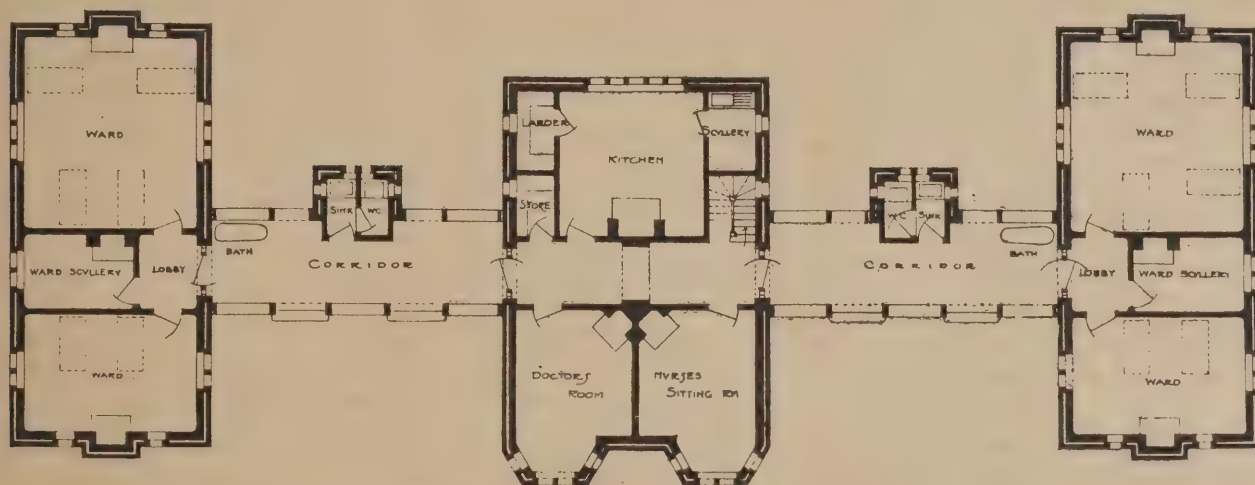


FIG. 7. PLAN OF FUTURE HOSPITAL. MESSRS. BUTTERWORTH AND DUNCAN, ARCHITECTS.

easily be used in the event of infection. In the centre of the receiving home is a large kitchen (with scullery behind it), in which the children meet for meals, while the house to right and left of this is divided into "girls' side" and "boys' side," each with its own "store," and its own playroom. In the centre of the first floor, over the kitchen, is the mother's room, communicating both with the boys' and girls' side of the building; and at each end is a dormitory for six beds. There are also two spare bedrooms for elder children or invalids, and two large linen cupboards. This building, with the exception of the Boys' Home, is the best planned of any; the idea of the large central kitchen on the ground floor, common to both boys and girls at meal times, suggests an arrangement full of pleasant possibilities, which Poor Law Guardians might do well to consider carefully in future schemes. In the description of the Boys' Home we refer to this more in detail.

We come next to the several pairs of cottages in which—pending the progress of co-education in this country—the boys and girls are kept more rigidly apart. The centre of the ground floor in each pair of boys' cottages (Figs. 8, 9, 10) is occupied by the respective playrooms, which are divided from each other by the party wall. Here, surely, was an excellent opportunity to throw the adjoining rooms into one large hall, and by housing boys in one cottage and girls in the next, to allow them at least to spend their recreation hours together. Perhaps even yet this development may occur in the colony without the disasters of a social revolution, and we believe that the Rochdale Guardians are not intending to separate the sexes under eight years of age.

Above the playrooms are two bedrooms. A door in the middle of the party wall affords passage in case of fire or other emergency from one side of the building to the other. Two larger bedrooms occupy the respective

It is satisfactory to find bathrooms in the cottages. One would think that in all homes for children these would be a *sine qua non*, but it has been urged by other Guardians making similar experiments that the standard of comfort should not exceed that of a laborer's cottage.

(To be concluded.)

**A Church Tower to be Demolished.**—The tower and buttresses of St. Matthew's Church, Douglas, Isle of Man, are to be demolished, and the space used for market purposes.

**Douglas Water Supply.**—The Corporation of Douglas obtained leave on Wednesday last to introduce a Bill into the Manx Legislature authorising them to construct a new reservoir in West Baldwin at a cost of £49,000.

**The restoration of Wellington Parish Church** is now nearly complete. Marble-cased columns have been added to the building, and the heating and ventilating arrangements have been improved. Mr. C. R. Dalgleish, of Wellington and Shrewsbury, is the architect.

**A Gladstone Memorial for Liverpool.**—At a meeting held in the Liverpool Town Hall on Monday last week for the purpose of promoting a memorial to Mr. Gladstone, a fund was started which yielded the substantial sum of £2200, including one donation of £150, and sixteen of £100 each.

**Condition of the Southend Pier Tramway.**—At a recent meeting of the Town Council the mayor stated that if a Board of Trade inspector came down and inspected the tramway he would condemn it at once. The Council, therefore, instructed the borough surveyor to do the necessary repairs (which are estimated to cost £600), with the assistance of the electrical engineer.

by English craftsmen and with English materials; and the work he was doing was a great one, whatever critics might say to the contrary.

Mr. Powell told his audience that he wished to put his position clearly before them; it had been defined by an eminent authority as that of colour-maker, and it was as a colour-maker that he wished to speak to them. It was not his intention to try to deliver an instructive lecture, but merely to describe experiments that had been made, and the lessons that had been learned from them. His intention was to talk about the actual material, how it was prepared, something about the cement used, and something about the lessons that had been learned from the work.

The first step taken was to obtain fragments of the work of the old mosaicists. These having been got and examined, it was found that except in very early work, the material used was glass in one form or another; but where special effects were desired, bone, ivory, and mother of pearl, had been used. The general material, however, was glass. The reason marble had been abandoned for glass was pretty obvious, because from the glass-pot much brighter colours can be obtained than from marble. Chemical analysis showed that this is true. The glass was made of sand, soda, and lime. Chemical analysis also showed that the capacity of the colouring of the glass, except in the case of red, where it is due to copper and excess of iron, is due to a large dose of white oxide of tin. Oxide of tin, when mixed with a transparent water colour, had a chalky effect, and with a view to modifying this effect, he introduced instead powdered felspar.

The speaker then went on to state that from a copper colour you can get red, blue, or green. To obtain ordinary dark red or purple blue, cobalt should be used; and to get a violet, manganese. An excess of violet, he said, gave a good black. A yellowy green was





COTTAGE HOMES AT MIDDLEWOOD. FIG. 10. FRONT ELEVATION OF BOYS' HOMES. MESSRS. BUTTERWORTH AND DUNCAN, ARCHITECTS.

produced by using oxide of chrome. By mixing together suitable proportions of oxides, a very great range of colours was obtainable. In the cooling process very many colours ranged themselves into strata. Fine effects were obtained by the old mosaicists by a judicious use of untarnished streaks of gold in their work. The method by which they manufactured their gold mosaic was to first of all blow a thin film of glass, then to spread it on a thin sheet of gold leaf heated, and then drop on the surface some opaque glass, which was pressed so that the whole formed an absolutely solid mass. If one of these gold cakes were taken and heated, the heat would break up the gold leaf and show the colour of the base glass through, so that the colour of the base is shown modifying the colour of the gold, and by doing this the shade of the gold can be changed to almost any extent. One of the most striking features in the work of the old mosaicists was the very limited number of colours they used. When Sir William Richmond started his mosaics he used a good many colours, in fact, about one hundred; but he soon discovered that there was no need to use such a number if a smaller variety were put where they ought to be placed—above the eye. The mosaicists of Rome boast that they use something between a thousand and two thousand colours, but this is rendered necessary by their peculiar system of mosaic. They profess to copy oil paintings, but their finished work is very unsatisfactory. The whole method is a most extravagant way of using material and labour.

There are many ways, said Mr. Powell, of putting mosaics together. The old way was to spread the cement on the wall, cut out the designs, and then place the pieces in. But as the designs became more elaborate, the need of supervision increased, and it became necessary to introduce other systems.

In 1890, Sir William Richmond decided to go back to the original method. His object was, Mr. Powell believed, not to produce educational pictures, but to add colour and decoration to the part of the structure where they were most needed. In order to get the greatest value he could from his material, he determined to use for his surface the ordinary broken untouched fracture of the glass, and he also resolved to place his tesserae in the most favourable position he could with regard to light; and so as to get the full effect from contrasting colours, as well as the full decorative effect from the joints, he (Sir William) came to the conclusion that it was absolutely necessary that the tesserae should be placed on the wall in the chancel. In this work each workman had a part traced from the original cartoon, the mere outlines of the mosaic being pricked through the tracing paper. The process was very simple and quick, and the workmen had now gained considerable experience and knew exactly where to place their tesserae in order to obtain the best result from their material. The speaker was of the opinion that if mosaic is ever adopted in England generally as a practical method of permanent decoration, full credit ought to be given to Sir William Richmond's influence. Sir William, he said, had had the courage to discard the system of studio mosaic, and to substitute a practical system.

Cement was made by the old professors on the plan of the Roman pavement cementers, who used brick, marble, lime, and water. This was always put up in two layers, the first coarse, and the second finer. It set very quickly and hard, but had two faults—it was very heavy and involved a second working. In the sixteenth century the idea was started to substitute raw oil in the place of water. Cement made with raw oil does not set quite so fast and can be used in a single layer. Oil cement is used in St. Paul's.

In mosaics great consideration must be given to the joints. If the colour of the joints was not allowed for it would eventually affect the whole tone of the mosaics. It had been alleged that the so-called degradation of mosaics was due to the introduction of oil into cement, but he thought that this was a wrong idea. The idea was that by using an oil cement there was left some chance for alteration, as the cement did not set so fast; that it took a certain amount of responsibility off the craftsman, and involved a loss of spontaneity in the work, he did not believe. The real cause of degradation, he thought, was due to persons designing mosaics who did not understand the material they were designing for. When fresco work was introduced rivals sprang up against the old mosaicists in the shape of such artists as Raphael, who by degrees ousted the old

mosaicists, and after a time these craftsmen were so overwhelmed by the fame of their rivals that they gave up the attempt of designing altogether, and accepted the rôle of executing the designs of the artists. The speaker thought that this was much the cause of the fall of mosaics. The artists did not like their pictures placed high up, but wanted them brought down to the eye; this was done, and affected the whole system. He felt, he said, rather nervous in talking about designing, as he did not profess to be a designer; but the way to learn about designing was, in his opinion, to get a thorough knowledge of the successes and failures of the old masters, and he thought the first thing they would learn, would be that their work must be flat. He thought that a restricted palette made for harmony of colour. The most difficult colour to deal with was gold. The old mosaicists, going back to the fourth and fifth centuries, used it with great judgment, mainly for the trimming of drapery, lines in clouds, in water, and in foliage, and the effects they produced were exceedingly beautiful. When they used gold in a mass they were careful to break it up.

In conclusion, Mr. Powell said that he would not advocate the teaching of mosaic at any of the technical schools at present, or at any rate, not until the architects have made up their minds how they are going to use it.

**The Institution of Civil Engineers** held its annual dinner in the old hall of Lincoln's Inn on Wednesday evening last. Mr. W. A. Preece presided over the function.

**Engineering Works at Kirkcaldy.**—At a meeting of the Town Council last Monday week it was reported that the North British Railway Company had withdrawn their opposition to the Electric Lighting and Tramway Bill now before Parliament. The Provost also intimated that when the Council's deputation are in London in connection with the Bill Lord Morley will be asked whether or not the Town Council, in conjunction with the North British Railway, can adopt a scheme for assessing the public to the extent of 6d. in the £1 for the new harbour.

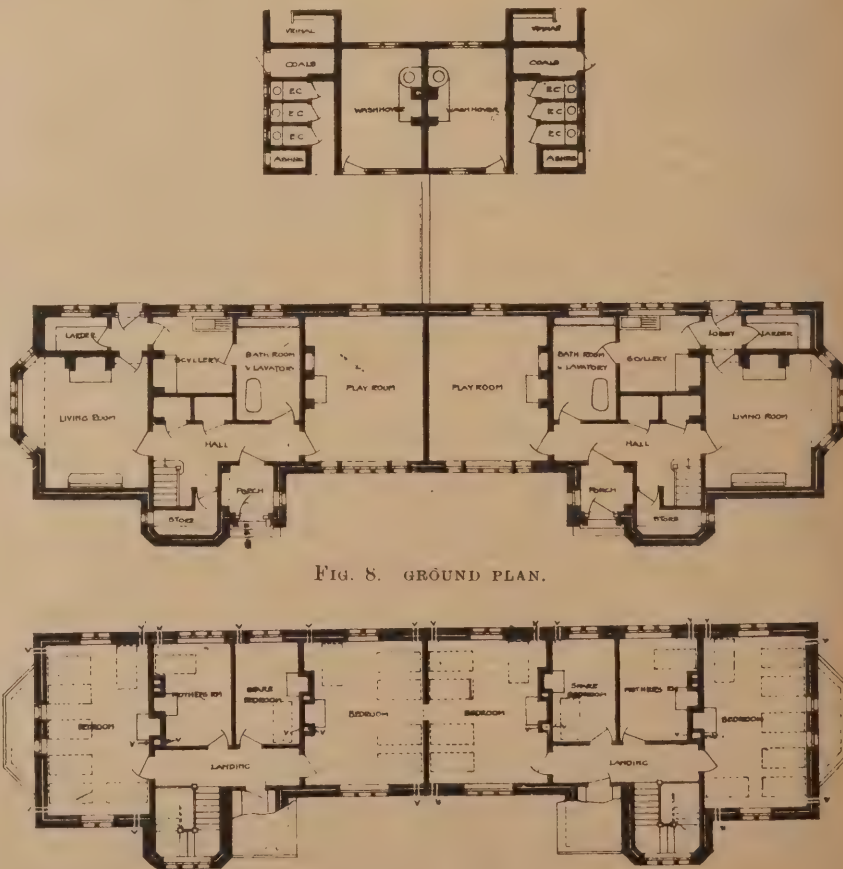


FIG. 8. GROUND PLAN.

FIG. 9. FIRST FLOOR PLAN.

COTTAGE HOMES AT MIDDLEWOOD: BOYS' HOMES. MESSRS. BUTTERWORTH AND DUNCAN, ARCHITECTS.



LIBRARY  
OF THE  
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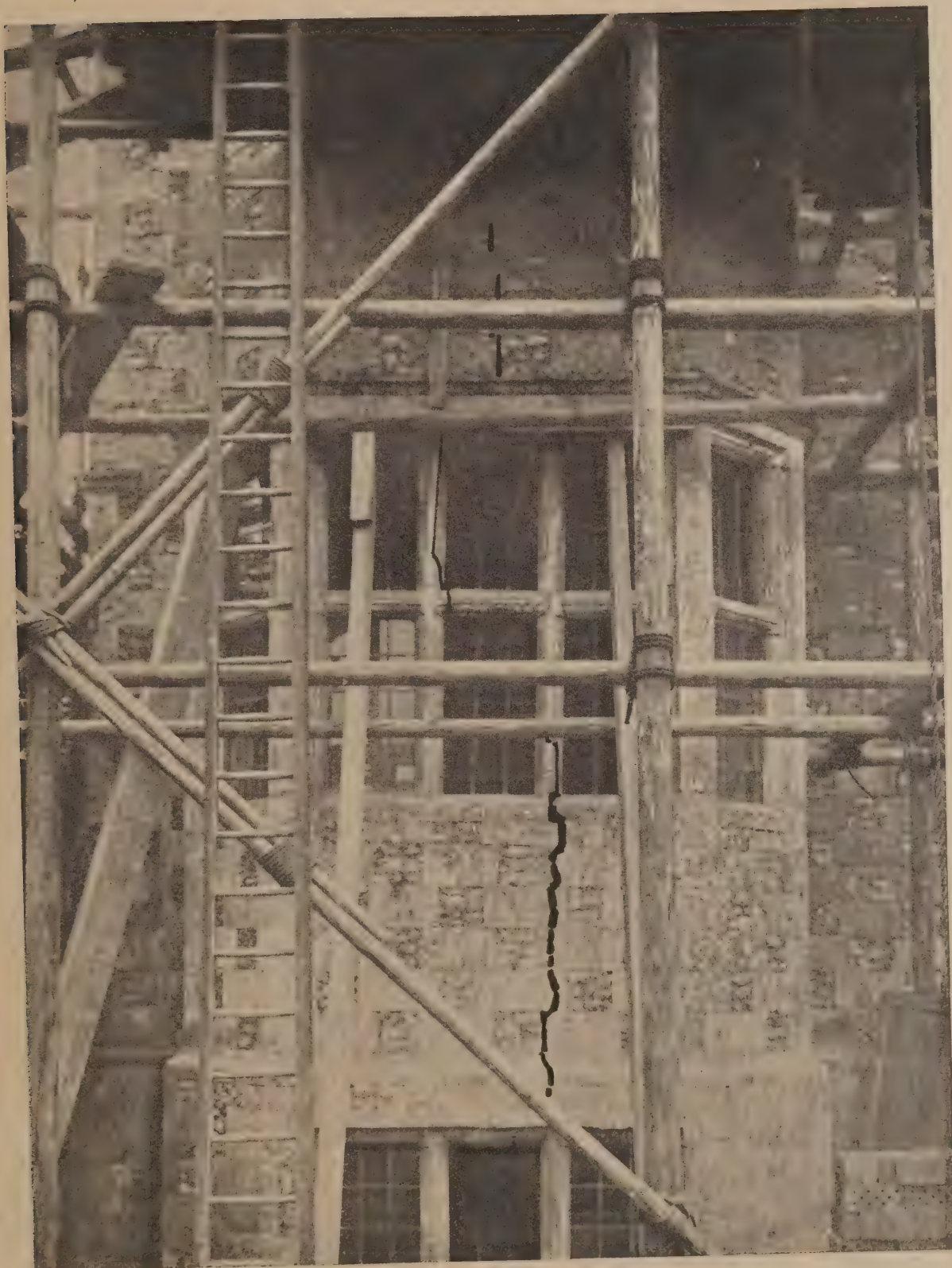




PLANT STUDY. FROM THE ORIGINAL WATER COLOUR DRAWING BY JOHN SEDDING.

(By permission of the Editor of the "Architectural Review;" see an important article on Drawing, by H. Wilson, in the March number.)





LAKE HOUSE: SHOWING REPAIRED BAY WINDOW.

(By permission of the Editor of the "Architectural Review;" see an important article on "The Sustentation and Repair of Lake House, near Aymesbury," by G. Ll. Morris, in the March number.)



OF THE  
UNIVERSITY OF ALBANY



## R. I. B. A.

## GOTHIC ARCHITECTURE.

By JOHN BILSON, F.S.A., F.R.I.B.A.

THE ordinary meeting of the Royal Institute of British Architects took place on Monday night, with Professor G. Aitchison (president) in the chair. The minutes having been read and confirmed, the Secretary announced the decease of Frederick Mew (Associate, elected 1859), and William Reddall (Associate, elected 1874). The President then formally admitted members attending for the first time since their election.

Mr. John Bilson then read his paper on "Beginnings of Gothic Architecture: Norman Vaulting in England."

By way of preface to his subject, Mr. Bilson had contributed a paper to the *Institute Journal*, reviewing recent investigations of French archæologists into the origin and development of Gothic Architecture. The following were the principal works referred to: *L'Architecture religieuse dans l'ancien diocèse de Soissons au XI<sup>e</sup> et au XII<sup>e</sup> siècle*, by E. Lefèvre-Pontalis; *L'Art Gothique*, by Louis Goussier; *La Transition*, by Anthyme Saint-Paul, in the *Revue de l'Art chrétien*; *Monuments religieux de l'Architecture romane et de transition dans la région picarde*, by C. Enlart, and *Die Anfänge des gotischen Baustils, zur kritik des gegenwärtigen Standes der Frage*, by G. Dehio, in the *Repertorium für Kunstwissenschaft*. The author commended these researches to the attention of English students still prone to accept as final the judgments of earlier writers, such as Viollet-le-Duc, some of which have been found untenable in the light of more

## Recent Inquiry.

Mr. Bilson stated that in his prefatory paper he had made free use of Herr Dehio's masterly treatise, the general conclusions of which must in the main eventually win acceptance, even among the younger French school of inquirers. In opening his paper on "Norman Vaulting in England," the author touched upon the development of Norman Romanesque, resulting from the revival of architecture in Normandy early in the eleventh century, and noted some of its most striking characteristics. Available literary evidence tends to show that some of the Norman methods were already in use in England before the Conquest, but we are not justified in believing that the design of these English buildings was marked by the logical precision so characteristic of Norman work, or that the English had taken any step in the direction of vaulting over their churches. In studying the development of vaulting, as illustrated by English examples between the Norman Conquest and the middle of the twelfth century, the author dealt first with the vaults of the lower parts of churches, such as aisles and crypts, citing existing examples of the various forms described.

## The Groined Vault

in its simplest form results from the intersection of two semi-cylindrical vaults at right angles to one another—a survival, in fact, of the Roman groined vault. Generally, however, these groined vaults are banded by semi-circular transverse arches or "doubleaux," usually of simple square section, and forming a kind of permanent centring. The adoption of these doubleaux, however, involved considerable inconvenience in the construction of the springing of the groin. In the Roman groined vault and its imitations the groin springs from the external angle of the pier or pilaster. In many of the Early Norman vaults the groin springs either from the internal angle formed by the junction of the transverse arch at its springing with the wall-face, or from the face of the wall or arch close to the angle. As the vaults were constructed of rubble masonry with thick joints, and covered with plaster, this method of springing the groin was obviously defective as a matter of construction. Consequently we find the difficulty met at a very early date by a further development in

the membering of the supporting pier; the pilaster which carries the transverse arch is flanked on each side by a secondary pilaster which affords an independent support for the groin. In some crypts where the vaulting is supported by single cylindrical shafts, the springing of the vault is sub-divided in a similar manner, so as to give a separate projection for the springing of the groin. A further advance consisted in the substitution of a shaft for the square pilaster which supported the groin. At Saint Etienne, Caen, and at Winchester Cathedral, an improvement is found in the construction of certain of the vaults. The haunches of the vault, for a short distance above the springing, are constructed of ashlar, above which the vault is of rubble, plastered. Having described the modification the simple groined vault underwent when necessitated by the oblong or irregular plan of the bays to be vaulted, the author passed to his main subject, the

## Ribbed Vault.

Wherever it originated, or whatever the circumstances under which it was evolved, the advantage gained by the introduction of the rib was obvious. It afforded a permanent centring for the groin, the weakness of which in vaults over wide spans must always have rendered them liable to failure. It completed the membering of the vault, which had commenced when the transverse arch was added to the Roman groined vault. The new expedient was readily adopted and rapidly developed by the Normans in England as well as in Normandy. The Cathedral Church of Durham is the most complete early example of the adoption of the ribbed vault in England. Contemporary chroniclers record that every part of the church was covered with ribbed vaulting between 1093 and 1133. The plan of the choir and east side of the transepts shows that it was the intention from the first to cover both the aisles and the main spans with the vaults which were actually constructed. The aisle vaults of choir and transepts (the various features of which were described in detail by the author), constructed under Bishop William between 1093 and 1096, are clearly part of the original work; masonry and mouldings correspond in character with those of the choir arcades, and, for constructional reasons, the aisle vaults must, as usual, have been erected along with the main walls.

## The Vaults of the Nave Aisles,

the characteristics of which were next discussed, are the work of Bishop Ralph Flambard (1099-1128), and, as he completed the nave as far as the high vault, the aisle vaults may safely be attributed to the first decade of the twelfth century. They correspond in character with the aisle vaults of choir and transepts, except in a few minor points. The next dated example of ribbed vaulting is to be found in the reconstructed parts of the transepts of Winchester Cathedral. The original work in these transepts belongs to the church which Bishop Walklin commenced in 1079, and which the monks entered in 1093. The works of reconstruction necessitated by the fall of the central tower in 1107, are easily distinguishable from the original work by the different thickness of the masonry joints. The date of these ribbed vaults may be put within two or three years after the tower fell. Peterborough Cathedral presents examples of ribbed vaults, the date of which is proved by documentary evidence. The earlier church was destroyed by fire in 1116, and the present building was commenced in 1117 or 1118. In 1140, or 1143, the monks entered the new church. The parts then completed include the choir and east side of the transepts (except, perhaps, the clerestories). The aisles of choir, and transepts throughout, are covered with ribbed vaults, the distinctive features of which the author described. The paper then went on to discuss M. Félix de Verneilh's conclusions with regard to

## The Peterborough Vaults,

on which M. Lefèvre Pontalis based his statement that the ribs were added afterwards in the second half of the twelfth century. M. de

Verneilh's theory was that the supporting shafts were designed to receive the projecting groins of unribbed vaults, and that the actual ribs were added afterwards. In the recent taking down and rebuilding of the central tower, however, no evidence whatever was found to support this theory. It is clear that these Peterborough vaults are original from the fact that they do not stand alone, but are analogous in their method and construction to a large number of vaults which cannot all be the result of such an alteration as M. de Verneilh suggested. The author then passed to the consideration of examples of similar ribbed vaults to which, in default of documentary evidence, approximate dates only can be assigned from the character of the work. The following examples were discussed: The vaulting over the north aisle of the nave of Gloucester Cathedral, which may be safely assigned to the first twenty years of the twelfth century; Avening Church, Gloucestershire, ribbed vaults, c. 1120-1130; Southwell Minster, the aisles of the nave of which are covered with ribbed vaults, c. 1120; the Priory Church of Lindisfarne, built by Edward, who died probably near the end of Ralph Flambard's Episcopate (1128)—the church throughout was covered with ribbed vaults, and its design is evidently inspired by Durham; the nave of the abbey church of Dunfermline, also inspired by Durham, probably erected soon after the accession of David I. (1124); Selby Abbey Church, whose eastern bays of the nave also afford marked indications of Durham influence; Romsey Abbey Church, vaults of choir aisles, and the church at Lessay, Normandy—examples interesting as showing how the idea of the ribbed vault was introduced, during the course of construction, in works originally planned only for unribbed vaults; the two churches at Devizes, Wiltshire, affording examples of aisleless chancels covered with ribbed vaults, and to be attributed with some probability to the architectural influence of Bishop Roger, of Salisbury, and dated approximately c. 1125-1130, St. John's being slightly earlier than St. Mary's. The difficulties which confronted the builders of these early ribbed vaults, so long as they employed only semi-circular, or

## Semi-elliptical Curves

for the ribs, were entirely surmounted by the adoption of the pointed arch for the doubleaux. The nave aisles of Malmesbury Abbey Church have been frequently quoted as the earliest example in England of this new method of construction, and have been attributed to Bishop Roger of Salisbury; it is scarcely probable, however, that the rebuilding of the church was commenced before the Bishop's death in 1139; it must nevertheless have closely followed that event, and the existing nave cannot be assigned to a later date than the middle of the twelfth century. There is no evidence whatever to support Mr. C. H. Moore's assertion that the vaulting is an imitation of French work. The style of Malmesbury is purely Anglo-Norman, and shows no trace of the influence of such French work as the chapel of Bellefontaine and Saint Denis. At the same time the Malmesbury aisle vaults bring us to the threshold of the complete Gothic vaulting system, and almost to the time when French influence undoubtedly began to affect English work.

(To be concluded.)

**The Design for New Law Courts, Cardiff**, which was reproduced in one of our inset plates on March 15th, was made by Messrs. C. E. Mallows and Grocock, in conjunction with Messrs. Brewill and Bailly. The name of the former firm was accidentally omitted from the inscription printed under the illustration.

**Heating and Ventilation for Hospitals.**—The additions to the Fever Hospital, Bolton, are being warmed and ventilated by means by Shorland's patent Manchester Stoves with descending Smoke Flues, Shorland's patent Exhaust Roof Ventilators and Inlet Panels.



## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### MODEL ANSWERS TO BUILDING CONSTRUCTION QUESTIONS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Could you kindly inform me of any book containing the past science and art exam. questions (elem.) on building construction, worked out, stating price and publisher.

"ELEMENTARY."

We would suggest that application be made to Professor H. Adams, 60, Queen Victoria Street, E.C., who prepared and published worked-out solutions to the questions set on building construction at the Science and Art Department Examinations for many years, and, we believe, does so still.

### COLONIAL SURVEYORSHIPS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—I should be much obliged if you would kindly inform me where I can obtain particulars of the Civil Service Examinations for Colonial surveyorships, also salary, &c.

"ENQUIRER."

Civil Service Examinations are not held for Colonial Surveyorships, which are only to be obtained locally, but occur with tolerable frequency for the following appointments, all of which carry with them the possibility of service at foreign stations: Assistant surveyors, Royal Engineer Civil Staff; assistant surveyors, H.M. Office of Works; assistant surveyor, Admiralty; assistant civil engineers, Admiralty. The rate of pay is in all cases good, with fairly regular increase and a pension on retirement; but only well prepared candidates can hope to succeed as the competition is severe. Full particulars are to be obtained *gratis* from the Secretary, Civil Service Commissioners, Cannon Row, S.W.

### WAR OFFICE SURVEYORSHIPS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Could you inform me as to where I should apply for past examination papers set for the assistant surveyors to the War Office? Also, the conditions and rules laid down governing the election of candidates to these positions?—Yours truly,

Dublin.

J. J. McA.

Examination papers set in October, 1898, for Assistant Surveyor R.E.C.S., can be had from Eyre and Spottiswoode; John Menzies and Co., 12, Hanover Street, Edinburgh, and 90, West Nile Street, Glasgow; or, Hodges, Figgis and Co., Ltd., 104, Grafton Street, Dublin; price one shilling. Those set in November, 1896, are likewise to be had at the same price. Particulars of examination can be obtained from the Secretary, Civil Service Commission, Cannon Row, S.W. The conditions and the exam. syllabus were different in 1898, from 1896, and in all probability they will be again changed before the next exam., so I am afraid you will not profit much by studying the official publications. The whole question of the status, duties, and appointment of the surveyors is being considered by a War Office Committee, and it is impossible to say what may happen.

### SEWAGE FROM INFECTIOUS DISEASES HOSPITAL.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—How many satisfactory ways are there of disposing of the sewage matters from an Infectious Diseases Hospital which is erected on a level piece of ground in the country where there is no public or other sewer, but there is a stream or river about 20ft. wide about half a mile distant? Where can I obtain full particulars of all the latest

details of construction and fittings in connection therewith? The name of such a hospital which you think a good and complete example would be esteemed.

"STUDIOUS."

Sewage from infectious diseases hospitals is capable of communicating infection to any night-soil with which it may be mixed in privies, drains, or cesspools, and after disinfection it should be disposed of without delay, and under the safest conditions possible. A Local Government Board circular, in dealing with this question, says that, "after having been treated with acidified mercuric chloride in ample quantity, the excreta may safely be put into an ordinary closet, but special care as to the flushing of drains and special frequency in the removal of receptacles must be insisted upon." This advice seems to require reconsideration, inasmuch as Koch has shown that mercuric chloride, unless in strong solutions, may be inefficient. Excreta passing into closets and thence to streams may, even after so-called disinfection, spread disease through an entire district. The only safe method of disinfection is to be found in the employment of heat. In order to apply this agency, the infectious matter must be heated for several hours in steam ovens, or steam must be passed through it, the gases being led into a fire and burnt. A small quantity of phenol or mercuric chloride in solution should be added. Another method for the sterilisation of such matter by heat consists in the separation and destruction of solid matter in an incinerator. Liquid effluent may be treated chemically, and finally filtered through "Polarite," which is an agent having remarkable power of oxidation and purification. "Polarite" is produced by the International Purification Syndicate, Westminster, from whom full particulars as to its use may be obtained. It is fortunate that the stream mentioned by our correspondent is at some distance from the hospital, but unless great care be exercised it may become a means of distributing disease amongst those who dwell on its banks.

W. N. T.

### COLD STORAGE.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Would you kindly inform me, through your Enquiry Column, the best way to construct a small cold storage, about 5ft. by 3ft. and 8ft. high? 1. What is the most suitable non-conductor, and the minimum thickness of outside wall? 2. The best position for the ice; and should it be separated from chamber by a conductor, or be in direct contact with air? 3. Method of ventilation?—Yours truly,

J. A. S.

Ipswich.

A cold-storage chamber may be constructed by covering a light stud framing on both sides with matched boarding, filling in the intervening space with sawdust, or, better still, silicate cotton, which is one of the best non-conductors of heat. The minimum thickness of non-conducting material is an unknown quantity. What is required in such a structure as that under consideration is that the internal temperature shall be affected as little as possible by external influences; and this is better secured with a thick, than by a thin packing. A thick coat means less ice required to maintain a given temperature in the cold chamber, and *vice versa*. Ice is usually placed overhead, and rests on wood bearers in a zinc tank, which forms the ceiling, a pipe being connected thereto to carry off the water as the ice melts. But the ice may be, and sometimes is, used upon the floor of the cold chamber, and such an arrangement has been successful with the chamber walls formed of a single thickness of  $\frac{3}{4}$  in. boards. Ventilation implies a constant movement of air, and this it is desirable to avoid as much as possible; and as, despite all precautions to the contrary—unless air-tight joints are provided—air currents will be set up in greater or lesser degree, and as, also, in consequence of frequent reference to the articles contained in the chamber, the air will be constantly changed, no special arrangements for ventilation need be made except in special circumstances.

H. E.

## Correspondence.

### STRAINS IN BEAMS.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—It is a great pity that the author of this article should have fallen into so elementary an error as to confound "stress" and "bending moment;" it is greater pity that he should have tried to sustain his position in the face of Mr. Grenville's clear explanation (on p. 72, No. CCXIII.) of the point at issue; and it is a greater pity still that in doing so he should have introduced another term, "strain," having again another meaning, into his attempted defence, adding still further to the confusion. Apparently, he is ignorant of the very meaning of the terms he uses, clear definitions of which are to be found in the Glossary of "Specification," and is ready to repeat the blunders of previous writers without caring to investigate them—possibly without knowing his subject well enough to enable him to do so.—Yours faithfully,

G. A. T. MIDDLETON.

### MOISTURE DURING FROST.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—The question as to whether two dissimilar articles—the one a good conductor and the other a bad conductor—exposed to the same degree of heat or cold, will vary in temperature is one upon which much difference of opinion exists. That two such substances continuously exposed to the self-same influence will eventually attain the same temperature cannot be denied; but, in all ordinary fluctuations of temperature, the better conductor of the two will be the quicker to correspond to any change either of heat or cold; hence, I maintain that it by no means follows as a matter of course that the proposition put forward by me on p. 50 (March 1st) merits the contradiction of "Engineer" on p. 92 (March 15th). If "Engineer's" statement is correct, why is it that a thermometer placed upon the grass during a cold night will register differently from a similar instrument suspended a foot from the ground? And why is it that two similar thermometers, the bulb of one being dry and the other kept continually moist (Mason's hygrometer) will record a variation of temperature, even when subjected to precisely the same influence of either heat or cold? Cold, as we understand the term, is largely dependent upon the amount of moisture suspended in the atmosphere; and any substance which absorbs moisture will be perceptibly—and I think actually—warmer than any substance which will not absorb and therefore condense the moisture. Condensation can only take place through the intervention of a colder body, and the very fact that heated air will give up its contained moisture upon contact with a painted wall when it will not do so—or, at least, not to the same extent—upon a wall covered in paper, is, I think, pretty conclusive evidence that the former is actually colder than the latter for the time being. What applies to cold should also apply to heat; and if any one needs to be convinced that dissimilar articles exposed to the same influence may, and do, vary considerably in temperature, let him expose pieces of wood and iron to the influences of the sun's rays for an hour; or let him take the stone block and the wool mat, each at 40 degrees—C. or F.—and expose them for, say, fifteen minutes to a temperature of zero. I will guarantee, Sir, that it won't need a thermometer to differentiate between the temperature of either of the pairs of substances. Theoretically, "Engineer" is right, but he is arguing upon a wrong hypothesis. If we could assume that everything in and upon the earth altered its temperature at the same rate, then my contention is wrong; but according to the sensibility of various substances, so do their temperatures vary. As "Engineer" says, Nature is not deceived; and if she consents to condense moisture on a painted wall, when she will not do so on one that is papered, isn't that a plain verdict of Nature that the painted wall is the colder of the two?

"THE WRITER OF THE ANSWER."



## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,

March 22nd 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

**Bradford Fire Station Competition.** THE Bradford City Council apparently are not to be moved by protests. The Council as a whole have accepted the recommendation of their committee with regard to the plans for the proposed Central Fire Brigade Station, and have decided to apply for authority to borrow £30,000 (exactly double the amount named in the conditions of competition as the limit of cost) for the purpose of carrying out the accepted designs. At the monthly meeting of the City Council, held on the 14th, the letter of protest from competing architects, which appeared in our issue last week, was referred to the Watch Committee. On the motion that the minutes of that committee be adopted, some discussion took place, which showed that whatever might be the opinion of the Council as a whole, there are individual members who are by no means satisfied with the manner in which the competition has been decided.

**The Committee's Defence.** The Chairman of the Watch Committee, Mr. J. Moorhouse, replied to, but certainly did not dispose of, the objections that had been raised. He admitted that even yet the committee has not come to a decision between the three alternative designs submitted by Messrs. Mawson and Hudson; they all, he said, met the requirements of the committee. He maintained that the greatest possible pains were taken to arrive at a fair decision; the committee spent three full half-days in going over the plans in every detail, and everything was fair and above board. There were no names and no distinguishing marks upon the plans by which the members could recognise the architects, and until the letters were opened he had not the slightest idea as to who had drawn them. Of course, said Mr. Moorhouse, they could not expect to satisfy all the competitors. Perhaps not, but they might have taken some pains at least to comply with the conditions they themselves laid down. We do not accuse the Chairman and the Watch Committee of any intentional unfairness, but we repeat that the criticisms contained in our article of March 1st (of which a copy was sent to every member of the council), and in the protest of the architects which we printed last week, have not been answered.

**Architects and Surveyor.** SOME little unpleasantness has arisen at Swansea, in consequence of the Borough Surveyor poaching on the preserves of the architects. At a meeting of the Property Committee of the Corporation, a letter was read from the architects of the town protesting against the borough surveyor being instructed to prepare designs for the temporary buildings in connection with the Intermediate School for Boys on the ground that if his staff is large enough to enable him to take private work, it is too large for the ordinary duties of the office, and if, on the other hand, his staff is

only sufficient to cope with the ordinary work of his office, the public interest must suffer by his taking up private work; also, that Mr. Bell is a civil engineer and surveyor, and not an architect. In discussion, it was said that the work had more reference to excavations and levelling than Architecture, and that the buildings were only to be temporary. It was decided to allow the letter to lie on the table. On the face of it the grievance, if any, seems a very small one, not worth making a pother about.

**The Abuse of Advertising.** THAT useful society, the Society for Checking the Abuses of Public Advertising, has been tackling the Chancellor of the Exchequer on the subject of the taxation of exposed advertisements. The hon. secretary of the Society, Mr. R. Evans pointed out that in France the stamps on *affiches* amounted in 1897 to nearly three and a half millions of francs, and the income in the United Kingdom from an equivalent tax would be proportionately greater. A moderate impost would reduce the gross value of displayed advertisements without causing any real loss or hindrance to the legitimate forms of announcement for business purposes. It might have been supposed that the Chancellor, in view of the heavy deficit impending, would have jumped at this proposal. But he didn't; in reply he wrote that "he can only regard the matter from the point of view of revenue; and, looked at from that point, he does not see on what ground a tax on advertisements could be defended unless newspaper advertisements were included. He does not think it necessary to dwell on the objections that would certainly be raised to such a tax." The society, in a second letter, submitted, in answer to this, that a newspaper, until purchased by someone else, was the exclusive property of the producer, whereas the advertisements objected to were forced upon the attention of the citizen in the public thoroughfares, leaving him no means of retaliation or self-defence, and they pointed out that there were many analogies in the existing fiscal system for the discrimination advocated.

**A Spirited Offer.** A WEEK or so ago Mr. St. Clair Baddeley, a member of the British-American Archaeological Society, gave to some friends and acquaintances a lecture in the Forum at Rome on the subject of the Forum and the Basilica Æmilia, the magnificent hall of Phrygian marble erected in honour of the consul Æmilius in the second century B.C. In the course of the lecture Mr. Baddeley laid stress on the importance of the site now occupied by a number of third-rate houses under which lie parts of the Forum and the Basilica which have never been explored. He mentioned that the cost of buying up the houses which cover this archaeological mine would amount to about £2500. Among the audience was Mr. Lionel Philips, who at the close of the lecture remarked that the only way he could recompense the lecturer for the pleasure he had experienced in listening to so real and vivid a description of the triumphal return of the Romans laden with so many trophies of Greek sculpture and Greek Art would be to contribute, if allowed, to the cost of expropriating the houses and carrying out the excavations. He therefore authorised the lecturer to announce to Signor Baccelli, the Minister of Public Instruction, his readiness to contribute £2500 to the undertaking, the money to be utilised exclusively for buying up the houses and excavating the sites. It is to be hoped the Italian Government will take advantage of this generous offer, as it can hardly fail to lead to archaeological discoveries of great value.

**The New Vauxhall Bridge.** We commented last week on a statement made by Mr. Ward, Chairman of the Bridges Committee of the L.C.C., respecting the circumstances attending the selection of the design for the new Vauxhall bridge. At last week's meeting of the L.C.C., Dr. Longstaff asked whether the Institute of British

Architects had been consulted as to the design of the new bridge since the method of construction in concrete was adopted; whether the Bridges Committee desired the new bridge to be an ornament to London, and, if so, what steps they proposed to take to secure that end. Mr. Ward said that the answer to the first question was in the affirmative. The Committee of the Institute of British Architects had been seen three times on the subject of the original design of the bridge. The arches were then of steel, but as a result of these interviews the Committee, on the advice of their engineer, arranged to build the arches of concrete faced with granite. Fresh drawings were made and a model was prepared in plaster on a large scale. The Committee of the Institute was again invited by the engineer to view both the new drawings and the model. Messrs. Waterhouse and Mountford alone came. And as the result of this further interview, Mr. Waterhouse wrote the letter he had referred to last week. After approving the design of the bridge, the letter made some further suggestions on minor matters, and some of these would no doubt be incorporated in the working drawings which were being made for the arches. The piers had been decided on some time ago and the contract had been let. The architects seemed to differ greatly among themselves. He certainly hoped the new bridge would be an ornament to London; but even now the Committee would be glad of any further suggestions or criticisms from the architects.

**The Architects' Version.** IN reply to Mr. Ward's statement, it will be sufficient to quote from a letter which Mr. Locke, secretary to the R.I.B.A., sent to the committee on February 21st, and which was published in the "Times" on March 10th. "I have to state," wrote Mr. Locke, "that the communications which have passed between this Institute and the London County Council—dating back to 1894—have been almost entirely confined to the construction of an iron bridge with stone piers, a form of construction originally insisted upon by the Bridges Committee, but subsequently abandoned. . . . Details, suggestions, and criticisms dealing with an iron structure are not, however, applicable to one completely dressed in stone, and the only inter-communication afforded by the engineer in reference to the stone-clad design (recently made public), has been the interview alluded to in your letter between Sir A. Binnie and Mr. Waterhouse and Mr. Mountford, which interview was, at Sir A. Binnie's instance, to be considered informal and confidential. . . . At the same time, I am to express surprise that the London County Council should have fallen back upon an expressly confidential letter and interview to base its refusal, more especially when my council have had no opportunity of seeing the design or forming an opinion upon it until its recent publication."

**Municipal Trading.** THE question whether municipalities should engage in trading operations in competition with, or to the exclusion of, the private trader, is one upon which it is desirable that we should all make up our minds. The present day tendency is, beyond doubt, in the direction of the municipalisation of many things that were once regarded as matters for purely private enterprise. The question is whether this tendency is a good or an evil one. From the point of view of certain interests it is undoubtedly dangerous, but from the larger standpoint of the public welfare we have no doubt whatever that the tendency is one to be welcomed and encouraged. Two publications have recently been issued which help towards a right understanding of the question. The one is a pamphlet on "The Cost of Municipal Trading" (P. S. King and Son, Orchard House, Westminster), being a reprint of a paper read by Mr. Dixon Henry Davies before the Society of Arts, together with a report of the discussion which followed. The other is a Parliamentary paper giving a return of the reproductive undertakings conducted by the municipal corporations of England and Wales.



**Conflicting Statistics.** MR. DAVIES, who treats his apparently dry subject in a very bright and entertaining manner, contends that the representative check on local expenditure is inoperative and insufficient, that municipalities are piling up enormous debts, discouraging inventiveness, and imposing heavy burdens on the ratepayers without giving any adequate returns for them. These contentions are supported by a number of statistics and charts, which show clearly enough the increase in local debt, but fail to show what proportion (if any) of that increase is due to the trading operations of the municipalities. When we turn to the examination of the other set of statistics—that contained in the Government return—we find it abundantly proved that, taking the country over, the municipal undertakings result in huge profits which go towards the relief of rates; and it must be remembered also that the municipal service is, and often better, and nearly always cheaper, than that supplied by private enterprise. We find that municipal waterworks throughout the country have yielded, during the past five years, an annual net profit of £1,744,361, and gasworks a net profit of £1,180,208. The other items dealt with in the return are tramways, electric lighting, markets, baths, canteen-tries, working-class dwellings, piers, quays, &c. The profits shown in each case tend to disprove the contention of Mr. Davies, the Earl of Wemyss and others, that the community suffers through keeping the management of these matters in the hands of its own representatives.

**The Workmen's Dwellings Bill.** THE bill for assisting workmen to become owners of the houses they occupy, which was introduced into the House of Commons last week by Mr. Chamberlain, is one of those small measures about which it is impossible for anyone to be enthusiastic. As a contribution to the serious and pressing problem of the housing of the working classes it is hardly worth considering. The utmost it is likely to accomplish is to enable a thrifty workman here and there to become the proud owner of a jerry-built suburban cottage. The bill will not apply to houses of a higher value than £300, and it will be quite voluntary in its operations. The workman need not borrow unless he likes, the house owner need not sell unless he likes, and the local authority need not lend unless it likes. Doubtless the bill, if passed, will do no particular harm, but neither will it do much good. It certainly will not solve the housing problem.

**A Building Trades' School.** The London County Council, last Tuesday week, on a recommendation of the Technical Education Board, agreed to purchase the Brixton Baths from the Lambeth Vestry for £4,000, for the purpose of converting them into a Building Trades' School. The Board has had the subject under consideration for two or three years. Upon inquiry it found that forty-one representative firms in various branches of the Building Trades, having 12,000 employes had only eighty apprentices and 143 learners, instead of 1600 which would be about the normal proportion. The building trades in London are mainly recruited from the country, and, as a result, London boys find a great difficulty in obtaining situations with employers who will teach them their trade. The Polytechnics, it is well known, are not sufficient to meet the difficulty. The Board found that the men and boys engaged in the building trade come mostly from Hackney, Wandsworth, Lambeth, and Camberwell. Hackney has a school in Cassland House, and the baths at Lambeth, it is thought, will provide for those in the South of London. The baths are in Ferndale Road, Brixton, and are situated on a site of about 49,000 sq. ft., and the buildings already there cover only about one-fourth of the site. If this scheme is carried out as it should be, it will provide qualified workmen who can start at full wages, thus obviating the opposition which workmen put forth against apprenticeship, as tending to lower the rate of wages.

## NEW BATHS AND WASHHOUSES FOR SHOREDITCH.

LAST Saturday, the new baths and washhouses, which have been erected for the vestry of Shoreditch, were formally opened by Mr. James Stuart, M.P. As the building is among the best designed and best equipped of its kind to be found in London, a short description will probably be read with interest. The ground floor plan and the three elevations are given in one of our inset plates. The joint architects of the baths and washhouses are Messrs. Spalding and Cross, of Queen Street, who were chiefly responsible for the plan, and Mr. Henry T. Hare, of Bloomsbury, who designed the elevations.

### Constructional Details.

The buildings have frontages to three separate streets—viz., Pitfield Street, Coronet Street, and Bowling Green Walk, the first named being the main front, which has been designed to group with the adjoining free library. The whole of the elevations are faced with best red facing bricks, with buff terra-cotta dressings supplied by the Burmantofts Company, and the roofs are covered with red tiles. In the interior of the building glazed bricks and tiles have been very largely used, and the woodwork in the main corridors and large swimming bath is of teak. The whole of the floors and flat roofs are of fireproof construction, and the roofs over the swimming baths, laundry, &c., are constructed with wrought-iron principals. Perhaps the most notable feature of the building is the

### First Class Swimming Bath,

which is remarkable for the elaborate arrangements made for accommodating a large number of spectators. The swimming pond measures 100ft. by 40ft., and extensive galleries, with seating accommodation for 520 people, run round three sides of it. The whole of the space at the sides of the bath can also be utilised for spectators if necessary, as the dressing boxes are so constructed that they can be easily and quickly folded back against the wall where they form a neat panelled dado. This bath has been licensed by the London County Council as a public hall for meetings and entertainments, and it will be so used during the winter months. The bath lends itself to this purpose much more readily than do the majority of swimming baths. When floored over it will accommodate about 2000 people. There is ample and direct ingress and egress, and the necessary cloak room accommodation is provided. The second-class swimming bath is 75ft. long and 34ft. wide; it is provided with fifty-six dressing boxes, and a soap bath. This bath is to be used as a gymnasium during the winter months.

### The Slipper Baths,

which number seventy-six, are fitted in excellent style. All the baths are porcelain, and the woodwork is teak. The partitions in the first-class baths are of St. Anne's marble, and in the second class of slate. The public laundry is on the ground floor level, and contains fifty washing compartments and fifty steam-drying horses, as well as fittings for ironing and mangling. The greatest care has been taken in protecting every part of the machinery, to avoid any possibility of accident. No boilers are used, and no coal is required. All the heat is supplied by means of

### Exhaust Steam

from the adjoining electric lighting station. This steam, which, unless so utilised, would be wasted, is so manipulated by means of an elaborate system of condensers, valves, and pipes that it supplies the whole establishment, including the laundry, with all the heat required, thus effecting a very great economy. Largely owing to the adoption of this system it is confidently expected that the new baths will not only pay their way, but will show a substantial profit on each year's working.

The ratepayers of Shoreditch, if one may judge from the demeanour of those of them who attended

### The Opening Ceremony

on Saturday afternoon, are well satisfied, as indeed they ought to be, with the latest evidence of the public spirit of their vestry. The ample seating accommodation of the first-class bath was taxed to the utmost with the crowd that gathered to inaugurate the new undertaking, and the proceedings were throughout of a cordial and even an enthusiastic character. Mr. E. J. Wakeling, the chairman of the Baths and Washhouses Committee, who has the advantage of being himself an expert swimmer, made a short statement relative to the inception and progress of the bath scheme in Shoreditch, after which Mr. James Stuart, M.P., formally declared the baths open. In the course of his speech Mr. Stuart referred to the fact that the vestry had erected on what was practically, so far as the public were concerned, a waste space the free library, the electric lighting installation, and the baths and washhouses, the whole forming a wonderful collection of the results of the municipal enterprise of Shoreditch. Mr. Stuart spoke in appreciative terms of the efforts of those who during the past twenty years had striven to cultivate among the people of the parish a strong sense of public duty. It should never be forgotten, he said, that public enterprise was not, as some thought, antagonistic to private enterprise; rather was it the direct consequence of private enterprise, and it would be found that where private enterprise and ability were most conspicuous public enterprise was most effective and beneficial.

### The Bath in Use.

Mr. Stuart's address, which was punctuated by frequent applause, was followed by what proved to be the most popular item of the afternoon's entertainment. Mr. Wakeling, the Chairman of the Committee, appeared in swimming costume and took the first plunge in the new bath, swimming the whole length of the bath under the water. A short entertainment was then given by a number of well-known amateur swimmers, after which Mr. S. G. Porter, Chairman of the Shoreditch Vestry, proposed a vote of thanks to Mr. Stuart for his performance of the ceremony. In the course of his speech Mr. Porter spoke of the great need for such an institution in Shoreditch in view of the fact that two-fifths of the population, or nearly 50,000 people, lived in one or two-room tenements which were necessarily without conveniences for personal and domestic cleanliness.—Mr. H. T. Sawell, L.C.C., seconded the motion, which was carried with enthusiasm, and Mr. Stuart briefly acknowledged the compliment.

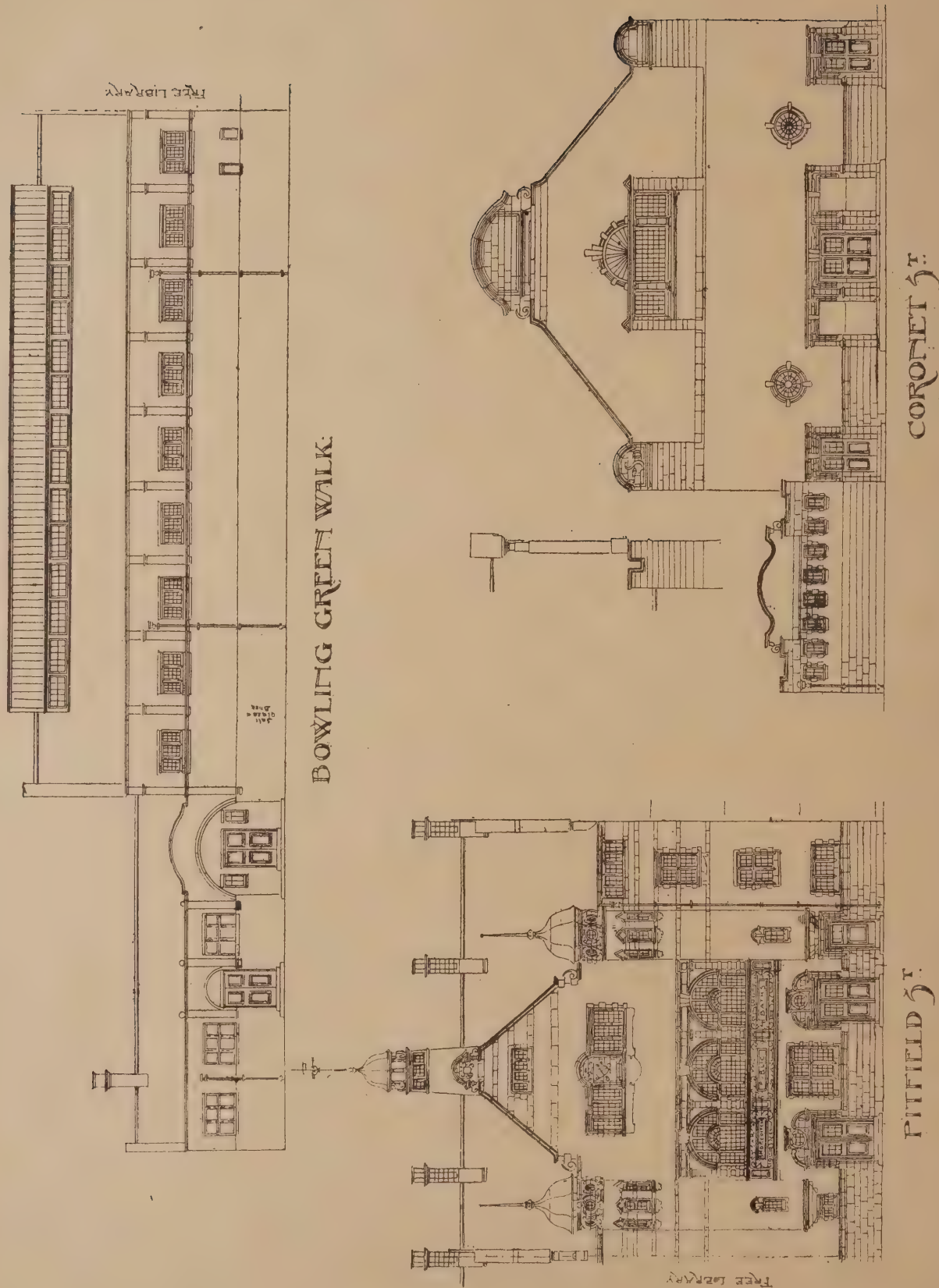
### The Utilisation of Waste Products.

Mr. Henry Ward, L.C.C., in proposing a vote of thanks to the Committee for their services, explained to the audience the way in which the baths were heated by the utilisation of exhaust steam. This, he said, was one of a series of processes by which what were usually regarded as waste products were turned to good account. First the refuse of the parish was burnt in the dust destructor station, and, instead of the waste heat going up the chimney, boilers were put over the furnaces and steam was generated which served to drive the engines in the adjoining electric lighting station. Then they got another waste product, one that might easily become a nuisance, as it did in many localities, viz., the exhaust steam. The Committee were advised that there was a means of utilising this exhaust steam, and accordingly, it was taken from the electric lighting station and passed into the baths to warm the water and the air of the building. There was yet another waste product—the water condensed from the steam; this was made to flow back into the electric lighting station where it served to feed the boilers, thus effecting a considerable saving to the vestry in water rate. The vote of thanks was seconded by Mr. Edward Austin and heartily carried, after which a cordial vote of thanks to the popular and energetic chairman, Mr. Wakeling, brought the proceedings to a close.

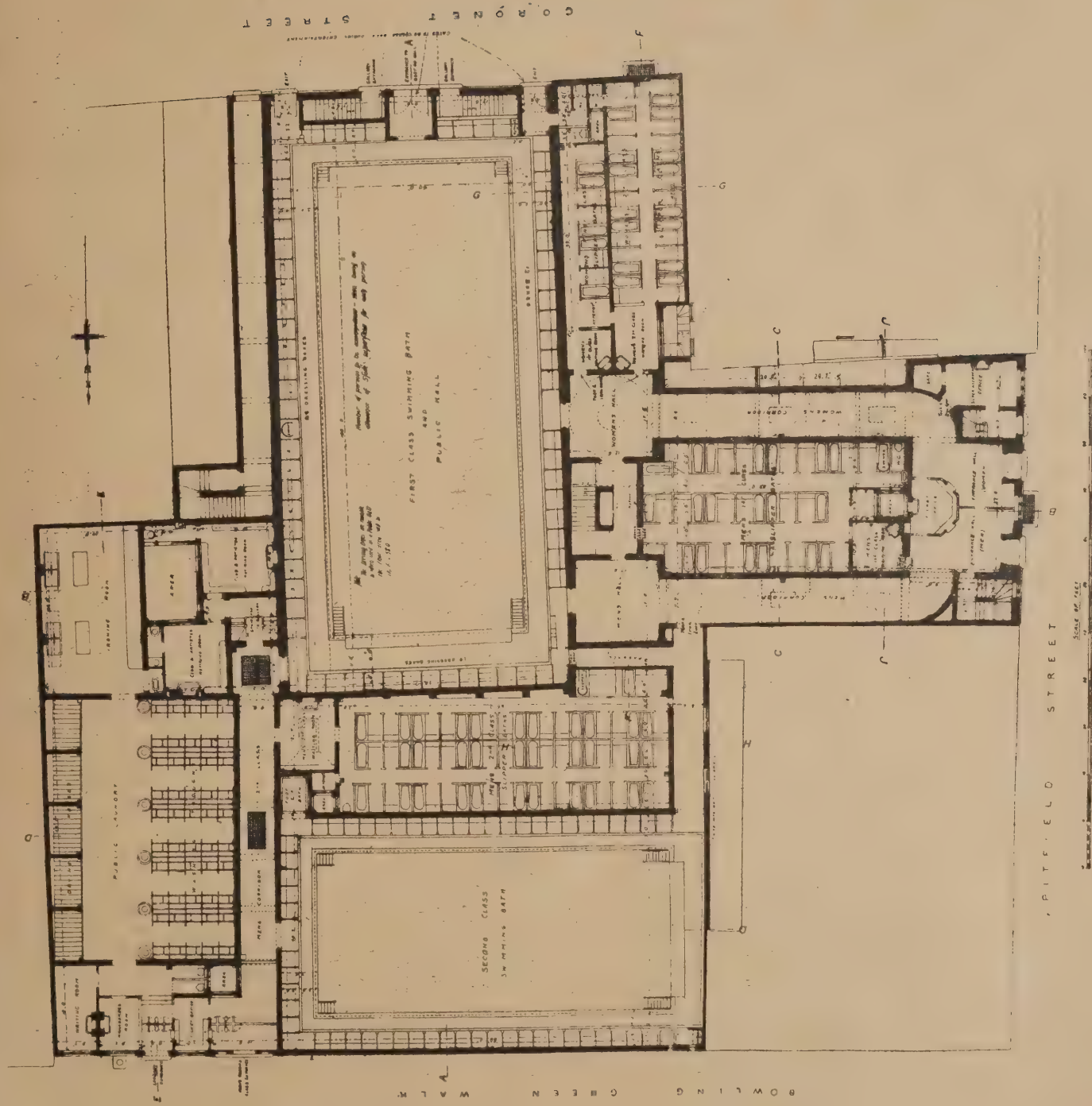


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BOROUGH OF SHOREDITCH NEW PUBLIC BATHS AND WASHHOUSES. SPALDING AND CROSS, AND HENRY T. HARE, JOINT ARCHITECTS. (See p. 108.)



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## Views and Reviews.

### "THE MOTOR CAR JOURNAL."

We have received the first number of this new illustrated newspaper, which is devoted to the interests of those concerned in self-propelled traffic. The journal is excellently got up, being printed on good paper, and is cheap at 1d. per week. It is not confined to dry technicalities, but treats in a popular way on many matters more or less closely connected with the Motor-car. The new journal is calculated to apply a much needed stimulus to an industry that is full of promise for the future, but has not hitherto come up to expectations in the matter of accomplishment.

"The Motor-Car Journal." Single Copies 1d. post free 1d. Annual Subscription (post free) 6s. 6d. Published by Cordingley and Co., 39 and 40, Shoe Lane, E.C.

### DRAWINGS BY ALFRED STEVENS.

At the Galleries of Messrs. Carfax, 17, Ryder Street, St. James's, are collected some drawings by that great genius, Alfred Stevens, to whom the British nation gave small encouragement while he was alive, though he is now recognised by all whose opinion is worth having as towering above most of his contemporaries. The Wellington monument, his most important work (over which he broke his heart), remains incomplete; the little lions on the railing outside the British Museum (one of the few entirely satisfactory things made for London streets) have been removed, and now can only be seen in a museum; and it is said that by a curious irony another man whose name sounded the same, but was spelt differently, was elected associate of the Royal Academy by mistake for him. So difficult is it for genius to obtain substantial recognition while it lives.

The drawings shown at Messrs. Carfax's gallery are such as are interesting principally to the painter, who finds with surprise that a sculptor can draw finely. They are of two classes—original studies in red chalk of grouping, gesture and casts of drapery and drawings made in lead pencil from Italian frescoes, mostly of the earlier schools. As these were made before 1842, they show that Stevens was a pioneer in the appreciation of the primitives which Ruskin and the pre-Raphaelites did so much to foster. Many of them are from Florence, but a drawing from Benozzo Gozzoli's frescoes of the life of St. Augustine shows that he went as far afield as San Gimignano. A few are touched with colour, where the costume appears to have been the object, though more usually the composition and the character of the heads are the points noted.

The drawings in red chalk show many parts of figures and portions of casts of drapery repeated over and over again with small variations, making the effect of the whole drawing confused, as in Nos. 10, 17, and 29, the climax of which practice is reached in No. 23, where the model has moved and the second pose is drawn over the first. That is to say, that one sees here the mechanism of Stevens's design, drawings never intended to be exhibited. The finest drapery study is perhaps No. 16, a man wrapped in a great cloak, seated, and warming his hands. No. 5—a side view of a man in violent action, as if digging—a design probably made to fill a circle with a portion of the figure, is drawn with great knowledge and decision, and a companion composition is No. 32, in which the lines are well arranged to fill the space.

There is also in the gallery a scrap book which is interesting, as showing what sort of things Stevens found useful for his work and thought enough of to make sketches and tracings of.

A. W.

### TWO USEFUL ANNUALS.

Both these books are primarily intended for the use of officials and members of public bodies, and to such they are indispensable; but there is no reason in the world why they should not circulate widely amongst other sections of the community. Architects, for instance, who

enter competitions, and builders who tender for contracts advertised by local governing bodies must frequently stand in need of some such work of reference.

Dealing first with the "Local Government Annual" we find that the present issue, the eighth, is considerably larger than those of previous years. A considerable section of the book is devoted to "An Encyclopædia of Local Government," which gives an astonishing variety of useful facts in a singularly attractive form. Here we have the new journalism applied to statistics, and the result is certainly noteworthy; it is no slight achievement to present facts and figures about drains and sewers, water and gas companies, hospitals and telephones, tramways, and a hundred other matters in short, bright paragraphs that are not merely informing, but positively entertaining. Nevertheless, the method has its drawbacks; you cannot see at a glance what information the book contains, and you may have some little difficulty in finding the information you require. An ample index would to a great extent obviate the latter difficulty; the list of contents at the beginning of the volume is altogether too meagre.

The "Municipal Year Book" is wanting in the "tit-bits" element which gives a certain piquancy to the volume just noticed, but on the other hand the aim of the book as a work for constant and easy reference has been consistently kept in view. There is a copious index, and the contents are arranged on a definite and easily intelligible plan. A chapter on Municipal Legislation in 1898 is followed by one which explains very clearly the curious jumble of London Local Government, and points out what duties are carried out by the various authorities. The functions of the London County Council and of the Corporation are clearly defined. The method adopted in dealing with local government in the provinces is to give under the heading of each town, county borough, or Urban District Council a succinct statement of its municipal history, and information as to baths, lighting, technical education, &c., with names of councillors and officials. The space devoted to each town is roughly proportionate to its size and importance. Rural District Councils and Boards of Guardians apparently are not considered of sufficient importance to find a place in the volume. The inclusion of even the briefest particulars regarding them would add much to the value of the work. Various matters of special interest are dealt with in separate chapters rather than in the sections devoted to each town. These special chapters, which are full of invaluable information, deal with tramways, the housing of the working classes, and the supply of water, gas, and electricity.

"The Local Government Annual." Edited by S. Edgecombe-Rogers. Price 2s. 6d. "The Local Government Journal" Office, 2, Dorset Street, Fleet Street, E.C.

"The Municipal Year Book." Edited by Robert Donald. Price 2s. 6d. Edward Lloyd Limited, 12, Salisbury Square, E.C.

**A New Harbour.**—The Seaham Harbour Dock Company is offering for subscription 21,165 preference shares, entitled to a  $4\frac{1}{2}$  per cent. cumulative dividend, and 1500 ordinary shares. The harbour at present is only fit for the reception of vessels of 1000 tons burthen; the new dock will accommodate vessels of 5000 tons burthen. The cost of the new works will be £378,000; they are expected to be open in two or three years, and completed in four years.

**A New Variety of "Arc" Lamp** has been on show at the offices of Messrs. Eldon, Edmonds, and Hayward, Finsbury House, Blomfield Street, London. Its inventor, Mr. W. Davy, claims that it has many advantages over the ordinary electric lamp, the chief of which is that its loose parts are reduced to a minimum—to one in fact—and this facilitates regulation by non-experts. Perfect insulation is claimed to effectually prevent the communication of fire particles to their surroundings, an important matter in places filled with inflammable goods. The lamp is also devoid of the buzzing noise when alight which is one of the objections to some lamps.

## Keystones.

**Two new Theatres** are to be built at Nuneaton.

**The Burne-Jones Exhibition** is to remain open until April 8th.

**A Reservoir Burst** at Leachramuie, near Glenfinnan, last Saturday week.

**The Leeds City Council** have decided to borrow £150,000 for electricity purposes.

**A kiln collapsed** at the Cement Works at Beeding last Tuesday week, and two men suffered slight injuries.

**Camel's Head Bridge, Devonport**, is to be reconstructed, and will be 42ft. wide, including a footpath on each side 6ft. wide.

**The Enlargement of St. James's School, Huddersfield**, has cost about £1500; the schools were reopened on Saturday, last week.

**Alterations at the Central Meat Market** are being carried out on the premises of Messrs. T. Borthwick and Sons by Mr. W. E. Hazell, architect, of 23, Moorgate Street.

**Additions and Alterations** to the steam laundry at the infirmary in the Archway Road, Highgate, London, are being supervised by Mr. J. Budley, Engineer, of Suffolk House, Laurence Pountney Hill, London.

**A reredos** erected in the chapel of St. Thomas's Hospital, in memory of the late Sir Henry Doulton, was unveiled yesterday by the Bishop of Rochester. The reredos is the gift of Sir Henry's son, and has been designed by Mr. Tinworth.

**A Celtic Cross** is on show at the premises of Mr. Robert Simpson, North British Granite Works, Constitution Street, Aberdeen. The principal embellishment is a pictorial representation in granite of sacred incidents. The monument is formed of white Kemnay granite.

**The Leicestershire County Asylum Site** will consist of about 180 acres of land in the parish of Narborough, and will cost £18,000. Plans are to be prepared for an asylum of 650 beds, with an administrative block adequate for 800 patients, at an extra cost of about £120,000.

**The Architect to the London County Council** has been selected, in the person of Mr. William Edward Riley, by the General Purposes Committee, who have recommended him to the Council for appointment. There were forty-three applicants for the post, which carries £2,000 a year.

**Proposed New Shambles at Grimsby.**—Negotiations between the Police Commissioners and Messrs. Charles Brown and Co. Limited, for the purchase by the former of the site of some old saw mills in North Grimsby for the purpose of erecting new public shambles, are practically completed. The site is to cost £3150.

**A Sewer Fatality.**—On Friday last, a lamentable accident occurred in Osnaburgh Street, Regent's Park, which resulted in the loss of two lives. About a month ago, a Stepney contractor, named Robert Montgomery, began to connect the drain of 37, Osnaburgh Street, with the main sewer, running parallel with the Church of St. Mary Magdalen; he was assisted in the work by his brother, Charles Montgomery, and a labourer, named William Chamberlain. In order to reach the sewer, it was necessary to tunnel under a portion of the street, and, owing to the looseness of the soil, parts of the work were shored up. The excavation progressed satisfactorily, and the pipes were laid. While the work of filling in was in progress, the roof of the subterranean passage fell in, and with it a large quantity of earth. The contractor was rescued almost immediately and taken to a hospital. The man Chamberlain was extricated at one o'clock on Saturday morning, but died directly after his rescue. On Sunday afternoon, after forty-eight hours incessant toil on the part of the rescuers, the body of the other victim was recovered.



## Professional Practice.

**Aberdeen.**—New offices are to be erected in Aberdeen for the Scottish Temperance Life and Accident Assurance Company Limited. The new building will occupy the site of the dwelling-house, 154, Union Street, next to the Royal Bank. The site is unfortunately rather narrow, and the architects—Messrs. Jenkins, and Marr, Bridge Street, Aberdeen, have consequently been somewhat hampered from an architectural point of view, but they have made the most of the space at their disposal. The style of the building may be described as free classic. In height it will be 70ft., with a width of 34ft., and it will have a depth to Diamond Lane of 92ft., which will to some extent compensate for the narrowness of the front. The basement will be occupied with cellars and stores, and on the ground floor there will be two handsome shops, with extensive saloons behind. These shops will be on either side of a fine central door, giving access to the upper floors. The door has a graceful fanlight, and it is surmounted by a balustrade. The architectural effect is accentuated by the ornamental gables in which the structure terminates above. On the first floor there are two sets of offices in the front, and one in the back of the building, and they are roomy and well-lighted. In the second floor there is a slightly different arrangement, viz., two offices in the front and two at the back. The third floor and attics will be let as a dwelling-house. On the level of the third floor there is a laundry and a washing-house conveniently situated. Part of the first floor will be utilised as the Aberdeen offices of the Assurance Company, who will leave their present premises at 137, Union Street. The building will be of finely-dressed grey granite. The estimated cost, apart from the cost of the site, is £5000.

**Bordesley.**—The new Imperial Theatre, will, it is hoped, be completed for opening on Monday, October 2nd. Already very satisfactory progress has been made with the work, and the building promises to be a good example of a provincial theatre. The plans have been prepared by Messrs. Owen and Ward. The building has two frontages, one to High Street 104ft., and the other to Clyde Street of 134ft. There are twelve exits from the various parts of the house, communicating directly with the streets, and each section of the building has at least two spacious fireproof staircases in connection with it. The grand hall leading to circle and stalls is approached through three pairs of handsome mahogany and glass doors, and is 25ft. by 20ft., with wide staircases on both sides leading to the dress circle. The ceiling of the hall will be domed and decorated with hand-painted panels illustrative of Shakespear's work, and the wall will be lined with marble in parti-colours, and the floors paved with marble mosaic. The auditorium is 69ft. by 65ft., and the stage 69ft. by 40ft. Both gas and electricity will be employed for lighting purposes throughout. The interior decorations will be principally of fibrous plaster in the Renaissance style, the prevailing colours being cream, blue, and gold, whilst the draperies and upholstery will be in old gold silk. A domed ceiling, with a quaint proscenium front, completes the interior embellishments. The elevation to High Street is in red Ruabon brick, with buff terra-cotta dressings by Messrs. Doulton and Co., the two extreme angles being surmounted by square towers; whilst a gabled pediment adorns the central feature. An ornamental iron and glass verandah, supported on cantilevers, is placed as a shelter over the principal entrances. The circle and gallery are supported on steel cantilevers. There will be a fireproof curtain to the proscenium opening.

**Bradford.**—A new Baptist chapel is to be erected on a site in Carlisle Road. The style of the building will be modified Gothic; it will consist of two blocks, connected at the end farthest from Carlisle Road by a small block containing a kitchen and serving rooms,

while at the south-west corner, abutting towards Drummond Road, will be the chapel keeper's house. Accommodation will be provided for about 800 persons, and the seats will be disposed on the radiating principle. The vestries are arranged at the rear of the building. The baptistry will be in tiles and marble. The school buildings, which form the other blocks, will on the ground floor consist of an assembly hall, infants' school, and twelve class rooms, with library, committee and cloak rooms. Six of the class rooms will be constructed so that they can be thrown into the body of the assembly hall when additional space is required for large meetings. On the upper floor will be ten class rooms, and a lecture hall. The assembly hall will have a gallery round three sides and a small organ chamber. The plans have been prepared by Mr. James Ledingham, architect, of Bradford.

**Bridgford.**—The Friary Congregational Church, West Bridgford, has just been opened. The site is situated at the junction of Musters Road and Millicent Road, and the plans were prepared by Messrs. E. C. and E. R. Sutton, architects, Bromley House. The trustees originally gave instructions for the preparation of designs for a church, hall, and schools, with accessories to form a harmonious group, but it was deemed advisable that the hall and schools should be proceeded with directly, in consequence of the immediate want of accommodation, and these have now been completed. The style adopted was Late Decorated, somewhat freely treated, and the structure is of red brick, with stone facings. A prominent feature of the end directly adjoining Musters Road is a large five-light window, having stone mullions and tracery, flanked on either side by massive piers. The gables are covered with substantial stone copings. The hall has been designed so as to constitute an adjunct to the proposed church. There are four entrances to the hall with lobbies, and its dimensions are 56ft. by 25ft. The building was erected by Mr. W. Maule.

**Bristol.**—The dedication of the vicarage of All Saints, with All Hallows, Euston Road, Bristol, took place on Saturday. The building is constructed of Winterbourne stone with Bath stone dressings, and has been erected at a cost of about £2500, the site accounting for an additional £630. The house was designed by Messrs. Crisp and Oatley, and the builders were Messrs. Walters and Son.

**Clontarf, Ireland.**—A new chancel has been dedicated in Clontarf parish church. It has been erected by Mr. Robert Lidwell, J.P., in accordance with the plans of the architect, Mr. Fuller. It is about 24ft. in depth, and is floored in marble mosaics, a quatrefoil forming the centre piece. About 130 additional sittings have been added to the church by the extension. A kerb stone of red Cork marble has been erected around the Communion table, and the interior of the edifice has been embellished by two stained lancet windows in the Gothic style, with a new Bath stone entrance. The roof consists of pannelled pitch pine sheeting to match the roof of the nave. Eight clergy stalls have been placed within the chancel, and seating accommodation for a choir of forty-two persons has also been provided. The sittings are of pine, and were made in the contractor's workshop. The entire work was carried out under the supervision of Mr. M. A. Partridge. The estimated cost of the work is £1500, of which about £1000 has been already collected.

**Dundee.**—A bronze statue of the Queen is to be erected at Dundee on a site fronting the north entrance to the Albert Galleries. The four panels of the statue are occupied by bas reliefs, which have been excellently treated by the late Mr. Harry Bates, A.R.A. The scene depicted on the front panel is the marriage of Her Majesty and Prince Consort. The second picture shown on the back panel has a local interest, and represents the visit of the Queen

and Prince Consort to Dundee in 1844. It illustrates the reception of the royal guests by the provost and other dignitaries. The third panel shows the Queen distributing medals to the soldiers wounded in the Crimea. The last picture gives a view of the Queen visiting the poor. The pedestal of the statue is at present lying in the yard of Messrs. Bower and Florence, granite monumental sculptors, Aberdeen, ready for removal. The stone selected is Peterhead granite, from Blackhill Quarries, and it has been treated in two styles—fine-axed and dull-polished. None of the panels of the die have been highly polished, so that full value will be given to the high lights of the bronze work. The base course measures 21ft. by 19ft. Three steps, semi-circular on the front elevation, leave a landing, 3ft. 6in. wide, all round the pedestal. The base of the pedestal takes the form of a seat, 10ft. 8in. by 9ft., grooved out underneath to give foot-room for those who may care to sit there. The granite die is 2ft. in height, surmounted by a moulded band 6in. deep. On this will rest the bronze frieze with sculptured work, and above this again will be placed the statue of the Queen. The height of the granite pedestal is 9ft.

Plans and sections of proposed new buildings in Dundee, lodged with Mr. W. Mackison, F.R.I.B.A., Burgh Engineer, were submitted to a meeting of the Works Committee of the Town Council on March 13th, and the following were approved:—Shops and dwelling-houses in Blackness Road, Cherryfield Lane, Constitution Street, Lawson Place, Gibb's Lane, High Street, and Marshall Street; and semi-detached villas in Clepington Road.

A two-tenement property is to be erected by Mr. D. Y. Preston in the village of Downfield, which hitherto has principally consisted of buildings of the villa and cottage type. The building will be of three stories. One tenement will consist of half-flats of three rooms each, while the other will contain half-flats of four rooms each. Each house will have, in addition, a scullery and bath room. Tiled ranges will be fitted in the kitchens, while marble mantelpieces will adorn the public rooms. The staircases, which will be in the centre of the buildings, will have hanging steps, with open well-hole lighted from large cupolas on the roofs. Mr. James Hutton, Dundee, is the architect.

**East Compton.**—An institute has been erected at East Compton, Bristol. It is the gift of Lady Davis, of Hollywood. The institute has cost about £600. It is built of Cattybrook brick with Bathstone facings. The interior and furniture are of varnished pitch pine. The reading-room may be shut off from the room for games. It is fitted with low pressure heating apparatus. The work has been carried out by Mr. T. B. Bradford of Brigstocke Road, St. Paul's. The building has a turret clock with a skeleton cast-iron dial and carved centre, the figures, hands, and outer beads being gilt. The movement is furnished with all the latest improvements, and strikes the hours upon a deep-toned bell, fixed over the dial. The escapement is Graham's, the pendulum governing same being compensated, and of great weight.

**Edinburgh.**—The Church of the Good Shepherd, Murrayfield, which has been erected on a site in the Murrayfield district of Edinburgh, was recently opened and consecrated by Bishop Dowden. The church stands picturesquely on the east side of Murrayfield Avenue, having a grove of trees on its south side and a considerable amount of garden ground around it. It at present consists merely of nave and chancel, with a wing for vestries, &c. Ultimately, a north aisle and organ transept will be added, and a square tower will be carried up over the vestry wing. The nave is entered by a porch at the south-west corner of the building. At the west end is the font, beneath a large six-light window. The nave is treated with the utmost simplicity and consists of five bays with plain barrel wood roof. To the north side is the arcade to the future aisle. The pulpit is in the north-east corner of the nave, and is of oak, with linen fold-panelling on the wall behind. The



west part of the chancel is occupied by the choir, which is one step above the nave. The reredos, reaching 15ft. up from the floor, is in the form of a triptych, the centre panel being carried up above the rest. It is surrounded by a pierced and carved frame, with the dove in a halo of rays at the apex, flanked on each side by angelic figures. At the sides are green stamped velvet wings hanging from iron rods. The colour treatment of the whole is in dull red and gold. In the centre light of the east window is a representation of the crucifixion. The background is filled with diapered lattice glass. The heads of the side lights contain the sacred initials on crowned shields within wreaths. At the base of the window are four covered shields with the symbols of the passion. Mr. R. S. Lorimer is the architect.

**Exeter.**—Before His Honour Judge Wood-fall, at Exeter County Court, on March 8th, A. J. Wilkins, late Clerk of the Works at Devon and Exeter Hospital, brought an action against Mr. Charles Cole, architect, for £68, commission at the rate of 1½ per cent. for preparing three bills of quantities and specifications in connection with the new out-patients department of Exeter Hospital. Mr. Dunn, for the plaintiff, said the agreement to pay the 1½ per cent. was verbal, but was made in the presence of Mr. A. E. Boyce, late secretary to the hospital. Mr. Cole was to receive 2½ per cent. on the estimates, and to pay Mr. Wilkins the 1½ per cent. for making out the bills of quantities. The total estimate was £4550. Some friction arose, and the tenders for the work were annulled, and the scheme was abandoned. Mr. Cole, however, would receive his 2½ per cent. all the same. Mr. Boyce said that owing to the dispute between the parties he invited them in the interest of the hospital work to settle the matter, and he would act as umpire. It was agreed that plaintiff should receive 1½ per cent. on the bills of quantities, but nothing was said about the specifications. Mr. Harris, for the defendant, said Mr. Cole was contesting the action in the interest of the hospital, who would have to repay him if a verdict was given against him. He had paid £50 into court as a reasonable settlement of the claim. His Honour gave judgment for plaintiff for £7 in addition to the £50, this being at the rate of 1½ per cent.

**Isle of Man.**—The Isle of Man Banking Co., Ltd., are erecting, at the corner of Prospect Hill and Athol Street, Douglas, a new head office. It will be in the Renaissance style. The exterior will be executed in finely axed granite, and the exterior of the lobby will be of polished granite of various colours. The basement and ground floor will be occupied by the company, the first floor will be let in public offices, and the upper floors devoted to caretakers' rooms and small offices. The architect is Mr. A. Marshall Mackenzie.

**Levenshulme.**—The new offices of the Levenshulme Urban District Council in Stockport Road, Levenshulme, have just been opened. The building has a frontage of 75ft. to Stockport Road, the front being of Ruabon brick, with Derbyshire stone dressings. A 10ft. wide entrance opens upon an octagon hall, which is 15ft. across. The Council Chamber, and all the offices—including accommodation for the clerk, the surveyor, overseers, and sanitary inspector,—and also a Committee room, are reached from this hall, and behind are the caretaker's house, the stables, sheds, and a town's yard. A wide staircase leads to a large public hall 72ft. by 40ft., provided with two retiring-rooms. The building was designed by the Council's surveyor, Mr. James Jepson, of Stockport, and the total cost has been about £6000.

**London, E.C.**—The new premises which have been recently erected for the London and Westminster Bank, at the junction of City Road and Old Street, are built in the Italian style. As far as the first floor cornice the building is constructed in red and grey Aberdeen granite, and the upper part is in red

brick, with Portland stone piers. The building consists of three storeys. The wall linings of the bank-room are in thick solid Devon marble, and the ceiling is in fibrous plaster. Electric light has been installed throughout the building. The main building has been erected by Messrs. J. Grover and Son, of Wilton Works, New North Road, according to plans prepared by Mr. R. Bennett, of 72, Cheapside; Mr. Scale, of Camberwell, was responsible for the stone carving.

**Lurgan (Ireland).**—Plans for the erection of a new Masonic Hall in Lurgan have been prepared by Mr. Ferguson, architect, of Belfast, and approved by the building committee. The building will occupy a prominent position in Windsor Avenue, where a 60ft. frontage site has been secured. It will be two stories high, and the ground floor will be taken up with a dining room, kitchen, and pantries. The second story will be devoted to a lodge room, as well as ante and retiring chambers and secretarial apartment. The building will be enclosed by an ornamental railing, and the work of erection will immediately be proceeded with.

**Yeovil.**—The new premises of the Capital and Counties Bank, which are being erected at the corner of High Street and Princes Street, facing directly down Hendford Street, will form one of the most imposing commercial premises in the town. The building has been designed by Mr. J. Nicholson-Johnston, A.R.I.B.A., architect, of Yeovil. The style chosen is freely-treated Renaissance, and the material used for the exterior carefully selected Hamstone from the quarries of Messrs. Staple and Trask, at Stoke-under-Ham. The edifice has two stories above the actual banking premises, and above them again, recessed behind a balustraded parapet, is an upper floor, lit by picturesque dormers. The main entrance is on the angle of the two sides, and is built on the sweep, and there are oriel windows over this doorway on the first and second floor. The skyline is broken by quaint gables of old Flemish inspiration, and the well carried up masonry of the tall chimney stack is thoughtfully and carefully conceived, adding considerably to the admirable grouping of the building generally. There is a good deal of capably executed stone carving upon the two fronts, all of which has been done by Messrs. Harry Hems and Sons, sculptors, of Exeter. Beneath the bank itself is the strong room, occupying nearly the whole of the basement. The desks, partitions, and all internal fittings will be in oak. The floors and partitions will be of fireproof material, and the structure will be heated throughout by hot water. Messrs. E. R. Bartlett and Sons, of Yeovil, are the general contractors.

**Improvements at Cromer.**—A select committee of the House of Lords had under consideration, on March 14th, a Bill promoted by the Cromer Improvement Commissioners, to extend the sea wall along the remainder of the front, and to construct a pier 183yds. long for pleasure purposes, at an estimated cost of £45,000. The Bill is to be further considered at the next meeting of the Committee.

**Peterborough Cathedral.**—It has been decided to endeavour to complete the restoration of Peterborough Cathedral before the end of the present century. At a meeting held to consider the matter it was stated that during the last sixteen or seventeen years something like £72,000 had been expended on the building. The west front was still not in a proper state of repair, and about £6000 or £8000 were required to place it in an efficient condition.

**Eastwood Wesleyan Church** was reopened on Tuesday last week, after being closed for about six months for restoration purposes. The work, which is the completion of the original design put forward when the church was built in 1870, consists of the erection of a gallery round the organ loft, whilst the place has been redecorated and relighted with incandescent lamps. The cost of the improvements has been upwards of £800.

## Under Discussion.

### ADVANCES IN ENGINEERING.

Mr. Ewing Matheson, M.Inst.C.E., President of the Leeds Chamber of Commerce, lectured last week before the members of the Yorkshire College Engineering Society on "Recent Advances in Engineering." The chair was taken by Mr. J. H. Wicksteed (President), and there was a large attendance. Mr. Matheson sketched the numerous inventions of recent years which had enabled engineers to carry out works that previously were either impossible or too expensive to be undertaken. Among other advances he mentioned the modern methods of excavation, specially instancing subaqueous tunnels. He also referred to the inauguration of the scheme for impounding the upper waters of the Nile; and alluded to the circumstance, not generally known, that the works on the Panama Canal had been recommenced. It was not at all unlikely that this canal would be finished under American auspices, in preference to the Nicaragua Canal. Reference was likewise made by Mr. Matheson to the advantages and economy of Portland cement. Professor Goodman and Mr. Wicksteed took part in the discussion. In an allusion to the American engines for the Midland Railway Company, it was pointed out that English makers have not such scope for the construction of locomotives as the American manufacturers, because the width and height of the English railway bridges and tunnels are less.

### STAIRCASE PLANNING.

At a recent meeting of the Edinburgh Architectural Society Mr. A. Balfour Paul read a paper on "The Staircase." Mr. A. Lorne-Campbell, the President, was in the Chair. After a few introductory remarks, in which he deplored the prevalent practice of treating the stair as a mere ladder, Mr. Paul quoted Palladio's definition of the essentials of a stair—spaciousness, light, and convenience of ascent. With regard to the first, it was pointed out that sufficient headroom did not constitute spaciousness, there being many great staircases where, though 8ft. or 9ft. of headroom existed, people always crouched in ascending owing to bad scale and proportion. On the subject of lighting from above, there was a good deal to be said for and against the practice. Except as regards the top flights, this system lit the wall, and not the stair, but was economical in the matter of wall lights. With reference to ascent, there were many rules for relation between tread, riser, and baluster, which in extreme cases broke down, such, for instance, as the "tread to be double the riser" rule. The smallness of the modern stair dated from about a century ago when land value in the cities began to rise rapidly. One of the main difficulties in modern stair planning arose from the increase of floor to floor heights, combined with economy of space. Winders in any but circular stairs Mr. Paul regarded as simply mantraps, and circular stairs themselves were not to be recommended.

### WORKMEN'S COMPENSATION.

Mr. James A. Love Tindal, of Glasgow, delivered a lecture on Monday, last week, to the architectural branch of the Glasgow Philosophical Society at the Society's Rooms in Bath Street, Glasgow, his subject being "The Workmen's Compensation Act 1897, so far as it affects builders and architects." Mr. P. Macgregor Chalmers, president, occupied the chair. The lecturer said that the Workmen's Compensation Act of 1897 was the result of the irresistible pressure of public opinion and social progress, which seemed to develop the idea that the State had a paternal responsibility in connection with the relations existing between employers and employed. By that Act workmen were practically insured at the expense of their employers and the trade, and, as a necessary result, at the expense of the consumers of the commodities produced by that trade. So far as the 1897 Act was concerned, the law of negligence might have had no



existence, as a workman coming under the Act was entitled to compensation irrespective of negligence or carelessness on his part, so long as he was not proved to have been guilty of serious and wilful misconduct. The Act was probably the commencement of a system of compulsory restrictions on the freedom hitherto exercised by employers and their workmen, and further legislation extending and emphasising the principles which it promulgated might be expected. Mr. Tindal thereafter took the Act clause by clause, explaining the effect of each, especially with regard to the building trade, and pointed out various conditions which restricted the operation of the Act, particularly that its provisions would not apply unless the building being constructed, repaired, or demolished, exceeded 30ft. in height. A discussion followed, and a vote of thanks to the lecturer concluded the proceedings.

RENAISSANCE PLASTERWORK.

At the meeting of the Edinburgh Architectural Association in the Royal Institution, on March 8th, Mr. Harold Tarbolton read a paper on "Plasterwork of the Renaissance period in Great Britain, and its subsequent phases." Mr. Tarbolton traced the history of plaster decoration from the somewhat isolated attempts of Italian craftsmen to pursue their art in England, and, on the death of their patron Henry VIII., the influx of Germans and Dutch with their strange and sometimes crude displays of decoration, down to the introduction by Inigo Jones of the later and much modified Italian modes. The starting point of all plaster work was the moulding of old ceilings, which might be divided into two kinds—those with enrichments modelled in a cast from an impressionable medium such as clay, and those modelled *in situ*. Having described the two processes, Mr. Tarbolton remarked that no beautiful detail and delicacy of execution, in plaster work in any other craft, could condone any offence against proportion. Let them take all that was best in conception from the old work; they had magnificent examples within reach. He wished especially to emphasise the importance to architects of a personal and practical knowledge of the crafts. They could not fully understand the capabilities and limitations of

any material until they knew its nature and ways of working. Until they had handled clay and worked with hawk and tool in hand and modelled *in situ*, it was next to impossible to appreciate the subtleties of the craft in plaster work. Architects should at least know thoroughly the interpretation and manipulation of one or more crafts in their endeavour to catch the spirit and vigour of the earlier Renaissance workmen. A great work has been done in the School of Applied Art in Edinburgh in familiarising students with materials and their workings, and he was confident they would see the result in the work of the next few years. The paper was illustrated by lime-light views of ceilings in England and Scotland.

VALVES OF STEAM ENGINES.

The monthly meeting of the Belfast Mechanical and Engineering Association was held in the Museum, College Square North, on the 28th ult., the president (Mr. George Elliott) being in the chair. Mr. W. D. Ferguson read an interesting paper on "Valves of Modern Steam Engines." Beginning with the common D valve, the author described the great variety of different settings which may be effected with this valve, and their influence on the diagrams. It was one of the earliest types of valve, and is still the most useful owing to its extreme simplicity. In order to give a quicker opening to steam, the D valve is made with a passage from end to end—called a "Trick" passage after its inventor—which for the same port opening reduces the travel by one half, and is very useful in locomotive and marine work when working "linked up." The double-ported D valve has practically a trick passage for both steam and exhaust. Meyers' valve in its three forms was next described. Corliss valves are made both single and double-ported, and are usually fitted four to each cylinder—two steam and two exhaust—thus allowing any one valve to be altered without affecting the others. The steam valves of this type are for a portion of each stroke disengaged from the motion, and this allows the governor to find its proper place while thus free. The valves of a number of high-speed engines were described, including those of the Westinghouse, Willans, and Bellis type, and also the valves of the

Wheelock engine. Double-beat crown valves, which are largely used on the Continent, are considered superior even to Corliss valves for clearance and ease of working. As the friction of an engine is practically constant for any load, the latter is a very important consideration. The paper was illustrated by means of a number of excellent diagrams, and was followed by an animated discussion.

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Do. do. Unsorted	do.	8 0 0	10 10 0
Do. do. White	do.	7 15 0	9 15 0
Do. Swedish	do.	10 5 0	15 0 0
Do. White Sea	do.	10 15 0	18 0 0
Do. Quebec Pine, 1st.	do.	22 15 0	24 5 0
Do. do. 2nd	do.	16 10 0	—
Do. do. 3rd & 4th	do.	7 10 0	10 0 0
Do. Canadian Spruce, 1st	do.	7 15 0	9 0 0
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Do. Honduras	do.	0 0 4 9/16	—
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Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 5 1/8	—
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Do. Quebec	do.	4 12 6	—
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Wainscot, Riga (Baulk)	do.	8 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub.ft.	0 1 9	0 2 7

COMING EVENTS.

Wednesday, March 22.

EDINBURGH ARCHITECTURAL SOCIETY.—Open discussion. Mr. W. N. Cumming will open the debate, Mr. T. R. Paterson moving the previous question.

SOCIETY OF ARTS.—Ordinary Meeting at 8 p.m.

SANITARY INSTITUTE.—(Lecture and Demonstrations for Sanitary Officers).—Inspection and Demonstration at the East London Water Works, Lea Bridge, Clapton, at 3 p.m.

LIVERPOOL ENGINEERING SOCIETY.—Mr. H. C. Darbishire on "Machinery in Use in First-Class Roadstone Quarries." 8 p.m.

Thursday, March 23.

SOCIETY OF ARCHITECTS.—Meeting at 8 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers).—Demonstration of methods of dealing with diseased meat, in the Parkes Museum, at 8 p.m., by Dr. W. A. Bond, M.A., D.P.H.

INSTITUTION OF ELECTRICAL ENGINEERS.—Mrs. Ayrton on "The Hissing of the Electric Arc," illustrated by experiments. 8 p.m.

ROYAL INSTITUTION.—Mr. William Poel on "English Play-houses in the Fifteenth, Sixteenth, and Seventeenth Centuries." 3 p.m.

Friday, March 24.

CENTRAL SCHOOL OF ARTS.—Mr. Starkie Gardner on "Metal Work." 8 p.m.

ARCHITECTURAL ASSOCIATION (Discussion Section).—Mr. L. Jacob on "Arbitration." 7 p.m.

Saturday, March 25.

INSTITUTION OF JUNIOR ENGINEERS.—Visit to the Testing Station of the British Fire Prevention Committee at Hanover Gate, Regent's Park, London. 8 p.m.

ROYAL INSTITUTION.—The Right Hon. Lord Rayleigh on "The Mechanical Properties of Bodies." VII. 3 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers).—Inspection and Demonstration at the Sutton Sewage Works. 3 p.m. Conducted by Mr. C. C. Smith.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Visit to houses, Mortonhall-road and Grange House. Mr. H. O. Farbolton will lead.

Monday, March 27.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers).—Inspection and Demonstration at the Metropolitan Cattle Market, York-road, N. 3 p.m.

INSTITUTION OF ELECTRICAL ENGINEERS.—8 p.m.

Wednesday, March 29

SANITARY INSTITUTE (Lectures and Demonstrations for Sanitary Officers).—Demonstration in the Parkes Museum of Book-keeping as carried out in a sanitary inspector's office, by Mr. A. Taylor. 8 p.m.

TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

AUDENSHAW.—For the pulling down and rebuilding of the "Hansing Gate" Inn, for Messrs. Chesters' Brewery Co., Limited, Ardwick, Manchester. Messrs. J. H. Burton and J. A. Percival, architects, Ashton-under-Lyne:—

J. Lord	£1,380	C. Evans	£1,270
F. Woolley	1,347	J. Thornley	1,285
Fitton and Bowness	1,325	T. Dean	1,256
J. Gibson and Son	1,300	H. Fielding	1,250
E. Marshall	1,298	J. Ridyard, Ashton-	
Z. Pike and Son	1,290	under-Lyne (accepted)	1,225

Plumbing.  
G. Burrows ... £119 0 0 H. Rigley ... £107 0 0  
G. H. Coop ... 111 0 0 P. Wills ... 102 10 0  
H. Hobson ... 107 12 6

BURTON-ON-TRENT.—For the execution of sewerage works, for the Corporation. Mr. G. T. Lynam, Borough Engineer, Town Hall, Burton:—

George F. Tomlinson, City-road, Derby ... £9,442  
BURTON-ON-TRENT.—Accepted for the extension of electric light buildings, for the Corporation. Mr. F. L. Ramsden, engineer, Gas-works, Burton:—

L. T. Varlow, Burton ... £3,324 18 5  
CARSHALTON.—For building dwelling-house and shop at Carshalton, Surrey, for Mr. Arthur Gilham. Messrs. Morgan, Baines and Clarke, architects, Sutton:—

Burrage	£1,457 0	Evans	£1,148 0
Shopland	1,417 0	J. and H. Neale	1,139 0
Potter	1,300 0	Freeman	1,010 0
Blaxton	1,269 17		

CHIPPENHAM.—For the erection of technical schools, for the Education Committee. Mr. R. E. Brinkworth, architect, Chippenhams, Wilts. Quantities by Messrs. Amor and Underwood, of Bath:—

Hayward and Wooster	£7,599 10 0	Downing and Rudmann	£7,071 15 8
Smith and Light	7,330 0 0	William Webb	6,363 0 0
J. Long and Sons	7,290 0 0	George Moore	6,338 5 0

CORK.—For the supply of pipes and specials, to Corporation Waterworks:—

Robert McLaren	£1,421
Stanton Ironworks Company, Limited	1,418
McFarlane, Strang and Co.	1,379
Biggs, Wall and Co.	1,307
Thos. Spittle, Limited	1,287
Henry R. Merton and Co., Ltd., London*	1,260
Chas. Gordan and Co.	1,218

\*Accepted.  
GOSPORT.—For the erection of a grocer's shop, with off-licence and private dwelling-house attached, at the junction of Sydney and Elmhurst-roads, for Messrs. H. J. and W. A. Hobbs. W. H. Fry, Esq., A.M.I.C.E., architect and surveyor:—

Lane and Son	£1,275	Dash	£1,089
Jno. Croad	1,150	Lear	1,065
Johnson	1,091	R. M. Middleton & Co.*	950

\*Accepted.  
HARROW.—For road and sewer, Parkfield Estate, Harrow, for Mr. A. Sykes:—

Dupont	£2,050	Wimpey	£1,799
Neave	1,911	Killingback	1,797
Adams	1,893	Free and Son	1,760

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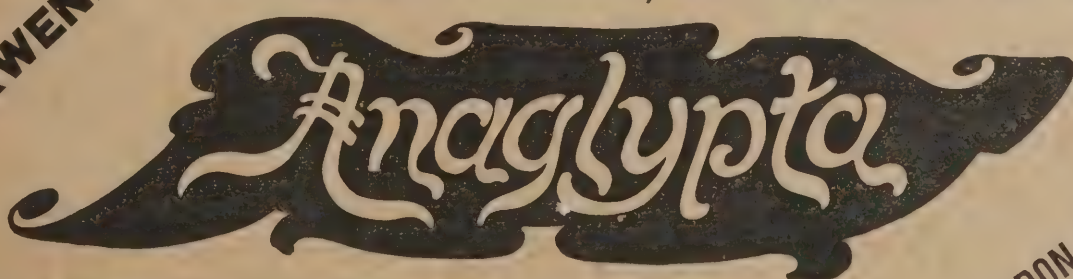
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EGHAM.—For erecting a block of six cottages in Albert-road, Englefield-green, Egham. Mr. James W. Oades, architect, Egham:—  
C. Buckridge ... £1,447 W. Beauchamp ... £1,257  
R. Rowland ... 1,275 G. Banks\* ... 1,147  
\* Accepted.

ILFORD.—For erecting the "Seven Kings' Hotel," Ilford. Messrs. W. G. Bartlett and Son, architects:—  
Todd and Co. ... £9,737 Patman and Fother-  
Parmer ... 8,430 Ingham ... £7,951  
Kilby and Gayford ... 8,330 Smith and Sons ... 7,724  
Bentley ... 8,260 Ashby Bros. ... 7,682  
Hammond and Sons ... 7,675

LONDON.—For the erection of a house at Gunnersbury-lane, Ealing Common, W. Mr. Eastace C. Frere, architect, Lincoln's-inn, W.C.:—  
T. H. Adamson ... £3,935 F. T. Chinchin ... £5,277  
J. Christie ... 5,690 T. Nye ... 5,148  
Kinnimont and Son ... 5,375

LONDON.—For alterations, &c., at No. 49, Russell-square, W.C. for Mr. T. Borthwick. Mr. W. Ernest Hazell, architect, 23, Moorgate-street, E.C.:—  
Stevens Bros. ... £2,012 Bristow and Sons ... £1,696  
Parkinson and Son ... 1,732 C. W. Patter (accepted) ... 1,689

LONDON.—For the erection of a church at Gospel Oak, N.W. Mr. Beresford Pite, architect, Harley-street, W.:—  
W. King ... £5,936 Houghton Bros. ... £5,600  
Coulson and Marks ... 5,720 H. Wall and Co. ... 5,558  
Patman and Fother- ... 5,569  
ingham ... 5,692 Godson and Sons ... 5,566  
G. Neal ... 5,687 F. J. Coxhead ... 5,353  
F. T. Chinchin ... 5,689

LONDON.—For repair of and provision of glass roofs to the stairways of Woolwich Ferry pontoon, for the London County Council:—  
H. Young and Co. ... £1,450 W. Macfarlane & Co. £1,159 10  
LONDON.—For the erection of a factory at Messrs. Malcolm and Co.'s Read Organ Works, Erskine-road, N.W. Alfred Conder, Esq., F.R.I.B.A., architect, Palace-chambers, Westminster. Quantities by Edward J. Paine, F.S.I., 11, Gt. James-street, W.C.:—  
T. H. and R. Roberts ... £4,389 Turtle and Appleton ... £3,870  
L. D. Steed ... 3,992 Stimpson and Co. ... 3,840  
J. Smith and Son ... 3,983 Jas. Chapman ... 3,794  
J. Carmichael ... 3,650 W. Goodman and Son ... 3,693  
J. Groves and Sons ... 3,938 Jno. Greenwood ... 3,568  
W. Akers and Co. ... 3,912 E. Toms ... 3,549

LONDON.—For erecting house and shop, Nile-street, Hoxton, for Mr. G. Rutter. Mr. Baines, architect:—  
C. Deering and Son ... £1,630 Wm. Shurmur ... £1,593  
J. Jarvis and Son ... 1,623 W. V. Goad ... 1,581  
S. J. Scott ... 1,623 Battley, Sons & Holness ... 1,487  
H. L. Holloway ... 1,600 Chas. King ... 1,362  
LONDON.—For erecting a factory at Friar's-court, South-  
work, for Messrs. Harmsworth and Co., Ltd. Mr. H. O. Ellis, architect:—  
Patman & Fothering- ... £4,561 B. E. Nightingale ... £3,985  
ham ... 4,297 W. Shurmur ... 3,829  
J. Outhwaite & Son ... 4,297 Kilby and Gayford ... 3,534

TIVERTON (Devon).—For the erection of hospital buildings at Tiverton, Devon, for the Tiverton Hospital Board. J. Siddalls, architect. Quantities supplied:—

	A. M. Coles.	J. Deering & Sons.	S. Manning.	R. Grater & Son.	R. Grater & Sons.	F. Wood.*
Section No. 1.—Administrative Block	£1,484 10 0	£1,241 10 4	£1,219 16 6½	£1,151 10 0	£1,060 0 0	£1,111 18 0
Section No. 2.—Pavilion No. 1.	1,750 0 0	1,398 1 7	1,360 5 8½	1,330 15 0	1,187 0 0	1,235 18 6
Section No. 3.—Emergency Pavilion	1,073 0 0	814 9 8	796 13 5	786 5 0	731 10 0	771 15 10
Section No. 4.—Laundry Block	913 0 0	735 5 9	713 18 9	663 5 0	614 0 0	612 4 0
Section No. 5.—Road Sewers, Water Supply	850 0 0	1,201 2 0	1,152 4 2	1,152 10 0	1,132 10 0	984 16 2
	£6,070 16 0	£5,388 9 4	£5,242 18 7	£5,084 5 0	£4,725 0 0	£4,716 12 6

A. M. Coles, of Plymouth; all the rest of Tiverton.

\* Accepted.

LONDON.—For erecting a house and shop, Nile-street, Hoxton, for Mr. Geo. Rutter. Mr. Geo. Baines, architect:—  
S. J. Scott ... £1,467 Wm. Shurmur ... £1,397  
C. Deering and Son ... 1,460 W. V. Goad ... 1,395  
H. L. Holloway ... 1,399 Battley, Sons & Holness ... 1,290  
J. Jarvis and Sons ... 1,395 Chas. King ... 1,179

LONDON.—For re-building warehouse premises in Foun-  
tain-court, Aldermanbury, E.C. Mr. Howard Chatfield  
Clarke, 63, Bishopsgate-street Within, E.C., architect:—  
Brown, Son & Blom- ... £11,571  
field ... £12,118 E. Lawrence & Sons ... £11,535  
Woodward and Co. ... 11,901 B. C. Nightingale ... 11,535  
Hall, Beddall and Co. ... 11,875 Clarke and Bracy\* ... 11,247  
\* Accepted.

LONDON.—For the erection of business premises in  
Denman-street, London Bridge, S.E. Mr. J. W. Brooker,  
architect, London Bridge-approach:—  
Batley, Son, and Hol- ... £8,741  
ness ... 29,497 Shepherd ... 8,668  
Kick ... 9,340 Edwards and Medway\* ... 8,667  
Burman and Son ... 8,997 \* Accepted.

LONDON.—For an underground convenience, the  
Triangle, Rye-lane, Peckham, S.E., for the Camberwell  
Vestry. Mr. Wm. Oxtoby, engineer. Quantities by Mr.  
Jno. R. Hunt, Bridge House, 181, Queen Victoria-street,  
E.C.:—  
Dolman and Co. ... £2,832 T. G. Sharpington ... £2,620  
The Water Carriage ... 2,850  
Engineering Co., Ltd. ... 2,789 G. Jennings ... 2,350  
Donlon and Co. ... 2,729 Cooke and Co. ... 2,200  
The General Builders, ... 2,635 G. B. Davis ... 2,060  
Limited ... 2,635 Finch and Co. ... 2,034  
\* Accepted.

LONDON.—For erecting the "Boleyn" Tavern, Upton  
Park. Messrs. Shoebridge and Rising, architects:—  
H. L. Holloway ... £14,983 G. Parker ... £14,791  
Deering and Son ... 14,864 Kilby and Gayford ... 14,436  
J. Carmichael ... 14,859 Lascelles and Co. ... 14,329  
W. Shurmur ... 14,786 Edwards and Medway ... 14,144  
J. Anley and Son ... 14,782

MIDSOMER NORTON.—For erection of Elementary  
Schools at Midsomer Norton, Somerset, for the National  
School Managers, to accommodate 300 children. Mr.  
William F. Bird, M.S.A., &c., architect, Midsomer Norton.  
Quantities by the architect:—  
Hughes and Weeks ... £3,887 0  
T. H. Brown ... 2,565 J. H. Tovey ... £2,000 0  
Joseph Bird ... 2,150 H. E. Perkins ... 1,998 10  
A. W. J. Catley ... 2,150 Coles Bros ... 1,960 0  
Wm. Tovey ... 2,125 0 Valentine Keeling ... 1,923 0  
Architect's estimate, £2,005.

SANDBACH.—For the erection of workhouse infirmary,  
Arlod, for the Congleton Union Guardians. Mr. A. Price,  
architect, Elsworth, Sandbach. Quantities by architect:—  
Cooke ... £5,996 Worrall ... £4,946  
Bousfield ... 5,800 Stringer ... 4,895  
Barratt and Gibson ... 5,680 Smith ... 4,735  
Ryland and Son ... 5,150 Birchall Bros., Mid-  
Stebos and Son ... 5,123 dlewich\* ... 4,650  
Goodwin ... 5,100 \* Accepted.

SOHAM.—For building new house and stables for Mr.  
C. Morbey. Mr. John Flatman, architect, Newmarket.  
Quantities by Mr. Wm. Wren, Cambridge:—

	House.	Stables.	Total.
Shillitoe ...	£7,800	£1,450	£9,250
Wm. Saint ...	6,790	1,190	7,980
H. J. Linzell ...	6,180	976	7,157
Kerridge and Shaw ...	5,999	998	6,992
J. G. Cowell ...	5,965	958	6,923

SOUTHAMPTON.—For building licensed house and two  
private houses adjoining Bellemoor Estate, Shirley, for  
Messrs. Wm. Cooper and Co., Limited. Mr. William Bur-  
rough Hill, architect, Southampton:—  
Jenkins and Sons ... £1,974 J. J. Udall and Co. ... £1,877  
Playfair and Toole ... 1,897 Henry Cawte\* ... 1,772  
H. Stevens and Co. ... 1,877 \* Accepted.

STOCKTON-ON-TEES.—For erecting new premises for  
Messrs. D. Hill, Carter, and Co. Limited, Stockton-on-Tees.  
Mr. Eugene E. Cielhan, architect, St. Nicholas-chambers,  
Newcastle-on-Tyne:—  
Joseph Howe and ... Crages & Benson,  
Co. ... £2,900 0 0 37, Hume-st.,  
John Davison ... 2,605 17 11 Stockton-on-  
Albison Bros. ... 2,600 0 0 Tees (accepted) £2,420 0 0  
R. Blackett and ... G. T. Manners ... 2,345 0 0  
Son ... 2,595 0 0 A. Atkinson and  
Perks and Son ... 2,434 0 0 Co. ... 2,232 11 9

SUTTON.—For building twelve houses, and dwelling,  
house and shop, at Sutton. Messrs. Morgan, Baines, and  
Clarke, architects, Sutton:—  
General Builders' Sup- ... W. Smith and Son ... £5,990  
ply, Limited ... £8,400 Blaxton ... 5,510  
Potter ... 6,936 Freeman ... 5,410  
Shopland ... 6,700 Burrage ... 4,896  
Wells ... 6,087 Gregory ... 3,650  
J. and H. Neale ... 5,990

WALLINGTON.—For the erection of three cottages at  
Park Gate-road, for Mrs. Chapman. Messrs. R. M. Chart  
and Son, architects, Union Bank-chambers, Croydon:—  
S. J. Evans ... £1,460 Huntley Bros. ... £1,220  
G. Burrage ... 1,450 Card ... 1,110  
E. J. Burnand ... 1,230 Howe and White\* ... 1,100  
\* Accepted.

WALSALL.—For the erection of Board Offices, Pleck-  
road, for the Union Guardians. Mr. H. E. Lavender,  
architect and surveyor, Walsall:—  
Hopkins ... £3,906 Tildesley ... £3,409  
Hughes ... 3,690 W. Wistance\* ... 3,497  
Mallin ... 3,649 Hemming ... 3,392  
Gough ... 3,590 Craddock ... 3,285  
Inslay ... 3,590 Hall ... 2,930  
Guest and Sons ... 3,590 \* Accepted.

WALTON-ON-THAMES.—For the construction of a  
brick groyne, near "Pier Hotel," for the Coast Development  
Company, Limited. Mr. H. W. Gladwell, surveyor, 5, Cres-  
cent-road, Walton-on-the-Naze. Quantities by the sur-  
veyor:—  
G. Double ... £2,030 Mackenzie, Clacton-  
Moron and Son ... 1,140 on-Sea\* ... £1,120  
\* Accepted.

[Surveyor's estimate, £1,050.]

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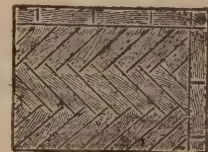
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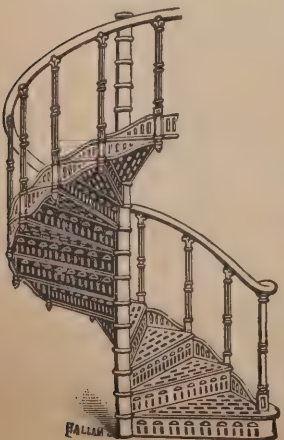
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## METHODS USED IN PRODUCING TERRA-COTTA MOULDINGS.

BY WILLIAM REID.

THE term "terra-cotta," as generally understood, is, perhaps, somewhat misleading, for the general acceptance of the term has reference to hand-made work only in contra-distinction to work produced by mechanical means. This is more particularly noticeable when referring to a brick building, and remarking on the amount of "terra-cotta," there is in it, the allusion generally applying to those parts only which are more or less covered with enrichment. But in reality any earth that has been fired is terra-cotta. The term is derived from the Italian, meaning cooked earth, and the French *terre cuite* has the same significance. In the finer classes of earthenware, when, for glazing purposes, it is necessary to fire the goods twice, the first firing is called "biscuit," which is really the same as the French *bis-cuite*—twice cooked.

In the few examples illustrating this article both bricks shaped by hand and by machinery are dealt with, though the latter are generally

detachable, so that, when worn or broken, they may be easily replaced. The wearing on the knives is much greater towards the mouth than at the other end on account of the increased resistance of the clay at this part.

The clay issues in one continuous strip from the die over the rollers and on to the cutting table, where a series of vertical wires will be seen, placed at regular intervals apart, these spaces being equal to the width of a brick. By pulling the handle H the vertical plate P is drawn across the cutting table, pressing the strip of clay against the wires, and so cutting it into bricks. The clay does not issue very rapidly from the die, so when a length equal to the range of wires has been made, this is cut and pushed by hand on to the cutting table, thus allowing a clear space between the table and the die for the issuing strip of clay to keep moving. If reference is made to the drawing (Fig. 2), an upright wire stretched on an iron bow will be noticed between the first and second rollers next to the machine. This is pulled across by the handle shown on the opposite side, cutting a portion of the strip of clay already described. Perhaps it may not be amiss to mention here that all ordinary bricks made by this machine are termed "wire cut," deriving their name from the manner by which

the required brick. Into this box the brick is put, and a top plate of the same shape and fitting exactly into the box is set in motion, descending on the brick with a force of between twenty-five and thirty tons, stamping it with the manufacturer's name, consolidating the particles of clay in the brick, and improving its general appearance. Mitres or angles—that is, when the moulding has to be constructed so as to turn a corner—must be made by hand. This is simply done by cutting two bricks, roughing the joining parts with a fork, damping with a wet sponge, and sticking together.

The brick is now finished, and is wheeled away to the drying shed to become thoroughly dry before being fired. From this brief description it may be gathered that it is quite possible to manufacture a great variety of mouldings by mechanical means, and hence there is no difficulty in understanding how it is that the type of mouldings generally found in the cheaper class of brick buildings presents a remarkable similarity in whatever part of the country they may be found. Naturally, when an architect is limited as to the cost of a house he will select from the catalogues of brick manufacturers such ornamentation as is within the range of the cost allowed, and

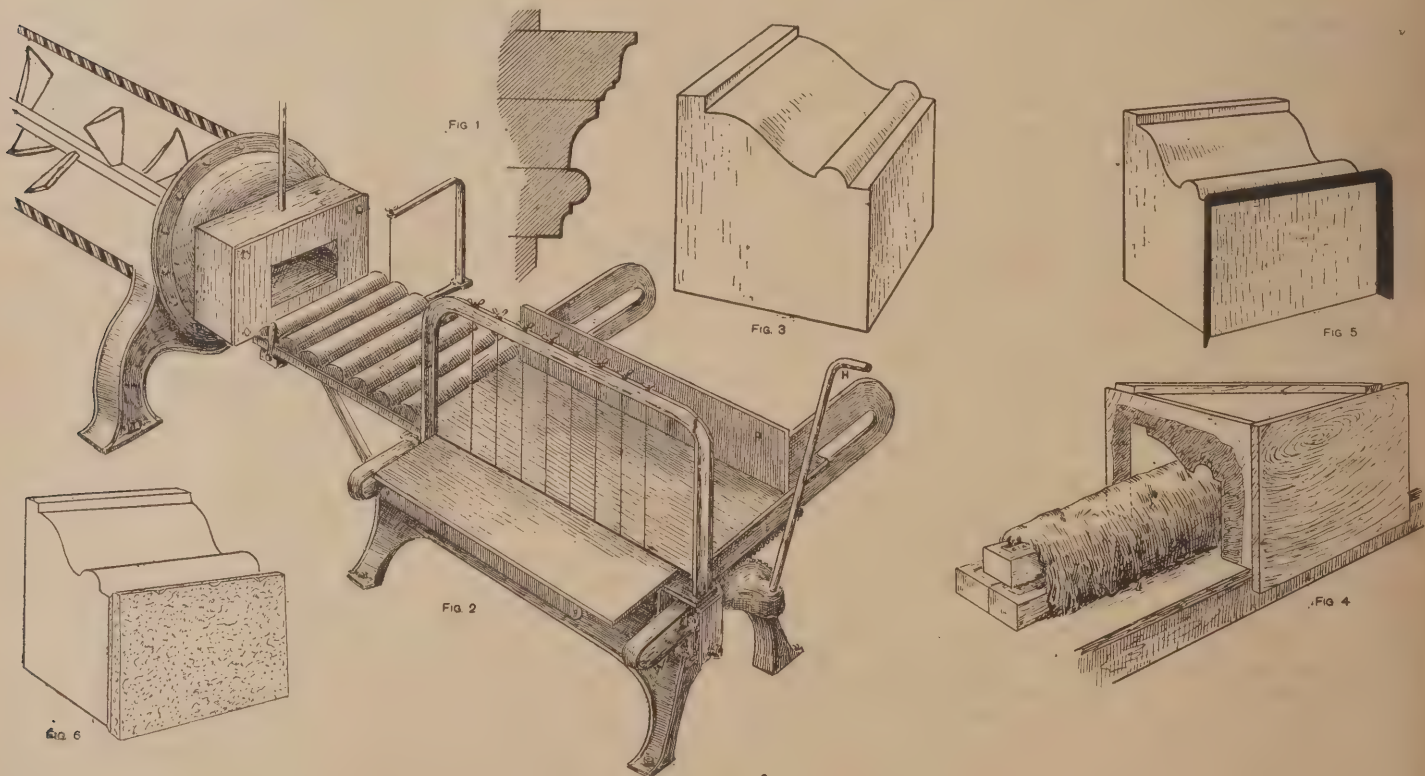


FIG. 1. STRING COURSE OF MACHINE-MADE MOULDINGS. MOULDING TO BE MADE BY HAND.

FIG. 2. MACHINE FOR MAKING WIRE-CUT BRICKS.

FIG. 3. EXAMPLES OF

FIG. 4. APPARATUS FOR MAKING PLASTER MODEL OF MOULDING. FIGS. 5 AND 6. DIFFERENT STAGES OF PLASTER MOULD.

understood as "moulded bricks." The string course (Fig. 1) is composed of a series of 3in. moulded bricks, all of which have been made by machines. For the present merely a rough suggestion of the machinery employed in their production can be given, but sufficient may be said to give a fair idea of the process. When the clay has been properly tempered, that is, thoroughly ground and mixed with water till the mass is in a workable state, it is pressed by means of a screw adjustment through an aperture—called the die—formed to the shape of the required moulding. This die consists of a wooden framework fitted to the mouth of the pug—the apparatus containing the prepared clay—and illustrated at Fig. 2. In the drawing the wooden die itself is not seen, as it is fixed within the outer framework of iron, only the little piece that has been added to form the particular shaped brick—a bull nose—is visible. The pug is given in section, showing the screw arrangement of the knives which force the clay through the die. These knives are made

they are made. All dies are lined with good moleskin, the object of which is to give a fine surface to the clay, and also to prevent wear and tear of the die itself. This would not take long in doing, for, it can be very readily understood, that the continual friction of clay, more or less coarse, over a wooden surface, or even over a metal one, would not take long to wear it out of shape. The moleskin not only protects the die, but acts, as already said, in putting a face on the clay. The moleskin itself will, of course, be as susceptible to wear as any other material, but it can be readily replaced when worn out, and, to prevent undue wear, the inner face of the die is kept continually lubricated by a minute stream of water, which enters by the pipe shown on the drawing (Fig. 2). In continual use the moleskin may last from three to four days.

This completes the first process of moulded bricks, the next being their passage through a press which gives them a final finish. This press is either worked by steam or hand power, and contains a metal box made to the shape of

make the most of what can be had at a much less price than if he were to design string coursing of his own, the result of which would be that all such work would have to be hand made from plaster moulds.

In most firms the making of terra-cotta from plaster moulds is the work of two distinct branches of skilled labour. The first is the model and mould maker, the second the presser and finisher, and these, in large works, are again subdivided. The model-maker, or the one who makes the model or pattern from the architect's design, confines himself to this branch alone. When a model has been made the mould maker takes the model in hand and makes the mould. The mould is then taken to the presser, who fills it with clay, passing on the clay pressing to the finisher, who puts the necessary finishing touches to the work. To more clearly understand these different operations let us begin at the beginning when the draughtsman has handed the model-maker a full-sized sketch of the required model. This drawing, by the



way, is made to a specially constructed scale. Clays contract both during drying and firing and different clays will have different contraction. Hence it is necessary to ascertain beforehand the difference in size between a mass of clay when in its soft and ductile state and the same clay after being converted into terra-cotta. This shrinkage may vary from  $\frac{1}{4}$  to  $\frac{1}{2}$  of an inch to the inch, and corresponding allowance must be made when constructing the scale. Thus, if the shrinkage is  $\frac{1}{4}$ , a 2ft. clay rule will measure a length of twenty-six standard inches. The draughtsman, then, makes his drawing from the architect's design using this enlarged scale. From this drawing the model-maker makes his model. It must be at once apparent, however, that the process of making a model will vary with different classes of models; hence the description given here of how the models, and a moulding such as is illustrated at Fig. 3, must be assumed as being typical only of this class of work. An outline of the moulding is first traced on a piece of sheet zinc. This is cut out with scissors and tacked on to a framework called a "horse" in the manner shown at Fig. 4. For heavy mouldings the model is not made of a solid piece of plaster, which would be both needless and wasteful. A core of bricks or clay is usually formed in the manner shown in the illustration, and it will be seen that, by pouring the mixed plaster over this and repeatedly passing the horse over the plaster, a moulding will be formed of the required shape. When this is done the moulding may be taken off the bench, the top of which is usually a heavy slate slab, and the bricks and clay forming the core picked out. The model has then only to be sawn to a convenient length to be ready for the mould-maker.

This craftsman sets the model on his bench and begins work by laying a narrow strip of clay along the edges of the face he intends to commence with. This is shown at Fig. 5. The space surrounded by the clay wall is then thoroughly greased, the grease being simply soft soap which has been boiled in water or boiled in oil. The plaster is then applied and trimmed up to the shape shown at Fig. 6.

(To be concluded.)

## THE PLASTERERS' DISPUTE.

NOTHING very striking has happened since our last report in connection with the plasterers' dispute. It seems to be going on without any attempt on either side to bring it to a head. On the 14th inst. the twenty-three foreign operatives who had been imported from Brussels, were induced by Mr. Hennessy and his executive to throw up their engagements, and return to their native lands. It is stated that they came over to England under a misapprehension as to the real state of affairs, misrepresentations having been made to the unions of which some of them were members. They were promised good pay, but were to work fourteen hours instead of nine. To send them back cost the Union over £70. At the beginning of last week, a circular was issued by the Council of the Masters' Association intimating that they had decided to summon district or local meetings of master builders "for the purpose of a thoroughly strong organisation throughout London, for dealing with the present dispute." A meeting of the Central Association of Master Builders of London was held, and lasted some three hours, but it was adjourned until the end of the week, and no statement of what had transpired was given to the press. It has been ascertained, however, that a resolution was passed pledging the employers to continue the contest until the Union promised to discontinue unreasonable practices.

Mr. Deller also issued a circular at the beginning of last week, which stated that in the fifty-six districts more or less affected, the Plasterers' Association has upwards of 10,000 members, and of that number only 2415 had reported themselves locked out; nearly 500 of these have, however, found work elsewhere, and he stated that the number of men unemployed was decreasing each day. He also stated that

the Amalgamated Society of Engineers was taking a vote of its members as to whether they were prepared to levy themselves on the plasterers' behalf, and whether the subscription should be one penny or twopence per week. In either case the amount would reach a good sum, as the Amalgamated Engineers are over 80,000 strong.

The Secretary of the London Building Trades Council wrote to an evening paper stating that he was desired to ask that all executive councils, or managing bodies, connected with the building trade will adopt such measures as will prevent their members from being induced to assist the employers by executing, or assisting in executing, any portion of the work which would, under ordinary circumstances, and were no dispute existing, be done by members of the National Association of Operative Plasterers.

At the end of last week the position had undergone no change, and so far as can be judged from appearances at present, the dispute may go on for weeks. On the 16th inst. the officials of the Plasterers' Union stated that although the number of men locked out had increased, yet, as many had found employment with non-federated masters, only about 2000 men would remain on the funds of the union; but the amount of strike pay would exceed that paid out last week, as most of the men will receive a full week's pay.

At Newcastle, out of fifty-seven men who were on the books of the Society on Tuesday last week, nine had accepted situations offered in Glasgow and other parts of Scotland. At a meeting of the Yorkshire Federation of Building Trade Employers, held at Scarborough on the 16th, reports from various districts handed in were considered satisfactory. The Scarborough branch of the masters' association is the only one which has not locked out its men. The masters say that most of the plasterers in that town are bricklayers, and there are only twenty-three plasterers in the town who are Union men. A number of men have left Leeds, and obtained work in other towns. A Birmingham paper says that so far as that city is concerned the dispute appears to be gradually dying out. It is pointed out that in Birmingham the points objected to do not arise in any serious form, and consequently it is thought the lock-out will soon be at an end.

In Liverpool it seems that of about 500 men originally affected only about 100 are now out of employment, and a good many non-society men have come out in the meantime in sympathy with the others.

At a meeting of the executive of the Central Association of Master Builders, held at the offices in Bedford Street, Strand, last Friday, the Secretary stated that he was unable to give any information as to the policy the employers intend to pursue. Mr. Deller says that in addition to the strike pay of 15s., each member locked out will receive about 12s. extra from the special levy fund. According to the returns issued by the Union on Saturday last, close upon 3000 men have been locked out, and about 1800 have signed on for strike pay. The special levy is expected to realise £1500 every week, and the Union officials state that this sum will be sufficient to provide for all the men who are likely to be thrown out of work.

Altogether matters are not in a very exciting condition, and most likely a few hours' quiet conference between the employers' and men's delegates would settle the dispute. It seems a pity, with the building trade so busy, that such a conference should not be held at once.

**The Masons at Penrith** struck for an increase of wages from 7½d. to 9d. per hour, but have accepted 8½d., and returned to work. The builders' labourers are now on strike for an advance from 4½d. to 6d. per hour.

**Paviors' Wages.**—At a recent meeting of the Boyton District Council a letter was read from the Secretary of the Operative Masons' and Paviors' Society, applying on behalf of the paviors of the Council for an increase in their wages. It was unanimously agreed to advance the paviors' wages from 8d. to 8½d. per hour as requested.

## Trade and Craft.

### VETROPAKE.

This material is a new wall decoration which, it is claimed, has the advantage over fresco of being executed in a permanent manner, and brings into play all the charms and delicacy of the artist-work, while the breadth and brilliancy of mosaic is preserved. Vetropake is made of a special plastic body and moulded into the required shapes to allow of being dealt with in larger pieces than the tesserae used in glass Mosaic, enabling more detail and delicacy to be put into the flesh, for instance. The work is fired at high temperature and fixed *in situ* in cement of a special character. The Inventors of this method are Messrs. C. Woolliscroft and Son Limited. For the purpose of lining unsightly walls at a comparatively low cost they have also invented a special surfaced tile called "Fresco" Tiles, these tiles being unlike the ordinary glazed tiles in so far as they present a dead mat surface. They can be produced in numerous colours and to any design. They can be cleaned down at any time with water, as their colour is fired. They are fixed upon the wall in cement. The firm have also made arrangements for undertaking and carrying out church decoration in stained glass, carving, glass mosaic, ceramic mosaic for flooring, sculptured decoration and mural decoration, both in tempera and in oil (where conditions are suitable to the latter). Iron work in Screens &c., will also be dealt with.

### AN AMALGAMATION.

We are asked to announce that the two businesses of Hendry and Pattisson, of Marlborough Mews, Oxford Street, Heating and Ventilating Engineers and Makers of "D. O. Boyd's" patent warm air grates and stoves, and of E. Farrar and Co., late of 69, Berners Street, W., casement makers and art metal workers, have been amalgamated and incorporated under the Companies Acts, and will henceforth be carried on jointly under the style of Hendry and Pattisson Limited. The works and offices of the company will be at 4, Marlborough Mews, Hills Place, Oxford Street, London, W., to which address all communications should be sent. We are informed that Mr. John Hendry will be the managing director, and Mr. Pattisson and Mr. Farrar have also joined the board. This is evidence that both businesses will receive the care and attention of those who have the largest stake in them.

## Masters and Men.

**The Annan painters' strike** is settled, and the advance of ½d. per hour is to take effect from May 1st.

**Paisley Foundry Labourers have struck** because they are not satisfied with the quantity of refreshment allowed them.

"**Union Smashing in Sweden**" is the title given to the following paragraph in the "Daily Chronicle" of March 15, sent by their Stockholm correspondent:—"Our Swedish Radicals are fighting for the right of combination. The trade unions are threatened by the employers, especially in the northern timber trade districts. The sawmill owners have given notice to their workmen to leave their union or their situations. The employers say this action is not directed against the right of combination, as they will allow their hands to form local unions, but against the Socialist leaders of the present union. This is nonsense, because a local union at one place not federated with others can never be strong enough to enforce any of its demands. The fact is that the mill owners are afraid of the increasing strength of trade unionism in this country. An interpellation of the Government on the treatment of the unionists received no satisfactory answer. A big lock-out is not unlikely."



## Builders' Notes.

**The Conservative Club, Prestwick,** now in course of erection (Mr. James A. Morris, of Ayr, architect), is being ventilated by means of "Cousland's Improved Climax" patent, direct-acting, invisible roof ventilators, supplied by the "Climax" Ventilating and Heating Co. Ltd., 93, Hope Street, Glasgow.

**Prices of Tiles.**—Messrs. Maw and Company Limited, Benthall Works, Jackfield, Shropshire, announce that the prices of tiles have been advanced as follows:—Glazed earthenware, 6d. per yard; plain enamels, 9d. per yard; rough surface enamels, 9d. per yard; one colour embossed, 1s. per yard; painted majolica, 1s. 3d. per yard; plain floor tiles, 3d. per yard; white vitreous, 9d. per yard.

**The Derby and District Master Painters' Association's** held its annual dinner on the 11th. Mr. Geo. Potter (president) occupied the chair, and Mr. Marshall (Nottingham), in proposing "Success to the Derby and District Master Painters' Association," said he had great pleasure in meeting the members from Derby. Speaking of their association, he was pleased to find it improving, and at the same time growing. The object of the Association was to help each other, and do away with unfair practices. Not so long ago one firm tendered for some work, offering to carry it out for £600, while another firm tendered £300 for the same. He did not know whether one man would have worked at a tremendous profit or the other at a loss, but the association existed to put down that kind of thing. He went on to compare the trade in Derby and Nottingham, and very cordially wished the Derby branch success. The chairman responded, and other toasts followed.

**Building Trades Social Assembly.**—The first annual assembly of the building and kindred trades of Stonehaven was held in the Town Hall on Friday evening. There was a very large gathering. Dancing commenced at eight o'clock, and at eleven o'clock the company adjourned to the Upper Hall, where supper was served. Commissioner Ross occupied the chair, and gave the toast "The Town and Trade of Stonehaven." In regard to the building trades and the number of buildings, he remembered when evidence was taken about bringing a railway to Kittywake, it was stated that the rate of building in Stonehaven was about three houses in five years. To-day they built as many every month almost. No doubt there was a great future for Stonehaven, for very few places had its beauty and natural adaptability. Mr. Gregory, in reply, said that he thought they had reason to congratulate themselves on the trade that had been done for the last ten or twelve years. Their Chairman had done a good deal in building houses, but there was a class of houses he had neglected—namely, workmen's houses—and he might turn his attention to that.

**Dispute at the Perth Water Works.**—Several meetings of the Water Works Committee of the Perth Water Commission have been held to consider the concrete work contract at the new Engine-House. A letter from Messrs. L. and W. Macdonald, Inverkeithing, intimating that they offered to finish the Water-House to the Commission's entire satisfaction, and to make a hole outside the wall for the pumps working for the sum of £135, led to considerable discussion at one of meetings. The committee were of opinion that Messrs. Macdonald were not entitled to any additional sum for carrying out their contract according to the specifications, and they accordingly resolved to decline to entertain their offer, and instructed the Clerk to intimate to them that unless they proceeded with their contract to the satisfaction of the architect within three days, the Commissioners would carry out the work themselves, reserving all their claims against the contractors. Mr.

James Smart, architect, stated that since restarting the work, with the exception of making a hole outside the walls for the purpose of pumping, nothing had been done, and that there was only one man on the job. He further reported that the contractors refused to take out the bottom of the concrete work, which he had condemned as unsatisfactory. The meeting thereupon resolved to take the work out of their hands, and gave the architect instructions to give the contractors three days' notice, according to the conditions attached to the specifications. The contractors' solicitors have written protesting against the concrete work being taken out of their client's hands, to which the Commissioners have replied that they were obliged to do so, owing to their client's refusal to complete the work, and they hold the contractors liable for all the loss and damage they have been put to. It was also reported that workmen had been employed to complete the contract, under the supervision of the architect, and that the work is now rapidly proceeding.

**Claim for Damages for Personal Injury.**—At the Norwich County Court, on March 13, William Edwards, carter and publican, Norwich, sued Mr. O. H. Rice, builder, Norwich, for damages for personal injury, the claim being for £50. Mr. Reeve, for the plaintiff, said the action was brought to recover damages sustained by the plaintiff on January 21st, through the alleged negligence of the defendant in not constructing a gable end of a house with proper care. On January 20th and 21st, this gable was being built up while a strong wind was blowing. Edwards contracted with the defendant to carry bricks for him for the purpose of the erection of the house. On January 21st he carted three loads of bricks there; when he delivered the fourth he was told by the foreman, the defendant's brother, to move his cart to a particular part of the ground, near the gable end to unload. Whilst that was going on the top part of the gable was blown down, or fell down, on the plaintiff, striking him on his head, and injuring his eye and thigh. A man of the name of Cawdron was also contracted with to deliver bricks, and delivered a load just before the plaintiff's fourth load. Cawdron noticed the gable moving with the wind, and actually called the attention of the foreman to the dangerous position in which it was standing. The gable was not in any way shored up by scaffolding, as would certainly have been a prudent step. Plaintiff was called, and bore out Mr. Reeve's opening. Dr. Mills described the injuries which the plaintiff had received, which were of a rather serious character. Mr. Eversley, for the defendant, urged that the claim was greatly exaggerated, and in any view of the case the plaintiff was not entitled to recover anything like the amount set down. As regards the general health of the plaintiff, he was quite sure, he would soon recover. A brick carter's cart was a pretty tough object, and the fall of a few bricks upon it would not hurt it very much. At any rate, only £1 had been asked for damages. Mr. Eversley commented on particulars of the claim, and submitted that there had been no negligence on the part of Mr. Rice himself or of his servants, but that the accident was due to the sudden increase of the wind. As he would prove, the wind caught a number of deals, and hurled them against the interior of the gable, and so brought it down. Men who had been at work on the erection of the house, testified that they observed nothing in the appearance of the gable to show that it needed to be shored up. Mr. Stowers, builder, of Sprowston Road, said the cause of the accident was a sudden gust of wind, which blew some deal boards from the scaffolding around an adjacent chimney in course of construction. These first hit the open rafters of the roof of the house, and then the gable, causing the latter to fall outwards. The defendant's brother, who was the foreman, denied that his attention was called to the shaky condition of the gable. His Honour awarded judgment for the plaintiff, with £22 and costs.

## Surveying and Sanitary Notes.

**The Lincoln City Council** has resolved to relay the carriage way in Melville Street with granite setts, at a cost of £1070.

**Lichfield City Council** applied to the Local Government Board for a further loan of £4000 for works of sewage disposal. An inquiry was held on Tuesday last week respecting the application, at which the inspector said that the Local Government Board did not like works to be undertaken and partially carried out before the loan for them was sanctioned, and the Corporation must be prepared to face the responsibility of making alterations to meet the Board's requirements.

**Cragie Outfall Sewer.**—The measurement of the work executed by Mr. Girrity, contractor, in connection with the construction of the outfall sewer for the Craigie district has now been considered. The Burgh Surveyor explained that he had tested the work, and caused several defective parts to be properly executed by the contractor, and that he was now satisfied with the execution of the contract; and the Work and Paving Committee of the Police Commission, in accordance with a recommendation of the Sub-Committee, have ordered payment of the balance of £313 12s. 7d. due the contractor.

**An Insanitary Area.**—Dr. A. Wynter Blyth, medical officer of health for Marylebone, in his last annual report, states that repeated notices, repeated summonses, and frequent inspections, having failed to effect any permanent improvement in the insanitary area comprising Nightingale Street, Stamford Street, and part of Salisbury Street, Lisson Grove, Marylebone, the local Vestry, at his instance, have urged the London County Council to deal with the area under part one of the Housing of the Working Classes Act. The area is about 7500 square yards; the majority of the houses have only four rooms; and the rateable value of the property is £800.

**Southport Sewage.**—Mr. James Mansergh has submitted a report to the Southport Corporation in reference to the sewage disposal of the borough. In a previous report he set out a scheme of chemical precipitation, but at the same time called attention to the bacterial methods of sewage treatment. After an investigation into the present position and development of the bacterial process in England, Mr. Mansergh now states that he has no hesitating in recommending it to the Southport Corporation for adoption. The treatment he advises is that known as Mr. Dibdin's, for the adoption of which he considers the conditions at Southport are very favourable. The sewage is domestic in character, and there are no injurious manufacturing wastes to be dealt with, whilst the outfall at Crossens discharges into the sea, and twice a day the tide covers the outlet. If therefore the floating and suspended matters are all practically taken out of the sewage, and the organic constituents changed into forms which can be dealt with harmlessly by fully-oxygenated water like that in the sea, Mr. Mansergh considers sufficient would have been done. In a previous report Mr. Mansergh recommended a pumping plant at the Crossens outfall. This proposal he retains in addition to the bacterial process. The total cost, with five beds, is estimated at £54,000, and annual working expenses, £825. Omitting the five beds, and the cost is given as £35,000, and annual working expenses £775. The cost of the scheme of chemical precipitation was estimated at a capital expenditure of £32,200, and the working expenses at £2240 per annum. —The sewerage committee, who have dealt with the report, state that whilst they regard with favour the bacteriological process of sewage treatment, they do not feel warranted in recommending the council to adopt the system until an opportunity has been afforded of seeing it in operation on a large scale.



## Engineering Notes.

**Electric lighting on a large scale** is to be adopted by the Leeds City Council, who intend to spend £150,000 for this purpose.

The electric lighting of Calcutta will soon be an accomplished fact. A central station, with engines of 1500 horse-power and dynamos, is nearly complete.

**Electric Tramways for Huddersfield** formed the subject of a lecture recently delivered by Mr. T. H. Moore to the Liberal Club. Mr. Moore proposed their adoption in the town.

**Electricity Works for Barnsley.**—The foundation stone of the new works in Beckett Square was laid on March 10th. The electrical plant has been designed by Mr. Thomas L. Miller, of Liverpool, and the buildings were designed by Mr. J. H. Taylor, Borough Surveyor. The contracts for the erection of the buildings amount to £3080, and those for the plant total £18,931.

**Electric Lighting and a Floating Bath.**—The York City Council has decided to expend £2000 in laying a cable in Micklegate, and

the city surveyor is to be instructed to prepare and carry out the provision of a floating bath in the River Ouse, between Holgate Beck and Acomb Landing, at a cost not exceeding £350.

**Electric Light for Canterbury.**—The municipal electric installation at Canterbury was opened on March 10th by the Mayor. Just under £20,000 has been spent on the scheme, and an additional £3000 upon a refuse cremator in connection with the works. A further extension to cost £12,000 is in contemplation.

**Birmingham Tramways Company** purpose adding to their rolling-stock open cars for use on the cable route. Two cars are first to serve as an illustration of the manner of their working. The cars will be single "deckers," or, in other words, the roof seats will be abandoned. Entrance to the new cars will be obtained from a side step running the whole length of the car instead of the end door as at present. With the exception of the end windows, which have been erected to minimise draught, the whole of the seats are to be open to the road, but the sides are to be provided with collapsible guards, and the one on the inner, or right side in the direction in which the car travels, will be kept raised during the journeys. Further protection from weather will be provided by means of blinds.

**Liverpool to Manchester in Eighteen Minutes.**—The Lord Mayors of Manchester and Liverpool have consented to join a committee which is being formed among representative men of these two cities for the purpose of investigating the engineering and commercial possibilities of the Lightning Express Single-rail Railway between Liverpool and Manchester, at a speed of ninety miles per hour, which has been proposed by Mr. F. B. Behr. Both in Liverpool and in Manchester great interest is being shown in Mr. Behr's project. Twenty-five of the most influential citizens of the latter city joined in signing a petition to the Lord Mayor, in which they stated that, having examined Mr. F. B. Behr's scheme, they considered it was of sufficient importance to the commercial community of Manchester, as well as to the public in general, to deserve a careful and independent examination. Mr. F. B. Behr explained his scheme for the New Single-rail Lightning Express Railway before the Liverpool Chamber of Commerce on January 12th last. He entered fully into all the engineering and commercial details of his project, and gave an account of the single-rail railway that he had built near Brussels, on which cars were last year run at a speed of ninety miles an hour. Mr. Behr said that he would undertake that in a couple of years the means of communication between Liverpool and Manchester would beat the record of the world both for rapidity and for safety.

## COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—</b>			
March 24	Bradford—Drying Works, &c., at Brewery	W. Whitaker and Co., Limited	T. C. Hope and Son, 23, Bank-street, Bradford.
" 24	Dunmow, Essex—Post Office, &c.	A. Dennis	B. J. Capell, 70, Whitechapel-road, London, E.
" 24	Glasgow—Baths	Corporation	Office of Public Works, City-chambers, 64, Cochrane-street, Glasgow.
" 24	Port Talbot, Glamorgan—Twenty-five Cottages	Miss E. C. Talbot	F. B. Smith, Architect, Port Talbot.
" 24	Rhos, Wales—Two Shops, &c.		B. Owen, 11, Penybryn, Wrexham.
" 25	Broken Cross, Macclesfield—Offices, &c.	National School Managers	Whittaker and Bradburn, 19, King Edward-st., Macclesfield.
" 25	Pontypool—Pair of Semi-detached Villas	Miss M. Wood	D. J. Boucher, Bank-chambers, Pontypool.
" 25	Stourbridge—Showyard, &c.	Hereford & Worcestershire Agricul. Soc.	A. Edwards, Secretary, Corn Exchange Offices, Leominster.
" 25	Chopwell, Durham—Thirteen Houses, &c.		D. M. Spence, Architect, Ashmount, Shotley Bridge.
" 25	Nottingham—General Hospital Wing		A. Waterhouse and Son, 20, New Cavendish-st., London, W.
" 25	Dewsbury—Extension of Electric Light Station	Corporation	H. Dearden, Borough Surveyor, Town Hall, Dewsbury.
" 25	Croom, Ireland—Sacristy		—Moriarty, Main-street, Croom.
" 25	South Kirkby—Wesleyan Church		G. F. Pennington, Architect, Central-chambers, Castleford.
" 25	Westport, Ireland—Post Office	Office of Public Works, Ireland	Office of Works, Custom House, Dublin.
" 27	London, N.—Alterations to Steam Laundry	Holborn Union Guardians	J. Buley, Engineer, Suffolk House, Laurence Pountney-hill.
" 27	Beckenham—Dust Destructor	Urban District Council	J. A. Angell, Council Offices, Beckenham.
" 27	Belfast—Fourteen Cottages	Great Northern Ry. Co., Ireland	Company's Engineer-in-Chief, Amiens-st. Terminus, Dublin.
" 27	Brillington Quay—Three Houses	Hardwick and Sons	Brodrick, Lowther, and Walker, Central-chambers, Bridlington Quay.
" 27	Cardiff—Methodist Chapel		J. H. Phillips, St. John's-chambers, Cardiff.
" 27	Huddersfield—Station-street Buildings	Armitage and Norton	Abbey and Hanson, 20, Ramsden-st., Huddersfield.
" 27	Rugby—Corrugated Iron Building	Urban District Council	D. G. Macdonald, Surveyor, Rugby.
" 27	Teorkey, Wales—Baptist Chapel		Rev. S. Morgan, 3, Bute-street, Teorkey.
" 27	Staines—Receiving Wards and Porter's Lodge	Union Guardians	J. A. Engall, Offices, Clarence-street, Staines.
" 27	Letterkenny, co. Donegal—Factory and Residence	McIntyre, Glegg, Marsh, and Co.	M. A. Robinson, Architect, Richmond-street, Londonderry.
" 28	Denby Dale, Yorks.—Alterations to Station, &c.	Lans. and Yorks. Railway Company	Engineer, Hunt's Bank, Manchester.
" 28	Linthwaite, near Huddersfield—Assembly Hall	Wesleyan Methodists	J. Kirk & Sons, Architects, Huddersfield.
" 28	Liverpool—Alterations to Public Workhouses		W. R. Court, Chief Superintendent, Cornwallis-street, Liverpool.
" 28	Raphoe, Ireland—Altering, &c. Parish Church		S. P. Close, Architect, Donegal-square-bldgs, Belfast.
" 28	London, E.—Coroner's Court, &c.	Poplar Board of Works	Lansdell and Harrison, 38, Bow-lane, E.C.
" 28	London, S.W.—Stabling and Cottage	Wandsworth Board of Works	Offices, East Hill, Wandsworth, S.W.
" 28	Kingston-on-Thames—Infirmary, &c., at Workhouse	Union Guardians	W. H. Hops, Union Offices, Portsmouth-road, Kingston.
" 29	London, N.—Boiler and Engine-house	Metropolitan Asylums Board	Pennington and Son, Hastings House, Norfolk-st., Strand.
" 29	Leeds—Additions to Church	St. George's Church	H. Walker, 8, Upper Fountains-street, Leeds.
April 1	Amherst, St. Peter Port, Guernsey—School	States of Guernsey Education Com.	Colson, Farrow, and Nisbett, 45, Jewry-st., Winchester.
" 1	Englefield Green, Surrey—Enlarging School, &c.	School Managers	W. Menzies, Architect, Englefield Green, Surrey.
" 1	Ipswich—Asylum Alterations, &c.	Asylums Committee	E. Buckham, Borough Surveyor, Town Hall, Ipswich.
" 3	Ardrossan, Scotland—Academy	School Board	J. Armour, jun., Architect, Irvine.
" 4	Banceby, near Sleaford, Lincs.—Superstructure of Lunatic Asylum	Kesteven County Asylum	G. T. Hine, 35, Parliament-street, S.W.
" 4	Leyton, E.—Public Baths	Urban District Council	Town Hall, Leyton, E.
" 5	Lanchester—Bridge over New House Burn		The Surveyor, Lanchester, Durham.
" 6	Tipton—Block of Schools	School Board	A. Long, 21, High-street, West Bromwich.
" 10	London, N.—Public Library Buildings	Hornsey Urban District Council	E. J. Lovegrove, Surveyor, Southwood-lane, Highgate, N.
" 11	Durham—Technical School	Governors of Johnson Tech. School	Oliver and Lesson, Bank-chambers, Newcastle-upon-Tyne.
" 18	London, S.W.—Two Bath Turrets at Infirmary	Chelsea Guardians	Lansdell and Harrison, 38, Bow-lane, E.C.
<b>ENGINEERING—</b>			
March 24	Mallow—Repair and Maintenance of Waterworks	Guardians	M. Regan, Clerk, Mallow.
" 24	Ringstead, Northants—Two Girder Bridges	Thrapston Rural District Council	Surveyor to the Council, Thrapston.
" 24	Stockport—Electric Lighting of School	Sunday School Committee	W. B. Leigh, Hon. Sec., Committee Room, Stockport Sunday School.
" 25	Laurencekirk, Scotland—Waterworks		Jenkins and Marr, 16, Bridge-street, Aberdeen.
" 25	Moss, near Wrexham—Driving Tunnel		Westminster Colliery, Moss, near Wrexham.
" 25	Sheepwash, near Choppington—Bridge		Northumberland County Engineer, Moot Hall, Newcastle-upon-Tyne.
" 25	Bristol—Pumping Engines, &c.	Waterworks Company	T. & C. Hawksley, 30, Great George-st., Westminster, S.W.
" 25	Manchester—Steam Pumping Engines	Waterworks Committee	Secretary, Waterworks Offices, Town Hall, Manchester.
" 25	Edinburgh—Chemical Plant	Gas Commissioners	W. R. Herring, Engineer, Gasworks, Edinburgh.
" 27	Dartford—Gas Main, &c.	Urban Rural District	G. H. Tait, Engineer, Sessions House, Dartford.
" 27	London, E.C.—Pumps, &c.	Holborn Union Guardians	J. Buley, Suffolk House, Laurence Pountney-hill, E.C.
" 27	Norwich—Heating and Ventilating Hospital	Health Committee	A. E. Collins, City Engineer, Guildhall, Norwich.
" 27	Glasgow—Railway	Caledonian Railway Co.	G. Graham, Engineer, Buchanan-street Station, Glasgow.
" 27	Dublin—Tramway	Great Northern Railway Co. (Ireland)	Company's Engineer-in-Chief, Amiens-st. Terminus, Dublin.
" 27	Barking—Electrical Plant	Urban District Council	W. C. C. Hawthays, 9, Queen-street-place, London, E.C.
" 27	Beckenham—Dust Destructor	Urban District Council	J. Angell, Engineer to Council, Beckenham.
" 27	Pengam, Wales—Girder Highway Bridge	Bedwelly Urban District Council	J. H. Lewis, Surveyor, Blackwood, Mon.
" 27	Shoeburyness—Gasworks	Gas Company Limited	H. J. Robas, 20, Bucklesbury, London, E.C.
" 27	Bothesay, Scotland—Electric Lighting	Electric Lighting Committee	T. C. Fulton, 44, West George-street, Glasgow.
" 27	Belfast—Two Overhead Tramways	Harbour Commissioners	G. F. L. Giles, Engineer, Harbour Office, Belfast.



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—Continued.</b>			
March 28	Doncaster—Electrical Plant, &c.	Corporation	J. N. Schoolbred, 47, Victoria-street, London, S.W.
" 28	St. Stephen's-by-Saltash, Cornwall—Waterworks	S. Germans Rural District Council	F. W. Clerverton, 4, Buckland-terrace, Plymouth.
" 28	London, E.—Hot-water Heating at Schools	Walthamstow School Board	W. A. Longmore, 7, Great Alie-street, E.
" 29	Aberdeen—Electrical Plant, &c.	Corporation	J. A. Bell, City Electrical Engineer, Aberdeen.
" 30	Sunderland—Electric Cables, &c.	Corporation	J. F. C. Snell, Borough Electrical Engineer, Dunning-st. Sunderland.
April 4	Ledbury—Covered Reservoir, &c.	Urban District Council	R. E. W. Berrington, Engineer, Bank-blds, Wolverhampton.
" 5	Bury, Lancs.—Gas Purifiers, Valves, &c.	Gas Committee	H. Simmonds, Engineer, Gasworks, Elton, Bury.
" 6	London, S.W.—Ships, Pumps and Gear	Admiralty	Director of Navy Contracts, Admiralty, Whitehall, S.W.
" 11	Dover—Hopper Barge	Town Council	H. E. Stilgoe, Borough Engineer, Town Hall, Dover.
May 17	London, E.—Construction of Wells, &c.	Poplar Union	E. J. W. Stevens, 34, Victoria-street, S.W.
June 30	Shanghai—Tramway Concession	Municipal Council	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
No date.	Civita Vecchia, Italy Harbour Extensions, &c.	Department of Public Works	Commercial Department, Foreign Office, S.W.
<b>IRON AND STEEL—</b>			
March 24	Newcastle-upon-Tyne—Pipes, &c.	Guardians	J. W. Gibson, Clerk, Union Offices, Pilgrim-street, Newcastle-upon-Tyne.
" 27	Poole—Pipes	Gas and Co. Limited	W. Davis, Secretary, Poole.
" 27	London, E.C.—Fencing materials, &c.	Burma Railways Co., Limited	Offices, 76, Chesham House, Old Broad-street, E.C.
April 6	Valletta, Malta—Wrought-iron Pipes, &c.	Crown Agents	Crown Agents for the Colonies, Downing-street, London.
<b>PAINTING AND PLUMBING—</b>			
March 27	Falmouth—Renovating Chapel		T. Reed, High-street, Falmouth.
" 27	London, W.—Painting &c., at Infirmary	St. Marylebone Guardians	The Steward, Infirmary, Rackham-street, Notting Hill, W.
" 28	London, E.—Painting and Pointing Brickwork	Sick Asylum District Managers	J. and S. F. Clarkson, 136, High-street, Poplar, E.
" 29	Woolwich—Plumber's and Painter's Goods	Local Board	H. O. Thomas, Surveyor to Board, Town Hall, Woolwich.
" 30	London, S.E.—Painting Casual Wards	St. Saviour's Union Guardians	G. D. Stevenson, 13 and 14, King-street, E.C.
" 31	Blaenconin, Pembrokeshire—Painting &c., Chapel		J. Morris, Stafford House, Llandissilio, Cylnderwen.
April 4	London, E.—Painting, Repairs, &c., at Schools	Bethnal Green Guardians	Holmen and Goodham, 109, Bow-road, E.
<b>ROADS AND CARTAGE—</b>			
March 24	Worcester—Roads, &c.	Corporation	T. Caink, City Engineer, Guildhall, Worcester.
" 24	Wood Green, N.—Works and Materials	Urban District Council	C. J. Gunyon, Surveyor, Town Hall, Wood Green.
" 24	Steyning, Sussex—Flints	Rural District Council	E. Cripps, Clerk, Council Offices, Ham-rd., New Shoreham
" 25	Burnley—Road Materials	Highways and Sewage Committee	G. H. Pickles, Borough Surveyor, Town Hall, Burnley.
" 25	Cambridge—Carting	County Council	J. H. Coates, Surveyor, Little Shelford, Cambs.
" 25	Claypole, Newark—Carting, &c.	Rural District Council	C. D. M. Trinder, Surveyor, Brant Broughton, Newark.
" 25	Maldon, Essex—Materials	Rural District Council	M. C. Warner, Surveyor, Southminster.
" 25	Pontefract—Materials	Rural District Council	W. A. Glover, Clerk, Union Offices, Pontefract.
" 25	Dudley Hill, near Bradford—Tar Macadam	Tong Burial Board	Clerk to Board, Dudley Hill, near Bradford.
" 25	Esrick, York—Team Work	Rural District Council	G. H. Nelson, Surveyor, Heworth, York.
" 25	Driffield, Yorks—Materials	Rural District Council	F. C. Beaumont, Surveyor, Driffield.
" 25	Horsham—Materials, &c.	Rural District Council	W. Dengate, 58, Park-street, Horsham.
" 25	Kempston, Bedford—Roadmaking, &c.	Urban District Council	L. Foster, Surveyor, Bedford-road, Kempston.
" 25	Midhurst—Making up Roadway, &c.	Rural Council	Steward of the Lord of the Borough, 9, West Pallant, Chichester.
" 27	Chesterton, Cambs.—Carting Materials	Rural District Council	J. F. Symonds, 9, Bene't-street, Cambridge.
" 27	Darwen, Lancs.—Five Wagons	Corporation	C. Costeker, Town Clerk, Darwen.
" 27	Bacup—Road Materials, &c.	Corporation	F. Wood, Borough Engineer, Bacup.
" 27	Harrogate—Road Works	Corporation	S. Stead, Borough Surveyor, Municipal Offices, Harrogate.
" 27	Stockton-on-Tees—Materials, Leading, Stones, &c.	Rural District Council	W. Burton, Highway Surveyor, Billingham, Stockton-on-Tees.
" 27	Stratford-upon-Avon—Road Metal	Town Council	R. Dixon, Borough Surveyor, Municipal Offices, Stratford-upon-Avon.
" 27	Wellingborough—Materials	Rural District Council	W. Jackson, Clerk, Wellingborough.
" 27	Waterloo, Lancs.—Materials, &c.	Rural District Council	F. S. Yates, Surveyor, Town Hall, Waterloo.
" 27	Muswell Hill, N.—Making Road	C. J. Hayter	Vigers and Co., 4, Fredericks-place, Old Jewry, E.C.
" 28	Pocklington, Yorks.—Stone and Slag	Rural District Council	T. Robson, Clerk, Pocklington.
" 28	Sowerby Bridge—Road Materials	Urban District Council	The Surveyor to Council, Sowerby Bridge.
" 28	Uppingham—Granite, Carting, &c.	Rural District Council	J. E. Willford, Clerk, Uppingham.
" 28	Whitby, Upper, near Huddersfield—Materials	Urban District Council	J. Sharp, Clerk, Queen-street, Huddersfield.
" 28	London, E.—Asphalting	Sick Asylum District Managers	J. and S. F. Clarkson, 136, High-street, Poplar, E.
" 29	Birkenhead—Street Works	Corporation	C. Brownridge, Borough Surveyor, Town Hall, Birkenhead.
" 29	Clown, near Chesterfield—Broken Slag	Rural District Council	H. J. Gower, Surveyor, Post Office, Whitwell.
" 29	Hereford—Hauling	Rural District Council	H. F. Froggatt, Surveyor, Green Crize, Hereford.
" 29	Penryn—Stone	Rural District Council	G. A. Jenkins, Clerk, Penryn.
" 29	Saffron Waldon, Essex—Paving	Town Council	A. H. Forbes, Borough Surveyor, Saffron Waldon.
" 29	Strood, Kent—Road Works	Rural District Council	G. W. Prall, Clerk, Workhouse, Strood.
" 29	London, S.E.—1,000,000 Jarrah Wood Blocks	St. Saviour's Board of Works	G. R. Norrish, The Surveyor, Emerson-street, Bankside, S.E.
" 29	Ramsgate—York Paving Flags	Corporation	T. G. Taylor, Borough Surveyor, Broad-street, Ramsgate.
" 29	Greenwich, S.E.—Paving	Board of Works	J. Spenser, Clerk, 141, Greenwich-road, Greenwich.
" 30	Chester—Carting	County Council	County Surveyor, Chester Castle.
" 30	Clayton-le-Moors—Materials	Urban District Council	A. Dodgeon, Council's Surveyor, Clayton-le-Moors.
" 30	Gateshead—Materials	Rural District Council	J. Bower, Borough Surveyor, Town Hall, Gateshead.
" 30	Tutbury, Burton-upon-Trent—Materials	Urban District Council	C. F. Chamberlin, Clerk, Union Offices, Burton-on-Trent.
" 31	Withington, Lancs.—Materials	Urban District Council	A. Roberts, Clerk, Town Hall, Withington.
" 31	Congleton—Granite and Drain Pipes	County Council	E. Burslam, Borough Surveyor, Market-square, Congleton.
" 31	Aylesbury—Granite	Urban District Council	E. J. Thomas, County Surveyor, County Hall, Aylesbury.
April 3	Carrikerfergus—Square Setting	Urban District Council	J. Boyd, Clerk, Town Hall, Carrikerfergus.
" 4	Newburn-on-Tyne—Materials	Urban District Council	T. Gregory, Surveyor, Urban District Council Offices, Newburn-on-Tyne.
" 4	Oban, Argyle, N.B.—Road Repair, &c.	County Council	K. Macrae, 5, Argyll-street, Oban.
" 4	London, S.W.—Cartage and Materials	Middlesex County Council	H. T. Wakelam, County Surveyor, Guildhall, Westminster.
" 6	Lutterworth—Materials	Monks Kirby Rural District Council	J. C. Coates, District Surveyor, Bitteswell, Lutterworth.
" 18	Gloucester—Stone and Haulage	Highway Board	— Weaver, Surveyor, Denmark-road, Gloucester.
<b>SANITARY—</b>			
March 24	Sandiacre, near Derby—Scavenging, &c.	Rural District Council	J. W. Newbold, Clerk, Becket-street, Derby.
" 24	Stanley, Durham—Sewers	Urban District Council	J. Routledge, Surveyor, Council's Offices, Stanley.
" 27	Stockport—Removal of Refuse	Rural District Council	H. H. Turner, Surveyor, Hazel Grove, Stockport.
" 28	Willesden, N.W.—Drainage	District Council	O. C. Robson, Public Offices, Dyne-road, Kilburn, N.W.
" 29	Erdington, Birmingham—Sewering	Highways and Buildings Committee	H. H. Humphries, District Surveyor, Public Hall, Erdington.
April 4	King's Lynn—Sewers	Corporation	E. J. Silcock, Engineer, 10, Park-row, Leeds.
" 5	Birmingham—Drain Pipes	District Drainage Board	J. Knight, Council House, Birmingham.
" 20	Bexhill—Sewerage Works	Urban District Council	G. Ball, Surveyor, Town Hall, Bexhill.
May 12	Johannesburg—Sewerage Scheme		Town Engineer, Johannesburg.

## COMPETITIONS.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
March 28	Killmallock, Ireland—Monument		Hon. Secretary, O'Sullivan Memorial Committee, Killmallock, co. Limerick.
" 30	Doncaster—Design for Master's House	£50, £25	Doncaster Grammar School Trustees.
" 31	Forfar—Isolation Hospital	£31 10s., £21, £15 15s.	Dundee and Forfar District Committees.
" 31	Swindon—Additional Fever Pavilion		W. H. Kinner, Clerk to Hospital Board, High-st., Swindon.
April 14	Bradford—Cartwright Memorial Hall and Art Gallery	£150, £100, £50	City Surveyor, Bradford.
" 18	Fleetwood—Schools	£10 10s.	Clerk, School Board, Fleetwood.
" 30	Ramsgate—Concert Hall, Reading Room, Lavatories, &c.	£50, £20, £10	T. G. Taylor, Surveyor, Broad-street, Ramsgate.
June 1	Leeds—Market Hall and Shops	£150, £100, £50	Corporation.
" 3	Harrogate—Kursaal	£150, £100, £75	Corporation.
" 1	Stockton-on-Tees—Market Hall	£25, £15, £10	Corporation.



## Property and Land Sales.

To Builders, Contractors, and others.

**MESSRS. FULLER, HORSEY, SONS, AND CASSELL** are instructed to SELL by AUCTION, in lots, at South Wharf, Lowestoft, on TUESDAY, APRIL 18th at half-past 12 precisely,

**SAW-MILL PLANT AND MACHINERY**, including vertical timber frame, two double deal frames, two circular saw benches, two moulding machines, panel planer, two general joiners, trying-up machine, two fret saw machines, tenoning machine, Richard's patent mortising and boring machine, 6 foot-power mortising machines, dovetailing, treenail, sand-papery, and painting machines, wood-turning lathe, two mitre cutters, moulding iron grinder, water of Ayr stone, eight glue-heating stoves, 118 joiners' benches, frame and circular saws, cutters, chisels, carpenters' and joiners' tools, planing machine, drilling machine, two lathes, engineers' and smiths' tools, two Cornish boilers, 30 h.p. condensing beam engine, 20 h.p. horizontal condensing engine, table engine, shafting and gearing, leather lands; also

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of the Saw Mills and other buildings, comprising about two tons lead on roofs, 250 squares slates, 150 squares tiles, 250 squares slate boarding, 600 squares flooring, 600 squares rough and weather boarding, about 100 loads timber in roofs, girders and uprights, sashes and doors, 60 rods brickwork, quantity bricks, tiles, stone, drain pipes, old lead and iron and builders' materials, water-cart, three tumbrel and spring carts, nine trolleys and wagons, two timber whims, and other effects.

May be viewed the day preceding sale, and catalogues had on the premises; and of Messrs. FULLER, HORSEY, SONS, and CASSELL, 11, Billiter-square, London, E.C.

### Auctions for the Year 1899.

**MESSRS. TROLLOPE'S SALES OF FREEHOLD AND LEASEHOLD ESTATES, HOUSES, GROUND-RENTS, &c.**, will take place at the Mart, E.C., as follows:—

Thursday, April 20th	Thursday, August 3rd
Thursday, May 18th	Thursday, October 19th
Thursday, June 8th	Thursday, November 23rd
Thursday, July 13th	Thursday, December 14th

Sales will be held on other dates as required. In all cases Messrs. Trollope will be glad to have as long notice as possible respecting any property they may be instructed to offer by auction.

### Forthcoming Sales for the Year 1899.

**MESSRS. E. and H. LUMLEY** (Lumleys, of St. James's House, 22, St. James's-street, London, S.W.) beg to announce the following days of SALE by AUCTION, for the forthcoming year, at the Mart, Tokenhouse-yard, E.C.; but, in addition other dates can be arranged for special sales. Terms on application.

Tuesday, April 25th	Tuesday, Aug. 15th
Tuesday, May 23rd	Tuesday, Sept. 12th
Tuesday, June 6th	Tuesday, Oct. 17th
Tuesday, June 20th	Tuesday, Nov. 14th
Tuesday, July 4th	Tuesday, Nov. 25th
Tuesday, July 18th	Tuesday, Dec. 12th

Messrs. E. and H. Lumley announce in the advertisement columns of the "The Times" on Saturdays a complete list of their sales, which will include estates in England, Ireland, and Scotland, town and country properties, ground-rents, reversions, gas and water shares, stocks, &c. In cases where property is to be included ample notice should be given in order to insure due publicity.—St. James's-house, No. 22, St. James's-street, S.W.

To Syndicates, Builders, and Speculators.—Chelsea.—A magnificent Building Site of 24,000 super. feet.

**MESSRS. ROBINS, SNELL, and CO.** have received instructions from the Wilkinson Sword Co. Ltd. (in consequence of the removal of their works to more extensive premises) to LET by AUCTION, at the MART, City, on TUESDAY, MARCH 28th next, the valuable FREEHOLD SITE now occupied by the Company's works, and admirably adapted for the erection of a handsome block of flats, a theatre, or other purposes requiring a large area in a leading thoroughfare. The site has frontages of 109ft. to King's-road and 250ft. to Sydney-street, and contains an area of about 24,000 square feet.

Particulars, plans, and conditions of sale from the Solicitors, Messrs. CRUTESEMAN and ROUSE, 85, Gracechurch-street, E.C.; at the Mart; and from the Auctioneers, Messrs. ROBINS, SNELL, and Co., 22, Conduit-street, Bond-street, W.

By order of Trustees.—Preliminary Advertisement.—Freehold Building Estate, Streatham, near West Norwood Railway Station.

**MESSRS. FIELD and SONS, and Messrs. WALFORD and WILSHIN**, who are jointly concerned, will SELL by AUCTION, at the MART, at an early date, a valuable FREEHOLD BUILDING ESTATE, known as High View Park, comprising 16a. 1r. 10p., lying immediately at the rear of and with approach from Leigham Court-road; also a contiguous Freehold Building Site of 2a. and 5p. in a new road intended to connect Canterbury-grove with Thurlby-road.

Particulars and plan, in due course, of Messrs. KINGSFORD, DORMAN, and Co., Solicitors, 23, Essex-street, Strand; of Messrs. WALFORD and WILSHIN, Auctioneers, Anerley, S.E.; and of Messrs. FIELD and SONS, as above.

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**R. I.B.A. EXAMS. PREPARATION**, personally or by correspondence, in three, six, nine, or twelve months' courses. Architectural Lending Library. Special three months' finishing courses.—For full particulars apply to Messrs. HOWGATE and BOND, Associates R.I.B.A., Perchard House, 70, Gower-street, W.C. (close to the British Museum)

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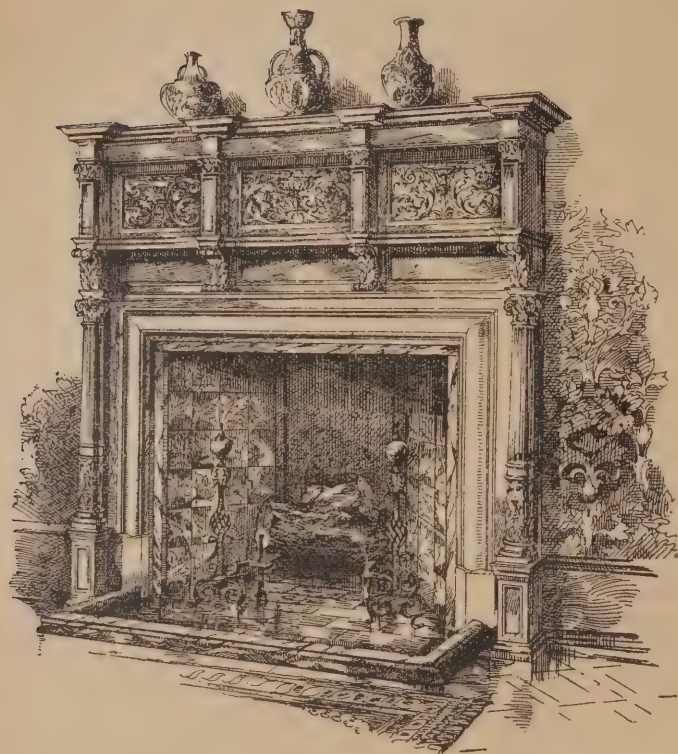
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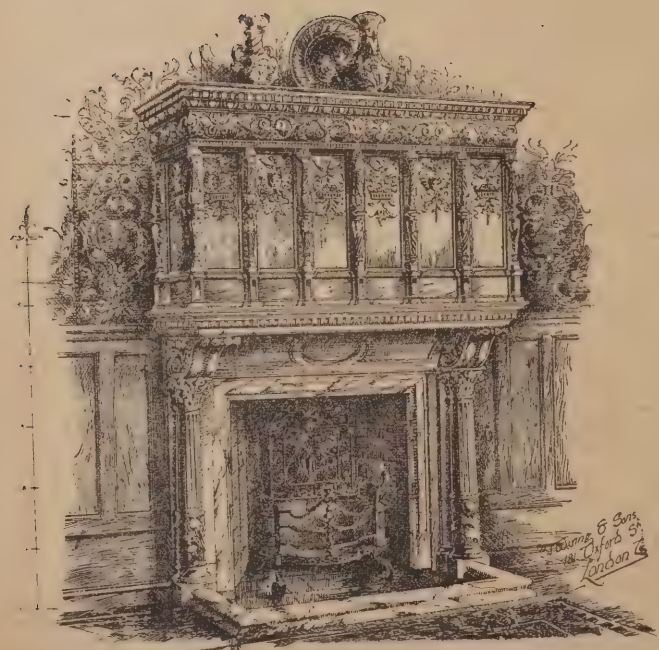
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MARCH 29, 1899.

No. CCXVI.

## An Architectural Causerie.

### Causes of the Prevailing Depression in the Art Market.

It is undeniable that a serious depression affects the artistic industry of the country at the present time, which is especially felt by the painters of easel pictures, and that many practitioners of the arts called "Fine" who entered upon their studentship years ago with buoyant hopes and the determination to perform great things, or, at least, to do the best which their unproved talents would allow, have so far fallen short of realising their ideal in that or any other way, that the sordid cares and anxieties of providing for daily needs have perforce taken up the whole of their daily attention, leaving little power to perform great things even if the opportunity should ever arrive. And although this may prove in the end good for art, by weeding out those whose bent is not strong enough to stand starvation, and discouraging others of the same kidney from attempting the difficult path, just at present it appears to make it hopeless for those who have not money at their back to enter the profession, which is surely a loss to the art of the country, since talent is not the sole heritage of the well-to-do. It may be worth while to inquire into the causes of this depression, for if some or all of them could be removed it would at the same time benefit the nation and be of assistance to a class which as a whole is generally underpaid, though the success of the few is so great as to give a false impression of the ease and luxury in which its practitioners are supposed to live. The first cause was no doubt the general depression from which the trade of the country suffered some years ago, during which men of means found that they could do without fresh pictures without suffering very much, the passion for art being rare among Englishmen. Then the artists themselves showed their patrons how a pleasant decorative effect could be given to their rooms at small cost, things which were pleasant in colour and fine in form assisting the effect greatly, though they might be inexpensive, and patrons were not slow to learn the lesson. Then painters and the critics who haunted the studios were again to blame, in that they could not resist the temptation of pointing out the faults which they thought they saw in pictures shown to them, for one must, of course, be superior to the things in which one can see faults! And as opinions in art matters are almost as various and numerous as the practitioners, it was soon found that no picture escaped condemnation

by some one who claimed, at all events, to know what he was talking about. The natural consequence was that patrons determined to delay their purchases until there was some consensus of opinion as to what was worth buying. Another contributory cause was the favour with which large sketchy landscapes were received. Such works took but a short time to paint, and could be sold for low prices, whereas a figure picture of the same size, painted with any approach to completeness, cost almost as much to produce in absolute out of pocket expenses, and was therefore necessarily much dearer. But the estimation of Art by the ordinary purchaser being largely commercial, the highly wrought figure picture stood a poor chance of sale by the side of the equally large landscape at a much lower price, the patron's mind being confused as to actual values, added to which the delight taken in natural beauty by the ordinary town dweller disposes him to admire and desire to possess pictures representing landscape rather than figure work. All these causes have contributed to the present

### The Suburban Thames.

THE Thames above London for that ten miles or so which is bordered by suburban villas and great waterworks has not for many years past been threatened with so many changes as now. London only "discovered" its river as a pleasure resort, and the riparian districts as residential neighbourhoods, well within the memory of the middle-aged; and with this discovery has come the occupation, not only of the pleasant meads along the banks for building purposes, but also of the land stretching away from the valley back to the low hills that confine the basin of the Thames—a tract of country which, following the terminology of Anglo-German political agreements in Africa, may well be called the "hinterland." "Hinterland" is a blessed word, and expresses much in small compass; but the pleasing leas and foothills which form the hinterland of the suburban Thames are fast becoming unblest with a wilderness of small houses, which are not only no better than they ought to be, but are not, by a long way, so good as they well might be. We may,



THE ISLAND HOTEL, EEL PIE ISLAND. DRAWN BY C. G. HARPER.

depression, and there is yet another. The immense production of the last thirty years has so congested the houses of patrons, many of whom have inherited collections, as to make them very fastidious as to what they select to add to their already large stores, while those who have tried to realise the money laid out upon them have often found that from various causes the investment has not turned out well. This tends to make patrons shy of buying now, fearing a like result in the future. It is to be feared that the depression will last for some time yet, for painters are still being manufactured by the hundred by schools of Art all over the country, and the students of the present day certainly have not less confidence in their own judgement than those of twenty years ago, nor are they more chary of expressing their opinions, while moneyed men, if they have a taste for Art, appear now to prefer to contend with each other in the sale rooms for acknowledged masterpieces, in place of educating their perception and insight by seeking out the works of comparatively unknown men who show promise. A. W.

however, congratulate ourselves that the smug enormities of Surbiton, built from thirty to forty years ago, are no longer possible. We may see innumerable suburban roads rising in the Thames Valley, but at least they are of cheerful red-brick and of an inoffensive design for the most part; while Surbiton remains a monument of yellow stocks, stucco, and bad taste. But it is not wholly of these things that we would speak, but rather of the changes which this vastly increased population along its banks has wrought, and is about to work, on the river itself. Let us take, for example, Richmond and Twickenham. Richmond Bridge, built a hundred and thirty years ago, belongs to the Augustan age of bridge-building in England, and is correspondingly dignified and stately. The growth of traffic in Richmond town and surrounding districts has rendered this structure too narrow for present needs, and the heavy gradient of its roadway is now found to be more trying than in the days of old, while omnibuses were as yet undreamt of. So proposals are now in the making for its demolition and replacement by another and



more commodious structure. At the same time news comes that Twickenham, on the other side of the river, demands direct communication with the Surrey shore, and at no less famous a spot than Twickenham Ferry, as picturesque a place as you shall find within twenty miles of town, and one sung and painted by many sweet singers and famous artists. The drawing-room ballad of "Twickenham Ferry," popular some fifteen years ago, reflects the sentimental associations of the place, and if the actual ferryman is neither young nor romantic, the spot has a charm which must inevitably vanish when a bridge spans the stream. It is good hearing that the Twickenham District Council is considering the advisability of purchasing the Marble Hill estate near here, and preserving its riverside lawns and well-wooded grounds as a public park, thus saving this reach of the river from being built on; but, against this item, is the fact that Eel Pie Island will shortly undergo a change, in the demolition of its old fashioned "Island Hotel," which is to give place to a modern hostelry of a soaring character—"palatial" as the phrase goes; but ill-assorted with the picturesque waterside character of the place, whose mossy piles, tangled underwoods, and tall elms render this a veritable isle of romance. That the Duke of Orleans has erected a boat-house and a hideous river wall at York House, just here, is to be deplored, as taking from the rustic character of the spot, and that in the recent proceedings anent Glover's Island, at Richmond, the advertiser with his hoardings is bent on invading the district is another sorry sign of the times.

C. G. H.

## ARCHITECTS AND TRADE COMMISSIONS.

IN reference to the recently published report of the London Chamber of Commerce on "Secret Commissions"—upon which we commented last week—and to the very general discussion which has arisen upon that report, we have received the following letter from a well-known firm of manufacturers of builders' materials and sanitary appliances:—

To the Editors of THE BUILDERS' JOURNAL and THE ARCHITECTURAL REVIEW.

"DEAR SIRS,—Your journals have made their position, because they are beyond competition, and your place is strong enough to take a definite stand on the subject of trade bribery and architects' commissions. I wish you would insert the inclosed letter, omitting all names, and ask the Institute of Architects and Surveyors whether it permits its members to take commissions. Manufacturers would be infinitely indebted to you for taking this thing up, and would support you very thoroughly against a squeezing, many are too weak-kneed to resist."

The inclosure referred to is the following letter addressed to our correspondents by an architect, described as "C. E., Fellow Institute of Architects and Surveyors":—

"DEAR SIRS,—I have specified ten of your salt-glazed mangers with water division, bran plug, and washer. These are to be used at some stabling I mentioned to your traveller some time ago. If the contractor has not arranged a price with you I shall be glad for you to include for me a 10 per cent. discount. I think he will be ready for them in about three weeks."

To this letter our correspondents replied as follows:—

"DEAR SIR,—We are glad enough to have your work, but we do not like commissions and never pay them. We think the system derogatory to both architect and manufacturer, and one which cannot be too strongly deprecated."

## On Reflection.

### "An Architect Wanted."

UNDER this heading we published last week a letter from a correspondent who required an architect to design for him a country house, and we added an invitation to any who might be disposed to undertake the work to put themselves in communication with us. The response has been extraordinary. Our original intention was to forward to our correspondent such letters as we received, leaving him to make his own selection. But the number of applicants—already more than forty—makes it necessary, if our correspondent's purpose is to be served, that some sort of selection should be made for him. We have accordingly decided to initiate a competition in which we shall ourselves pay the premiums. By this means we shall, while acting with perfect impartiality, best serve the interests, we think, both of our correspondent and the architects who offer him their services. We defer until next week a detailed statement of the Conditions of Competition, but meanwhile we may state that our offer applies equally to all architects, not only to those who have already made application.

### The New A.R.A.

By the election of Mr. Aston Webb to the Associateship of the Royal Academy, a well-deserved honour has been paid to one of our most eminent and conscientious architects. Mr. Webb has been a hard worker, and he has rendered yeoman's service to the profession he adorns, having served the two great architectural bodies, first as President of the Architectural Association, then as Hon. Secretary, and afterwards Vice-President of the R.I.B.A. But his services to Architecture in the larger sense consist in the works he has carried out, which, taken as a whole, may be fairly regarded as representative of the highest accomplishments of present day architects. Mr. Webb's most ambitious work has not yet been given to the world. Two or three years ago he was invited by the Government with two other architects to prepare designs for the completion of the South Kensington Museum. Mr. Webb's designs were regarded by the assessor, Mr. Waterhouse, as the most satisfactory of the three; but up to the present nothing has been done towards carrying them out. The work cannot, however, be much longer delayed, and when the much needed building is erected, we shall have not only a worthy home for a great Government department but a noble and enduring monument to an artistic genius of the first rank.

### Employers in Parliament.

TOWARDS the end of last session there was established a Parliamentary Council, consisting of duly appointed representatives of the various trades, the objects of which were stated to be: "To take action with respect to any Bills introduced into either House of Parliament affecting the interests of trade, of free contract, and of labour, or with respect to the action of Imperial or local authorities affecting in any way the said interests." The new Council was an offshoot of the "Labour

Protection Association," of which the Earl of Wemyss is the presiding genius. To the principle of a committee representing in Parliament the special interests of employers no reasonable person could object. Indeed, it seemed an altogether desirable thing that, side by side with the body which authoritatively represents the interests of the workmen in Parliament—the Parliamentary Committee of the Trades Union Congress—there should be another, equally authoritative and equally representative, which might speak for the employers of labour. Given two committees, composed of businesslike and reasonable men, one might suppose that much friction might be avoided, and many questions affecting employers and employed adjusted with mutual satisfaction as the result of friendly pourparlers between the two bodies. But "businesslike" and "reasonable" are the last epithets to apply to the Employers' Parliamentary Council, which is evidently dominated by the antiquated individualism of the Earl of Wemyss, and looks at every question from the standpoint of days prior to the passing of the factory acts. We have just received a paper published by the Council, setting forth the title and purpose of a number of public and private bills now before Parliament to which the Council proposes to offer opposition, together with a short statement of its grounds of objection. Some of these bills are introduced by Liberal and some by Conservative members. The Council is impartial in its opposition. Proposals to limit hours of labour in mines, bakehouses, and shops, to secure qualified attendants for steam engines and boilers, to provide automatic couplings on railways, to extend the principles of the Workmen's Compensation and the Truck Acts, are all objected to; but to our mind the most objectionable feature of the Council's attitude is its affectation of solicitude for the good of the working man. The Council's object, as revealed by its actions, is clearly to prevent any legislation which makes for the safety, the health, and the happiness of the working classes, if there is the slightest danger of such legislation affecting the pockets of the employers.

### The Foes of Peace.

THE latest accomplishment of this precious council is to veto one of the most hopeful schemes that have recently been brought forward for the promotion of industrial peace. Mr. Ritchie in pursuance of what happily seems to have become the fixed policy of the Board of Trade, whether a Liberal or a Conservative Government happens to be in power, has been making efforts to bring about some workable arrangement by which strikes and lock-outs, with their attendant evils, may be rendered less frequent, if not altogether prevented. Among other steps Mr. Ritchie communicated to the Employers' Parliamentary Council a suggestion, which emanated from the Parliamentary Committee of the Trades Union Congress, that a Board of Conciliation consisting of employers and employed should be established, to whom all disputes should be submitted. There was to be no compulsion to accept the suggestions of the proposed Board, but no strike or lock-out was to be begun until the Board had considered the issues and pronounced upon them. The Employers' Council has rejected the proposal, with expressions of sympathy for its objects, which Mr. Ritchie and the public will no doubt appreciate at their right value. We do not for a moment suppose that this Parliamentary Committee is in any real sense representative of the employers of the United Kingdom; if it were, the hope of a happier relationship between employers and employed, based upon a juster and more reasonable estimate of mutual duties and responsibilities, would be small indeed.





— PORTRAIT OF INIGO JONES, FROM AN OLD ENGRAVING.

## SOME NOTES ON THE WORKS OF INIGO JONES.

By H. INIGO TRIGGS, A.R.I.B.A.

THE history of the English Renaissance falls naturally into three well marked divisions; (1) the experiments of those who accepted any form of Art, so long as it emanated from abroad; (2) the success of Inigo Jones and Sir Christopher Wren; and (3) the long decadence.

It is with the second of these three divisions this essay proposes more especially to deal, but in considering the life of Inigo Jones and his influence on the Architecture of this country it is essential that something be said about the first of these three periods.

At the decline of Gothic Architecture the Italians were foremost of the foreign artisans, who, under the patronage of Henry VIII. and the nobility of his day, were employed in considerable numbers, more especially in the southern counties; doubtless owing to the Court influence and the proximity to the Continent. It is particularly noticeable that they do not appear to have designed and carried out any single building, and we must therefore suppose, that their art was confined solely to designing small things, and was an affair of detail, of delicate arabesque in plaster and terra-cotta, and of carving, for which they had always been so justly famous.

From the influence of these Italians the art of this country was destined to undergo an important change, being as much affected by them as the literature was. The passion for everything Italian amounted to such a craze that no man of any standing could be said to have completed his education without a visit to Italy; and it became the fashion to import Italian objets-d'art. The collection of which, together with pictures of the Italian masters, soon assumed such proportions that it was not long before it spread to Architecture. Many students visited Italy partly as the agents of noble patrons, and partly for the purpose of educating themselves in the new style. These students on their return home would take a position as foremen among their fellow workmen (the profession of an architect being at this time unrecognised), and they undoubtedly are responsible for much of the design we find at this period.

On the death of their great patron Henry VIII. the Italians appear to have departed from England. Edward VI. during his short reign preferred rather to spend money on education than on art, and after the extravagant excesses of Henry's court, the nobility could hardly have been in a very rich condi-

tion. Little building appears to have been done during the reigns of Edward VI. and Mary, though under the rule of the latter the decay of Gothic Architecture received a slight check. These were, however, troublous times, and one would hardly expect to find much advance in the art of Architecture.

The conclusion we may therefore arrive at is that the direct influence of this first attempt to introduce Italian art was not of sufficiently long duration to have very considerable results, more especially as the area affected was so small; but it enlarged men's ideas, and created a desire for greater knowledge of the ancients, a desire largely fostered by the amount of classical literature published at this time.

When Queen Elizabeth commenced her reign the separate existence of the architect from the general body of workmen was still not recognised, buildings were erected principally from specifications, many examples of which still exist, drawings were very seldom used. This want of architects was largely atoned for by the amount of taste for Architecture displayed by the nobility.

Affairs with Venice now became strained, Pope Pius V. endeavoured to induce all Roman Catholic powers to break off relations with England. Queen Elizabeth, from political and private considerations sympathised with the Protestants on the Continent, and nearly all the foreigners who came to England during her reign, were natives of Germany and the Low Countries. It thus happens that the influence of the Germans on design now began to predominate over that of the Italians, and eventually ousted them out of favour. There were also about this time many pattern books of design published in Antwerp, and exported to this country, and the lavish use made of these books by the workmen of the age becomes very noticeable when we examine the arabesques, strap work, and jewel work (patterns evidently emanating from Continental sources), which adorn the buildings of the Elizabethan age.

Speaking of this important period which directly preceded the Renaissance proper, Mr. Reginald Blomfield says:—"The effect of German art on English was greater for the time than the Italian, but not so lasting in its results; that this influence had not sunk deeply is evident from the ease with which Jones overthrew it, and it did not appear in

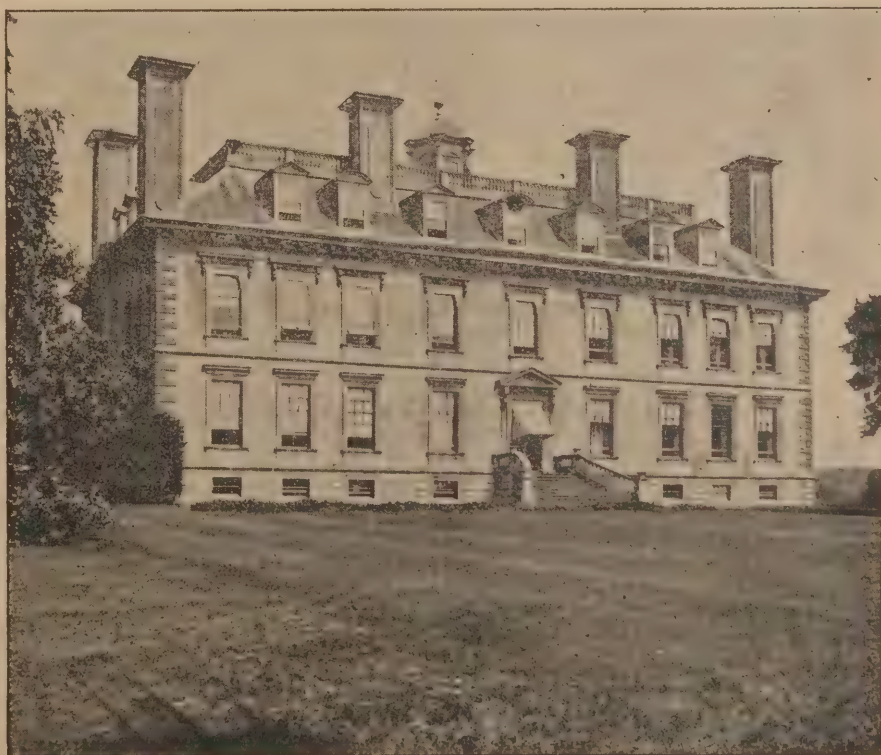
England as long as the development of Architecture was spontaneous and traditional, and though not unconscious was not the result of deliberate eclecticism.

"The real and essential change in English Architecture, the change which altered not merely its detail but its whole intention in building, is not to be found in these experiments of the sixteenth century, but in the far-reaching revolution introduced by Inigo Jones, the first Englishman to grasp in its full significance the art of the Italian Renaissance."

With Inigo Jones an entirely fresh start was made. More than a century after the Italian Renaissance had been in full swing he was the first Englishman to make of it a serious study, and being also possessed of an exquisite sense of proportion, as well as an amount of learning in advance of the age, there is little wonder that, when almost fresh from Italy, having made the acquaintance of King Christianus IV. of Denmark, he was introduced by that monarch to the English Court, where, once established, he quickly arrested the German element, which then held sway over English Architecture.

When Jones first set foot in Italy Michael Angelo and the best Italian architects had passed away, and the decadence had set in, he had therefore the very best work to study from, and moreover being able to detect the decay, was able in his own practice to steer clear of its causes.

It has been said of Inigo Jones that he destroyed the English tradition, which up to his time was a living factor in English buildings in spite of ornament borrowed from Italy and Germany. But when we consider how this tradition had remained uncared for, how the art of Architecture was being swayed by fashion, how fast the eclectic tendency was growing in the English people, refusing to be repressed, we cannot but acknowledge that if Art was to be directed by varying fashion, instead of by gradual growth, the channel through which Inigo Jones has the responsibility of having directed it, was undoubtedly the best. Had Jones lived a century earlier his influence would probably have had an entirely different result, and his genius might have promoted the growth of Gothic Architecture, although, judging from the way the Italian Renaissance affected all the cultivated nations of Europe, it seems hardly probable



COLESHILL HOUSE, BERKSHIRE.



that England could long have withstood the growing tide.

Inigo Jones was born in Smithfield, London, on July 15th, 1573, and was christened four days later in the Church of Saint Bartholomew of that parish. His father was a cloth-worker, who seems not to have been particularly prosperous, at any rate in his later years, for we find that on his death, Inigo was left an unpleasant legacy; in the father's will, dated 1596, which was executed just before his death, he bequeaths to his son "All the debtes, billes, bondes, and bookes that I leave in writinge, to receave and to paye my debtes, so farre forth as they maie be received." It has been said that Inigo the elder was a tailor near St. Paul's, and was connected with Spanish merchants, one of whom gave his Christain name to the child, but this is scarcely probable; the name was not an uncommon one, it being the English form of Ignatius, and as the father as well as his illustrious son were devout Roman Catholics, it is little to be wondered at that they bore the name of the saint.

Very little is known of Jones' earlier life; the probability seems to be that he was apprenticed to a joiner. He seems, however, not to have remained long in this occupation, for we find that he was distinguished in early life for painting, and took up this profession. His first biographer states that "He was particularly taken notice of for his skill in the practice of landscape painting," which probably was the reason that one of the lords of the Court sent him to Italy to study landscape painting. Arrived there, the claims of Architecture appealed to him more strongly than those of painting. Of this period in his career. He himself writes: "Being inclined to study the arts of design, I passed into foreign parts to converse with the great masters thereof, in Italy, where I applied myself to search out the ruins of those ancient buildings, which in spite of time itself, and violence of barbarians, are yet remaining; having satisfied myself in these, and returning to my native country I applied my mind more particularly to Architecture." But he evidently did some painting, for there were, until quite recently, two landscapes, in the collection at Chiswick House, where also a large collection of his drawings was stored. These, or rather most of them, were, in 1892, given by the present Duke of Devonshire into the custody of the Royal Institute of British Architects.

Webb, who was his pupil and executor, says, "He was architect-general unto four mighty kings, two heroick queenes, and that illustrious and never to be forgotten Prince Henry." He goes on to say that he was first employed by Christian of Denmark, who sent for him from Italy, and then he was employed by Queen Anne, the Danish princess, who married the then King James VI. of Scotland, but who had now become King of England. Their eldest son Henry, Prince of Wales, an exceedingly cultivated prince, recognised also the genius of Inigo, and took him under his especial patronage.

How long he spent in Denmark is uncertain; several buildings are attributed to him, but it must be admitted on very slender grounds. He is said to have assisted in building part of the Palace of Fredericksborg, because it bears such a resemblance to Heriot's Hospital, Edinburgh, but it is exceedingly doubtful if he had anything to do with the latter building, and even more open to question if he was employed at Fredericksborg.

Queen Anne may be said to have been the means of introducing him to the Court of James, and he soon became actively engaged in arranging the Masques which formed such a feature in Court revels of this period, and on which it seems too much time and money could not be expended. These Court Masques formed a great contrast to the plays of Queen Elizabeth's reign, when people had been content with the wonderful genius of Shakespeare and his contemporaries without any setting of scenery or stage effect. The Masque was a brilliant pageant, the words often, to the disgust of Ben Jonson, being only used as a necessity to describe the

scenery, and it was in these plays that Inigo's genius was employed to produce elaborate stage effects. He was the first to employ scenery on a large scale in England; having no doubt learnt many things on this subject from the Italians. With this great talent, we can understand his becoming a favourite in the Court, which is known to have been one of the gayest and most frivolous of its time. His first important Masque was given at the instigation of the Queen of James I., at Whitehall, on Twelfth Night, 1604. The words were by Ben Jonson, who says himself that the bodily part was "of Master Inigo Jones's design and act." The whole description of the scenery is given in Ben Jonson's works; the cost of the Masque was about £10,000 of our present money, and, when one considers the extraordinary amount of preparation involved in its production, one is not surprised at the sum. In the same year he was busy preparing the scenery and devices for three plays, presented before the King in the hall of Christ Church, Oxford, which, perhaps, hardly came up to the expectations aroused by his earlier success, for a contemporary thus alludes to the performance in a news-letter: "They hired one Mr. Jones, a great traveller, who undertook to further them much, and furnish them with rare devices, but performed little of what was expected. He had for his pains, as I have constantly heard, £50."

The Masque of Hymen on the following Twelfth Night was the joint production of Jones and Jonson. The latter here praises Jones when he says: "The design and art, together with the devices and their habits, belong properly to the merit and reputation of Master Inigo Jones, whom I take the modest occasion in this fit place to remember, lest his own worth might accuse me of an ignorant neglect from my silence." We shall notice that those cordial feelings gave place later to great jealousy on the part of Ben Johnson. It was in this Masque that Jones made an even further departure, and gave what was, perhaps, the first transformation scene in England. The upper part of the scene was composed of clouds, which were made to swell and at last opened, discovering Juno seated on a throne, supported by peacocks; whilst above her, surrounded by fire, stood Jupiter.

He was employed on many other Masques at this period of his life, and, probably owing to his reputation and versatility, he was employed by the Crown on a mission to France in 1609, as appears from an entry in the treasurer's book—"To Inico Jones, upon therle of Salisburies warrante, dated 16 June, 1609, for carreinge lres (letters) for his Ma<sup>ty</sup> servyce into Fraunce, xiiij' vj' viij'."

On his return he prepared another Masque, working with Jonson, and receiving an equal reward with him for his share of the "invention."

But from this time the relationship with Jonson does not seem to have been of the most amicable nature, and in 1619 Jonson made the anything but complimentary remark to Prince Charles, "that, when he wanted to express the greatest villaine in the world, he would call him ane Inigo," and, continuing, he says: "Jones having accused him for naming him a fool behind his back, he denied it, but I said he was an arrant knave, and I avouch it." This, the first quarrel, was patched up, and they joined together for the last three Masques which took place in the reign of James I. The last in which they worked together was performed before King Charles and his Queen. It was entitled "Chloridia," and was the cause of the great quarrel between the collaborators, which arose from the circumstances that Jonson put his name on the title-page before Jones. This was the last of Jonson's Court entertainments, his place being taken by others, who were more subservient to Jones, and flattered him considerably. Heywood among them, who says: "I cannot pretermit to give a due character to that admirable artist, Mr. Inigo Jones, Master Surveyor of the King's Works, who, to every acte, nay, almost to every sceane, by his excellent inventions gave such an extraordinary lustre upon every occasion changing the stage, to the

admiration of all the spectators, that, as I must ingeniously confesse, it was above my apprehension to conceive, so to their Sacred Majesties and the rest of the auditory it gave so general a content that I presume they never parted from any object presented in that kind better pleased or more plenally satisfied."

But Ben Jonson, although supplanted at Court by the influence of Inigo, had not done with him. He wrote "An Expostulation with Inigo Jones," in which he says: "Painting and carpentry are the soul of masque," and again, "Thy twice conceived, thrice paid for imagery." Jonson points out, what is most probably the truth, that Jones wanted to be master of all, and get all the praise, an attitude which was naturally most galling to the playwright. In Jonson's later play of "The Tale of the Tubb," Inigo is represented in the character of Vitruvius Hoop, but Jones had so much power that by order of the Lord Chamberlain the part was cut out, as it says in the old entry "exceptions being taken against it by Inigo Jones, Surveyor of the King's Works, as a personal injury unto him." Even as the play is handed down to us, much shorn of its original character, one can easily trace Jonson's bitter enmity towards Jones.

SQUIRE TUB: Can any man make a masque here in this company?

TO-PAN (a tinker): A masque? What's that?

SCRIBEN (the great writer):

"A mumming or a Shew

With vizards and fine clothes."

CLENCH (the farrier):

"A disguise, neighbour,

To the true word. There stands the man can do't, sir,

Medlay, the joiner, In-and-In, of Islington, The only man at a disguise in Middlesex."

SQUIRE T.: But who shall write it?

HILLS: Scriben, the great writer.

SCRIBEN:

"He'll do't alone, sir, he will join with no man,

Though he be a joiner, in design he calls it, He must be sole inventor, In-and-In Draws with no others, In's projects, he will tell you,

It cannot else be feasible, or conduce Those are his ruling words."

It is interesting to note that Jonson calls Jones a joiner, which makes it even more probable that he had been apprenticed to one in his youth, as has been already stated.

It was at the time of this quarrel that Jones lost his friend and admirer Chapman, the poet, with whom he had been associated in arranging masques. He erected a monument to his memory in the churchyard of St. Giles'-in-the-Fields, where it is still to be seen.

(To be continued.)

The Venice Art Exhibition will be opened on April 22nd and closed on October 31st. Special rooms will be dedicated to some of the chief artists.

A large block of warehouses in Fountain Court, Aldermanbury, London, is to be rebuilt from the plans of Mr. H. E. Chatfield Clarke, architect, of 63, Bishopsgate Street Within, London, and the cost of the work is estimated at £12,000.

The Birmingham Royal Society of Artists' 34th spring exhibition is in course of preparation, and a private view for subscribers will be held to-morrow. The society has secured for the present season a selection of the works of Mr. Walter Langley, R.I.

Portobello Improvements.—The sub-committee of the Corporation which has charge of the improvements at Portobello, provided for under the Amalgamation Act, have resolved to recommend the extension of the promenade on the beach from the present termination at Pipe Street westwards to King's Road, at a probable cost of £7500. It was also resolved to recommend the formation of a drainage system, at a probable cost of over £12,000.



## FURNISHING TRADES EXHIBITION.

THE third annual Furnishing Trade's Exhibition and Market, which was opened at the Agricultural Hall, Islington, on the 17th inst., is primarily intended to afford a meeting place for business purposes for the wholesale and retail trader. This purpose is admirably served, inasmuch as the exhibition is larger and more representative than those of previous years, and it affords the retailer an opportunity of seeing the best that is being done in every branch of the furnishing trade. The general public is excluded from the exhibition, admission being by invitation ticket and trade card, and, from the business point of view, this exclusion is no doubt wise. But from another point of view, it is perhaps a little to be regretted. There are many, probably, who, being neither buyers nor sellers of furniture, would yet find a certain interest in such an exhibition from the evidence it would afford of the progress or retrogression of artistic taste in this country. The art critic would doubtless find many things at the Agricultural Hall that would shock his artistic sensibilities, but he would find there a surer index than could be found in any art gallery of the average level of artistic culture attained by the masses of the people. Among a truly artistic people, such as the ancient Greeks, not pictures only, but the common articles of everyday use are objects of beauty; an inartistic people will be perfectly content if these articles merely fulfil their utilitarian objects.

The visitor to the Furniture Exhibition who should examine the exhibits in this philosophical spirit would find, we think, not a little that he would regard as distinctly encouraging. Of the aggressively ugly there is, perhaps, less than might be expected, while not a few of the designs for sideboards, overmantels, and bedroom suites, reach a high level of artistic excellence. One of the most artistic stands in the exhibition is that of Messrs. Charles Marco, and Co., pedestal manufacturers, of 4, New Zealand Avenue, Barbican, E.C., who, in addition to a great variety of pedestals of attractive design, are showing some beautiful examples of artistic work in bronze and terra-cotta. Immediately adjoining this stand is that of Mr. W. W. Ratcliffe, of 219, Old Street, E.C.; here also are to be seen a number of artistic exhibits, chiefly of Louis XV. and Sheraton drawing-room goods. There seems to be a revival just now of the taste for Sheraton furniture. Several firms make a speciality of this class of goods, in particular Messrs. E. Kahn and Co., Limited, of St. Andrews' Street, E.C., have a capital display, which includes some exact reproductions from original old cabinets, bureaux, and occasional tables. The same firm also exhibit a good selection of carved oak furniture and of bronze fittings for electric lighting.

Messrs. John Hough and Son, of Birmingham, are showing a bedroom suite of specially attractive design in satin walnut, polished Chipendale, with pollard oak panels; also another of the same design in ash, polished golden. Messrs. Alfred Goslett and Co., of Tabernacle Street, E.C., are showing a large selection of overmantels of all kinds; some of their "Louis" glasses are specially attractive. This firm also does a large business in building materials, including wall papers, leaded lights, colours, varnishes, polishes, &c. Some novelties in ebonised and green maple furniture are being shown by Messrs. D. Jacobs and Sons, of Hackney Road, London, E., and a great variety of folding furniture is to be seen at the stand of Mr. E. Atkins, of Church Row, Bethnal Green Road, E.

The Jarrahdale Jarrah Company have an exhibit of special interest to builders; their famous West Australian hardwood is best known as a material for street paving, but it is now also being largely used for shop fronts, window sills, stair treads, counter tops, &c. For these purposes it would seem to be

admirably adapted, as it takes a beautiful polish and presents a very handsome appearance. Messrs. Cobbett and Co., the well known timber merchants, of Virginia Road, Bethnal Green, E., are showing samples of various woods for turning, picture-frame mouldings, planed fret-woods and prepared panels, and also specialities in turning. Mr. C. Alstrom, of 76, Great Eastern Street, E.C., who manufactures all kinds of office and library furniture, show-cases, and shop fittings, exhibits a few samples only of his wares. Mr. Alstrom employs 500 men in a steam factory, and makes a speciality of supplying an estimate and drawing on the spot for any work required. An exhibit which should interest large employers of labour is the "Dey" time-register, an ingenious arrangement for registering the time of arrival and departure of employees. The workman presses a button every time he enters or leaves the works, and the time is automatically printed on a roll of paper running over a

## GOTHIC ARCHITECTURE\*

By JOHN BILSON, F.S.A., F.R.I.B.A.

(Concluded from page 105.)

IN treating of the vaults over the principal spans of churches, the author said that the Normans aimed at covering all parts with stone vaults. The plans of piers sufficiently indicate that the vaulting of the principal spans was intended to follow the vaulting of the aisles. The choir piers of Saint Nicolas, Caen, and Saint Georges-de-Bosherville were cited as typical examples. Each shows a group of three shafts on each side of the pier to carry the arch-orders of the main arcades, a single shaft which receives the transverse arch of the unribbed aisle vault, and a corresponding shaft towards the main span. It is not improbable that the failure, which naturally attended the construction of the earliest



LE VIEUX, ST. ETIENNE, CAEN. DRAWN BY F. CHATTERTON.

drum inside the machine. Another mechanical contrivance that is worth noticing is Phipp's Patent Automatic Gas and Electric Light Extinguisher, which works by clockwork, and will turn off gas taps or electric light switches at any set time.

**The Church of Le Vieux St. Etienne, Caen**, of which an illustration is given on this page, is a fine example of the latest phase of French Gothic. It dates from the days of William the Conqueror, but has been restored, —not very happily—in recent times. The interior contains some very beautiful work, notably the cupola. It seems incredible that the people of Caen should have allowed their beautiful church to fall into its present state of neglect and ruin; portions of the building are used for the storage of forage, others for the safe custody of street cleaning implements, brooms, rakes and the like. Such at any rate was the state of affairs at the time when the above sketch was made. The sketch shows the tower viewed from a narrow street close by.

vaults over wide spans, may in some cases have rendered subsequent reconstruction a necessity. Very few early examples of vaults over wide spans have survived. The earliest instance in England of a ribbed vault over the principal span of a great church is the choir vault of Durham Cathedral, though here the original vault was replaced by the existing vault in the thirteenth century. The vault over the north transept of Durham is probably the earliest of such vaults still existing. The evidence of the structure itself, the analogy of the other vaults of the church, and the documentary evidence, taken together, enable one to speak with some approach to certainty of the character and date of the original choir vault of Durham. The plan of the choir, consisting of two double bays, is a type usually associated with a sexpartite vault. But the date is much too early for this kind of vaulting. There can be no doubt

\* *Resumé* of a paper read before the Royal Institut of British Architects on March 20th.



that the original choir vault was a ribbed vault, and it may safely be concluded that the choir was originally covered with a double quadripartite vault over each double bay, closely resembling the vault of the north transept, erected almost immediately afterwards.

The vaults of transepts and nave at Durham next came under examination, and were discussed at length, the author showing that the character of the work indicated that the vaulting idea was present in the earlier parts of the structure, and that it was abandoned and again taken up while the work was still in progress. Touching the date of the nave vault of Durham, there is absolutely no authority for Billing's statement, repeated by later writers, that it was constructed between 1233 and 1244 in the Norman style. Symeon's continuator proves that the nave was vaulted between 1128 and 1133, and this is borne out by the character of the masonry of the vault itself. Durham affords complete proof of the ability of Norman builders to construct ribbed vaults over the principal spans of a great church, and to abut the thrust of these vaults by arches across the triforium of which the flying buttress is merely a development. Evidences quoted by the author indicate that the choir vault was constructed by 1104, the vault of the north transept may be assigned to a date within the first decade of the twelfth century, and that of the south transept within the first quarter of the century; while the nave vault, with its pointed transverse arches, was constructed between 1128 and 1133.

Examples of vaults showing the influence of Durham were cited in the priory church of Lindisfarne, no part of which appears to be later than the middle of the twelfth century, and, on a small scale, Warkworth Church, (Northumberland). The nave of Lincoln was vaulted before the middle of the twelfth century. It was built by Remigius, and, dedicated in 1092, was injured by fire in 1141, and Giraldus Cambrensis states that it was vaulted by Bishop Alexander. Henry of Huntingdon places the date of this work at 1146. What this vault was like may be gathered from the chancel of Stow Church, Lincolnshire, the detail of which so closely resembles Alexander's work at Lincoln as to prove that it was executed by the same school of masons. The evidence here indicates that Alexander's nave vault at Lincoln must have been ribbed.

The following early examples of ribbed vaults to apses were referred to, and their characteristics described: The small apsidal chapel on the east side of the south transept of Christchurch, Hants, appearing to date from early in the twelfth century; the apsidal chapel on the east side of the south transept of Tewkesbury Abbey church, which may be assigned to the first twenty years of the twelfth century; Birkin Church, Yorkshire, middle of twelfth century; the octopartite vault of the Treasury of Canterbury Cathedral; the apse vault of the Chapter-house of Durham Cathedral, a larger and more advanced example, finished by Bishop Geoffrey Rufus, 1113-1140. The last-named was partly destroyed by fire in 1796, but Carter's drawings have preserved an accurate record of it.

The author concluded his paper with some observations on the bearing of the English evidence on the general question discussed in the prefatory paper previously referred to. Before the introduction of the rib, the Normans were already developing the articulation of their construction to an extent quite unknown in the Ile de France. The earliest ribbed vaults exhibit a system which is slightly less advanced than even the primitive vaults over the aisles of Saint Etienne, Beauvais. The large number of ribbed vaults still remaining proves the existence of an active school, which had already accomplished much before the introduction of the pointed arch. It is remarkable that all these English vaults are quadripartite. No example is met with either of the sexpartite vault or of the intermediate form—quadripartite cut by a secondary transverse rib—both of which occur in the group of churches in and around Caen. Obviously the quadripartite vault was the earliest form,

and varieties could not have been developed if the quadripartite vault had not previously been known. The evidence of the rib sections points in the same direction. As in their system, so also in the profiles of the rib mouldings, the earlier ribbed vaults in England come into line with the quadripartite vaults at Lissay, and represent an earlier stage than the vaults of the Caen group. These latter, whether sexpartite or of the intermediate form, show one easily recognised type of the rib section, a more refined and clearly later type not found in England until the octopartite vault over the Treasury at Canterbury Cathedral, probably erected soon after 1130. The approximate date of 1130 suggested for the earliest vaults of the Caen group, seems probable enough, and the experiments which the builders of these vaults tried in setting out the curves of the ribs, indicate that they were not adopting ready-made a system already worked out elsewhere. Apart from the English evidence, the authenticated dates of the earliest ribbed vaults prove that influence from the Ile de France is quite impossible, and show the complete independence of the Norman school up to, at any rate, the end of the first third of the twelfth century.

Mr. Phené Spiers proposed a vote of thanks to Mr. Bilson. He thought that the principle Mr. Bilson had set forth was that Norman vaulting in England had been of an independent character. Normandy architecture was behind the rest of Europe in the early years of the eleventh century, compared with the rest of France.

Mr. Francis Bond, in seconding the vote of thanks, said that if Mr. Bilson was right in his conclusions as to the chronology of the high vaults at Durham, then they must come to the conclusion that the architect of the choir vault, alleged to have been completed in 1104, was the very first to solve the great problem of Western Mediæval architecture—how to construct a ribbed vault, divided into oblong compartments, over a high nave set between low aisles and lighted by clerestory windows. But if so, how was it that no English architect availed himself of the Durham solution—with the exception of the builders of Lindisfarne, which was an appanage of Durham—till the closing years of the twelfth century? The weak point of Mr. Bilson's case was that it rested on a translation. The nave was stated to have been finished *ad sui usque testudinem* in the year 1128. If this meant "up to its vault," then the subsequent statement that the nave was completed by the monks in 1133 might be taken to mean that the vault of the nave was constructed between 1128 and 1133. But *testudo* was used of wooden roofs also, and not of stone vaults exclusively; which seemed to invalidate the whole hypothesis.

Mr. St. John Hope made some remarks about Norwich Cathedral, which he thought worthy of study, and Mr. E. W. Hudson called attention to the vaulting of the Priory of St. John's, Clerkenwell, with bold diagonal ribs, which he considered twenty-five years earlier than Rahere's ribless works of 1123 at St. Bartholomew's.

The vote of thanks was heartily agreed to, and in reply Mr. Bilson said that Mr. Spiers quite misunderstood him if he drew the conclusion that he desired to make England independent of Normandy. When Mr. Bond stated that his (the speaker's) conclusions involved the supposition that a Durham architect was the first to solve the great problem of Gothic architecture, was he not considerably overstating his point? To mention only one example in Normandy, the problem, as Mr. Bond had put it, was solved with unribbed vaults in the choir of Saint Nicolas, Caen, which was completed c. 1083, ten years before Durham was commenced. He admitted that his views as to the dates of the high vaults at Durham were opposed to preconceived ideas, but careful study of the building and the evidence had convinced him that the conclusions he had put forward must in the main be accepted. The vaults were obviously of various dates, and it was quite impossible to attribute them, with the chapter-house vault and the high vaults of Lindisfarne, to Bishop

Pudsey, as Mr. Bond had suggested in a recent book. They were entirely different character, and palpably earlier than Pudsey's works, of which we had several notable examples.

## A NEW BRIDGE AT VENICE

BY ALFREDO MELANI.

THE necessity for a new bridge over the Laguna at Venice has been under discussion now for some time, and the site all but been determined. It should be somewhere between the extreme point of the Ca' and San Guiliam di Mestre. Now to construct a bridge over the Venetian lagoon is a very different matter from building one in any other city. The city of the Doges must respect the rights of art and also its characteristic physiognomy; it is therefore not unnatural that the idea of a new bridge should have many opponents, and should be the subject of many heated discussions. It is needless to say that the most violent of these opponents are artists. This opposition on the part of the artist, both here and elsewhere, is praiseworthy, provided it is not directed against the free development of the requirements of modern life; for, to respect antique is just, but the exaggeration of respect is reprehensible. On the whole, the necessity for a new bridge at Venice can be denied, but at the same time it is to be hoped that the structure will correspond to the artistic exigencies of the place, for though it will be a work of public utility, it should be at the same time a public monument—a work of art. Three designs have been submitted: the first from the offices of Savignano, second from the engineer Chicchi of Padua, and the third from the Architect Speranza of Rome. I do not know how far either of these respects the artistic exigencies of the city, but, however, that none of these were discussed, because the question of the bridge was suspended by a prudent decision of the Communal Council of the city, which invites new studies before definitely voting a measure. The cause of the deliberation is the great influence of the opinion of Venetian artists who assembled in order to discuss the question. They were not unanimous however, there was a division in which they specified their ideas in two orders of day; in the first of which they affirmed the necessity, that if a bridge must be erected the artistic right of Venice should be respected. The second, voted by the minority, declared the necessity of a bridge, declaring that "it would cause a grave alteration in the aspect of the city." I believe that such an opinion of Ruskin and also of many other England who are enamoured of Venice who may now rest assured that—according to the general opinion—the question of the bridge over the Laguna has been indefinitely shelved. At any rate the project, after deliberation of the Communal Council, will not be modified, and will not be discussed, it be of artistic value. The supporters of the project who demand *in extremis* a new vault to the *terra firma*—like Oswald in "Ghosts" who cries out for the sun—are obliged to modify their idea.

Beith Parish Church was opened on Monday last week. It will hold 600 people and has cost £1660. The architect is Mr. Snodgrass.

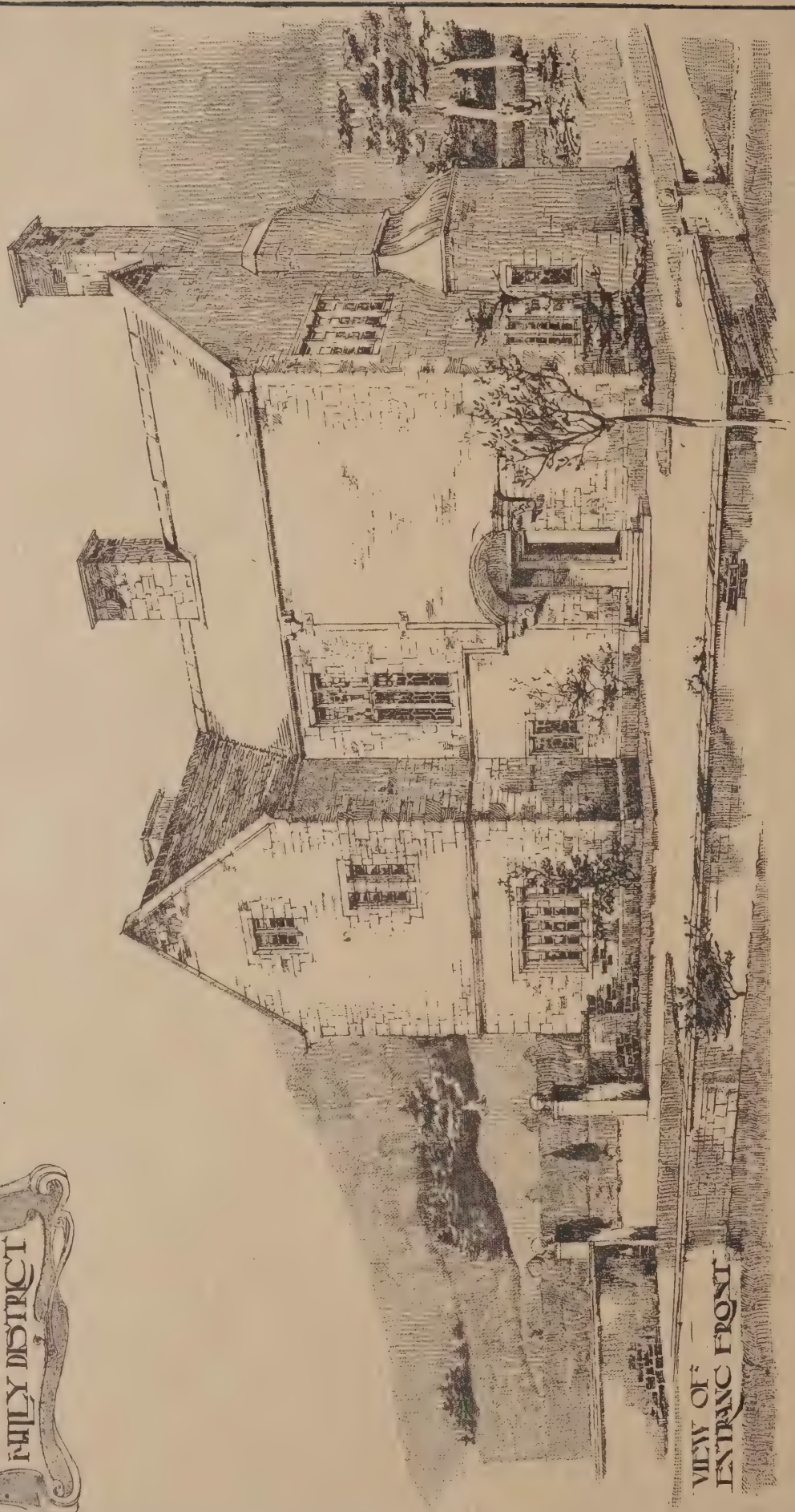
The Central Meat Markets, London, is stated, have been weakened by the action of the steam and destructive gases from the thousands of trains that pass and pass beneath the markets during the week according to the "City Press," there is no need to believe the rumour that the markets are likely at any moment to disappear in tunnels beneath. In places where the work supporting the fabric above has been weakened by the action of the gases and series of brick tunnels and archways are erected.



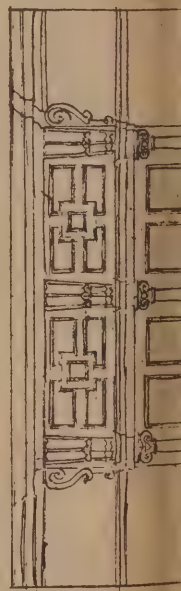
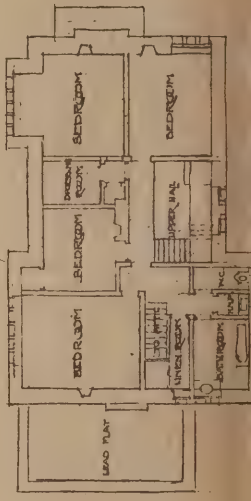
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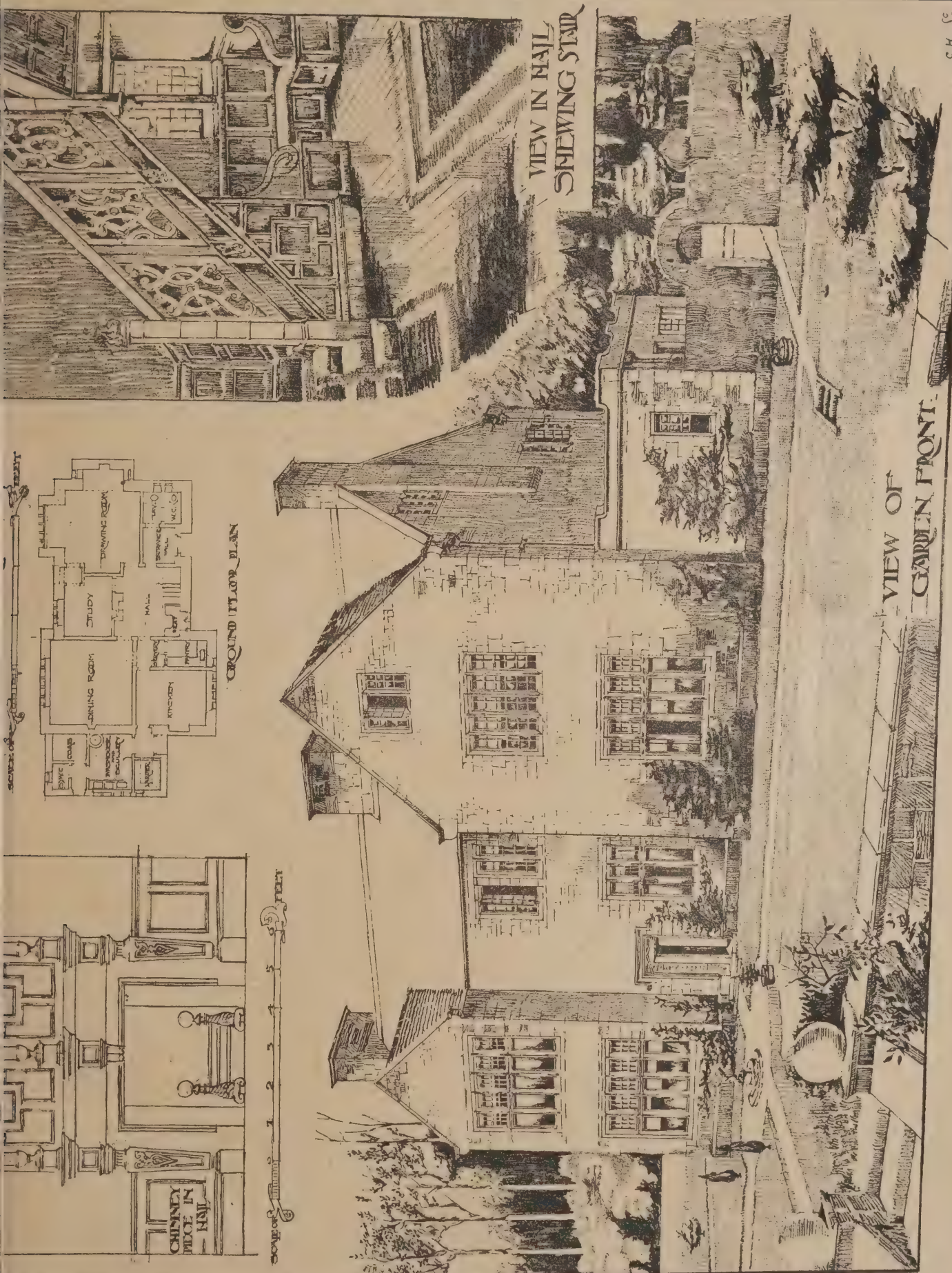
DESIGN FOR A  
HOUSE IN A  
FAMILY DISTRICT



VIEW OF  
ENTRANCE FRONT







DESIGN FOR A HOUSE IN A HILLY DISTRICT. BY GEORGE WITTET.

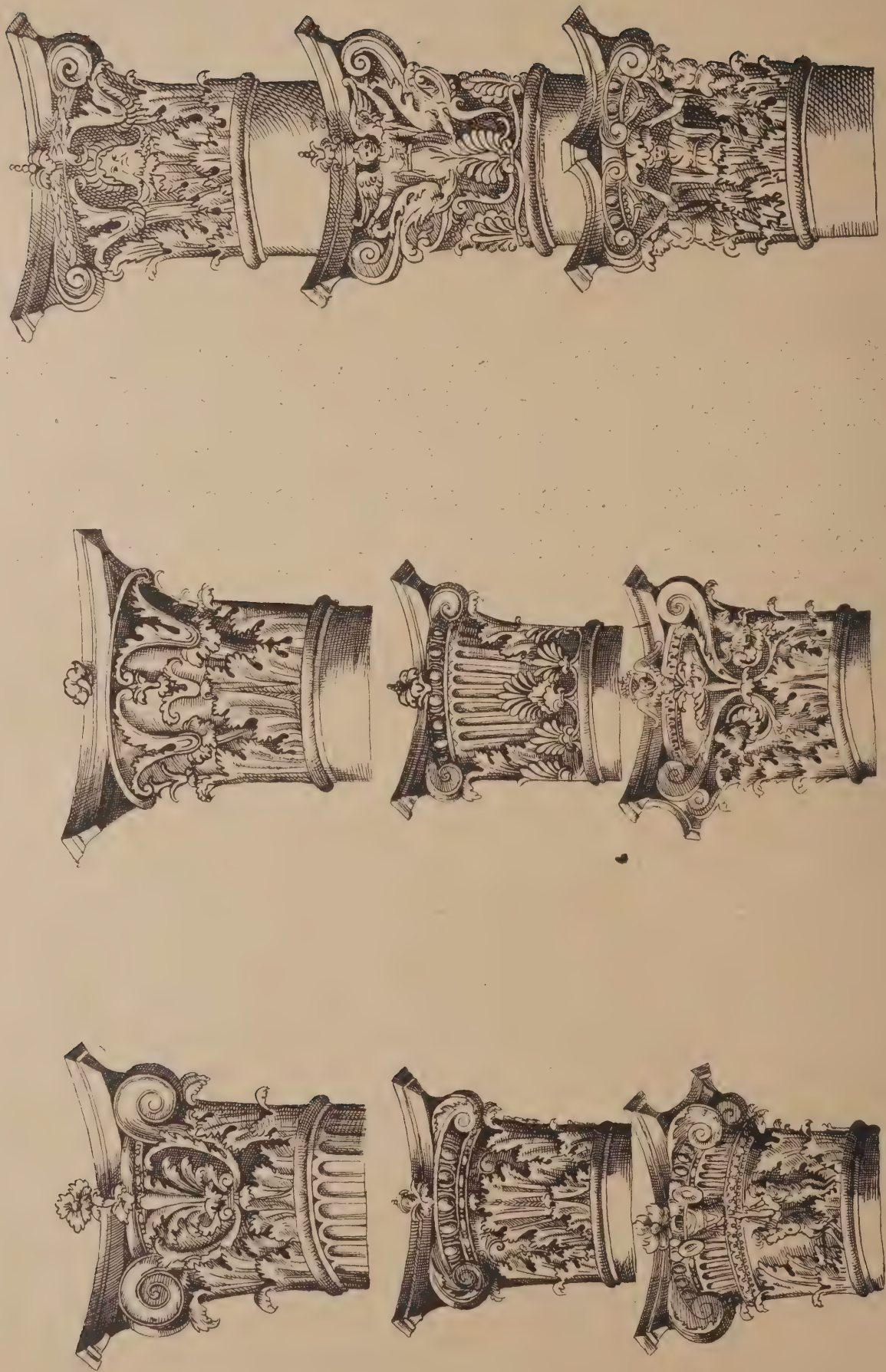


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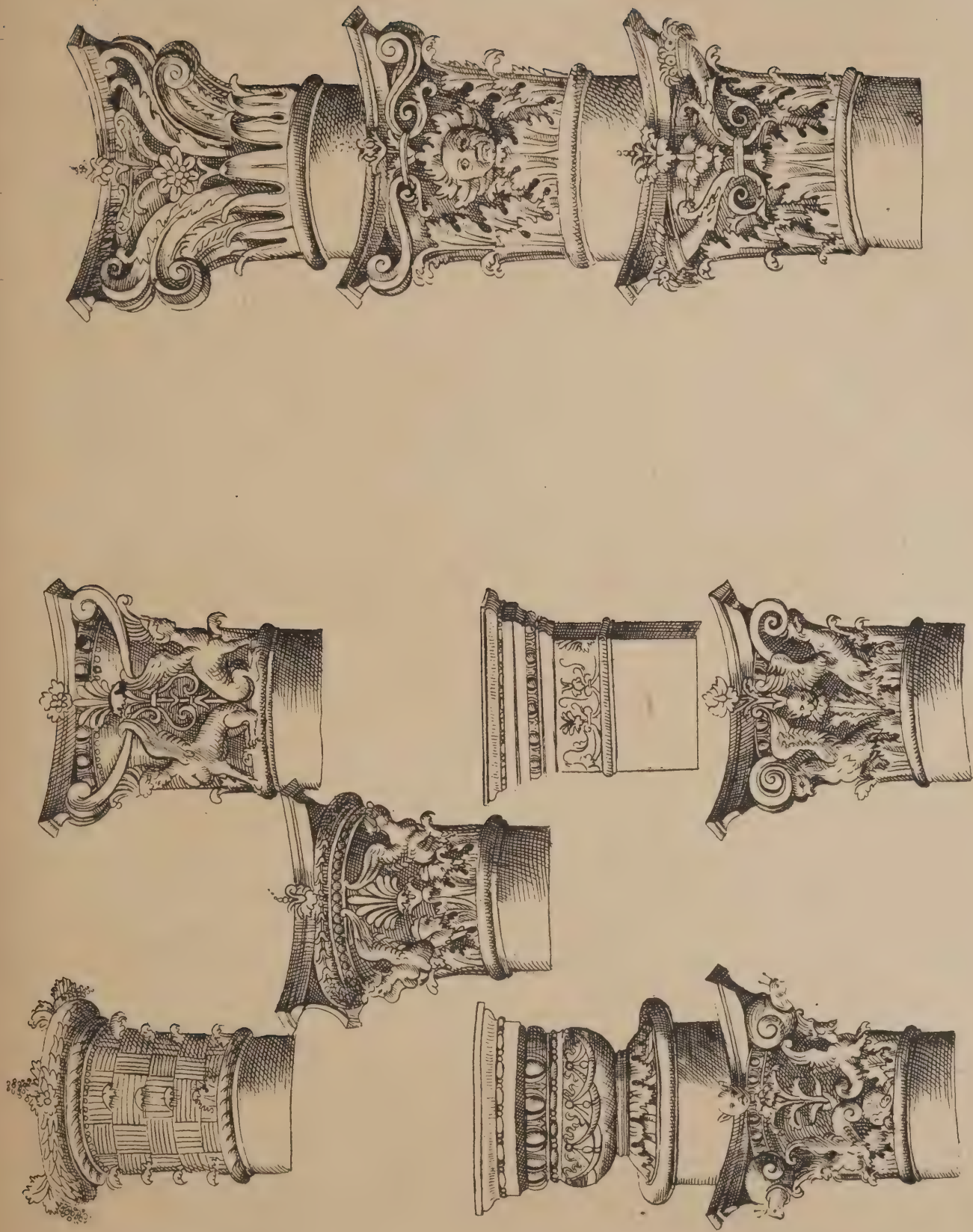
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SOME DESIGNS FOR CAPITALS. FROM THE ORIGINALS BY INIGO JONES.





SOME DESIGNS FOR CAPITALS. FROM THE ORIGINALS BY ÍNIGO JONES.



THE  
UNIVERSITY OF ILLINOIS



## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### PROPOSED BUILDING EXTENSION.

In reply to "A. B." (South Devon): The fifty-fourth bye-law prohibits the erection of a building such as proposed without having at the rise an open space, exclusively belonging to the building, of 150 square feet at least, and from 10ft. to 25ft. wide, according to the height of the building. The proposed plan seems clearly to violate these rules. The bye-laws do not limit the height to which the building may be raised.

A. H.

## DEFECTS IN PLASTER WORK.

*To the Editor of THE BUILDERS' JOURNAL.*

DEAR SIR,—Will you kindly answer the following question relating to plaster work: We found the stone lime broken away from the pricking up, not from the lath, which retained the key properly. We shall be glad to be advised whether it was the material that was wrong; the gauging and workmanship was all right. S. AND F. S.  
Yarmouth.

Yarmouth.

It is somewhat difficult to determine the cause of breakage without seeing the work; but it may be due to various causes: 1. The pricking up may not have been properly keyed—i.e., scratched—to retain the floating and setting coats; 2. The pricking up may have been dusty or too dry, or the suction too great to afford a good and retentive ground for the floating coat. Either of the above defects, singly or in combination, would have a tendency to failure of cohesion of the first and second coats.

W. MILLAR.

### MEANING OF "PRIME COST."

*To the Editor of THE BUILDERS' JOURNAL.*

DEAR SIR,—Will you kindly explain to me in the columns of the BUILDERS' JOURNAL, the exact meaning of the words "Prime Cost," used in a specification. Is prime cost the net or list price?—Yours truly,  
Hatfield. F. G. B.

Hatfield.

F. G. B.

The R.I.B.A., conditions for building contracts include the following clause respecting Prime Cost. "The words 'Prime Cost' or the initials P.C., applied in the specification to goods to be obtained and fixed by the contractor, shall mean, unless otherwise stated in the specification, the sum paid to the merchant after deducting all trade discount for such goods in the ordinary course of delivery, but not deducting discount for cash, and such sum shall be exclusive of special carriage, the cost of fixing, and contractor's profit." It is in all cases advisable to specify exactly what is meant by Prime Cost in order to avoid any possibility of dispute.

## SURVEYORSHIPS IN THE ROYAL ENGINEERS.

*To the Editor of THE BUILDERS' JOURNAL.*

DEAR SIR,—Will you kindly let me know, through your columns, the qualifications necessary for candidates to enter the Royal Engineers, what examinations it would be necessary to pass, also the salary?—Yours truly,  
A. S.

uly,

Official particulars of the examination for Assistant Surveyors in the Royal Engineers can be obtained gratis from the Secretary, Civil Service Commissioners, Cannon Row, S.W. Candidates must be between twenty-one and thirty years of age, must have served for at least three years in the office of an architect, civil engineer, surveyor, or builder, and must produce evidence to show that they have profited by this training. The salary commences at £180 a year, rising at the rate

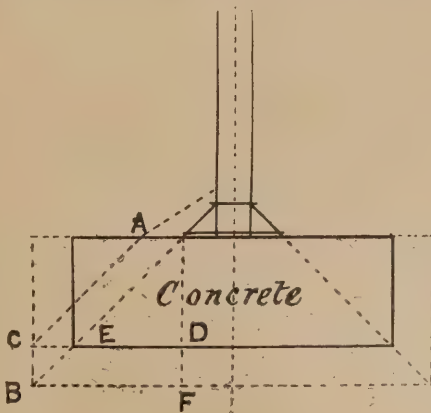
of £10 each year till £280 is reached, after which further promotion is usual, though it may be delayed, with a usual maximum of £600 a year, while there are a few more highly paid posts. Retirement at sixty-five years of age is compulsory, with pension for the rest of life at the rate of as many sixtieths of the pay being received at date of retirement as the surveyor has been years in the service, with a maximum of forty-sixtieths. G. A. T. M.

## Correspondence.

## FOUNDATIONS FOR FACTORIES.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—Since my second letter appeared in your issue of March 15th (p. 91), it has occurred to me that some of your younger readers may be misled by a remark therein, which is illustrated by a little sketch, regarding the spread of vertical pressure. I mentioned, as a matter of argument, twice the thickness of the concrete as the extreme limit of actual spread of pressure, and that, of course, would only be possible in exceptionally good concrete. As a matter of precaution, I should have added that the *safe* limit of spread is much less, and is that defined by an angle of 45 deg., *i.e.*, that the projection (DE in the sketch) of the concrete should not exceed its own thickness. I always keep well within



that limit, even with cement concrete. If it is necessary to have a larger area than the angle gives, either (1) the concrete can be thickened, giving the enlarged projection F B, or (2) the iron base which must, under any circumstances, be large enough to meet the safe crushing resistance of the concrete per foot, can be spread to A, so that the same spread D C is reached by the same angle A C, or (3) iron joists can be embedded near the bottom of concrete; but this is serviceable only in the best cement concrete. Many considerations arise out of this last method, with which, however, I will not trouble you now.

J.D.

*To the Editor of THE BUILDERS' JOURNAL.*

SIR,—In replying to J. D.'s first letter on this subject, I had no desire to depreciate the value either of his theories or his experiments. In that letter he appeared to me to dogmatically assert as a fact, and not merely as an opinion, that the employment of a continuous and substantial bed of concrete on a soft soil where great weights have to be carried is calculated to ensure settlements in the building.

My reply was only intended to controvert his statement by recording personal experiences where this method of procedure had been adopted without the injurious results foreshadowed by J. D.

I agree that the pressure on the site according to my plan cannot be mathematically uniform, and in using the word "uniform" in my paper, I intended the term to be used in a comparative sense.

I quite understand that it is possible as J. D. alleges to proportion the foundations respec-

tively to the loads to be carried, if these can be determined with accuracy; but it is for the reason that the various and respective loads cannot, I maintain, in practice, be fixed with anything approaching strict accuracy that I prefer to depend upon the continuous and substantial bed of concrete, thereby obtaining additional bearing surface on the ground, and consequently a wider distribution of pressure thereon, although this distribution must admittedly be dependent upon the quality and thickness of the concrete.

This method of distributing the load will be effective, in my judgment, in all buildings where the columns carrying the floor beams are spaced at the usual intervals, which invariably range, where heavy weights have to be carried, from 12ft. to 13ft. In exceptional distances, between the columns as illustrated by J. D. in his diagrams, I should, to ensure distribution of the pressure to further points, embed steel girders in the concrete.

I should like to say that I know an instance of a seed warehouse of five floors which was built upon soft ground, with varying and substantial beds of concrete, in the manner advocated by J. D. The floor columns were uniformly distributed at intervals of about 13ft. A material subsidence occurred under some of the columns after the floors were loaded, with the result that all the floors were more or less crippled. It is my opinion that if a continuous and sufficient bed of concrete had been put over the whole site, and yet of a considerably less thickness than was placed under the individual columns, these unequal settlements would not have occurred.—Yours truly,  
J. H. PEARSON.

## NATIONAL CONTROL OF BRITISH LAND.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—The “Housing of the Working Classes” and “Britain’s Food Supply” are surging to the front as urgent national questions. The ownership and use of every acre of agricultural land and of every square yard of building land within the narrow limits of this “tight little island” should, in my opinion, be under legislative (national) control. It is to the interest of the nation generally and individually that all who claim ownership of agricultural land shall be responsible to the Legislature:

- (1) That such land be cultivated so as to augment, in the highest possible degree, the quantity and quality of the food supply of the people.
- (2) That in its cultivation the full proportion of labour shall be employed.

And as to building land:

That on each plot there shall be erected houses, commodious, well drained, well ventilated, and well lighted, the best suited to the requirements of those who will of necessity inhabit them.

By the Prussian Land Act of 1881 the owner who neglects to so cultivate the land as to ensure the most abundant produce, or who does not employ adequate agricultural labour, forfeits his right to continued ownership thereof, the Legislature steps in, sells the land, and hands over the proceeds to the recent negligent or incapable owner, who can invest his capital in a manner more congenial to his tastes and capabilities.

In New South Wales a similar law exists as to mining land, whereby it is enforced that the amount of labour employed shall be in due proportion to the extent of the mine. The same principle can be readily applied to building land in this country by conferring on our county councils "compulsory purchasing powers."

In many parts of London and in other British towns and cities there are broad open streets, bordered on either side by mere "cupboards" of houses, small rooms, low ceilings, bad ventilation, and but little light, thoroughly unwholesome dwellings. Why should the owners be allowed to continue to let for profit these unwholesome dwellings, any more than the baker be allowed to sell unwholesome bread?

The greater part of these so-called houses



are near the end of their leases, and the repairs which can be legally enforced immediately, or in a few years, will consume the whole of (or more than) the rent of the now remaining period. These tenements, purchased at an official valuation under compulsory powers, would cost but little, and upon their sites the councils could enforce the erection of houses fit for human habitation. A public meeting will shortly be held in London by the "Working Men's Home Union" to fully discuss this important question, to which meeting tenants, landlords, councillors, and others from all parts of Britain will be heartily welcomed.—Your obedient servant,

JAMES HAYSMAN,

President "Working Men's Home Union."  
Finchley Road, Hampstead, London.

## COTTAGE HOMES AT MIDDLEWOOD, NEAR ROCHDALE.

By ESTHER WOOD AND G. LL. MORRIS.

(Continued from page 103.)

THE girls' cottages (Figs. 11, 12, 13, 14) in the Middlewood Settlement differ in plan from the boys', but have the same general arrangement of rooms; the ground floor being

particular purpose. It is, of course, quite possible to criticise certain of the arrangements, but it will be found generally that such alterations mean some corresponding drawback rather greater than less in degree. The girls' home is not quite so satisfactory, the long and straggling hall and the large landing on the first floor are points that might possibly have been improved upon. The principal bedrooms, however, are well placed, and, like both the boys' home and the Receiving Home have cross lighting and ventilation, a thing to be desired. A pass door on one side of the fireplace of the large central bedrooms, answers the same purpose as that in the Boys' Cottages.

In the planning of Cottage Homes, there still exists some difference of opinion among Poor Law Guardians about the number to be housed in each dwelling. Many Boards of Guardians have found from experience that eighteen to twenty are too many, and that the number should not exceed twelve, or at the most fifteen. Twelve is the number agreed upon by the Rochdale Guardians, and it may safely be assumed that there is less likelihood of the children being treated too much *en masse*, as must happen when the members are increased. The cost of administration is more, but the chance of the Homes becoming remedial of pauperism is greater, and unless they fulfil this purpose—the object of their erection—the whole idea underlying the

possible for two children to use the same water for washing; the lavatories consisting of two deep sloping slate slabs, resting on a porcelain channel, the children not being able to get any water except from the running lever taps, with rose outlets. The slate slabs are provided to prevent the splash, and the channel to act as a waste. The floors of both lavatories and bath rooms are tiled, and also the dadoes to a height of 3ft. 6in. This may seem extravagant, but it is very desirable from a sanitary point of view, and possibly in the end more economical. The continual re-newing of the paint on the walls would soon exceed the extra cost of tiles and, as the plaster in such rooms gets very easily knocked and damaged, an untidy appearance would soon be given to these rooms.

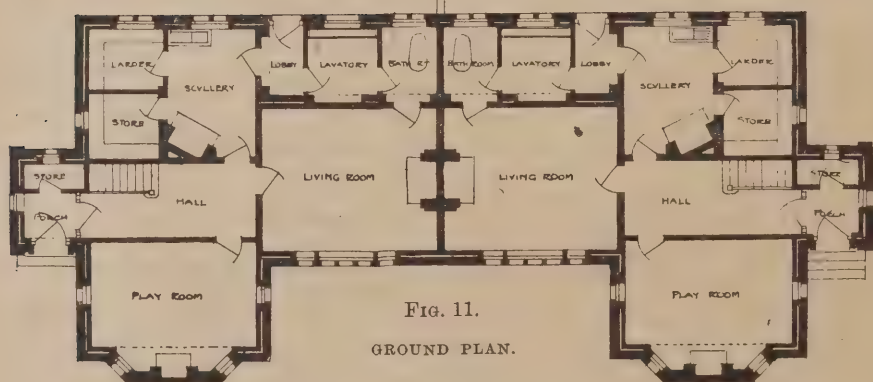
Fire-places are so skilfully planned that the flues nearly always gather together in the middle of the ridge, or very near it; by this means the warmth of the building is increased when the fires are alight, the hot air travelling up through the centre of the buildings. The internal wood is of varnished pitch pine, as it can be easily kept clean; painted woodwork, however, or pitch pine stained, would have been preferable; the extra labour involved is little, and of its more pleasant appearance there is no question.

Ventilation, especially that of the bedrooms, is provided by special inlet tubes and extracting flues, and air is also admitted behind the transoms of all windows by a hit and miss arrangement. In the bedrooms the windows are on opposite sides of the rooms, and carried as dormers right up to the ceiling.

The washhouse and out-offices are situated in the rear of each semi-detached block. It is suggested by some guardians that this prevents the possibility of the foster mothers disagreeing over the condition of the washhouse as is sometimes the case when one washhouse is provided for two cottages.

The closets are on the pail system, and the soil will be used upon the land. Main sewers are laid in the two roads, each cottage connected, but having disconnecting traps before entering the sewers. At the head of the main sewer is an automatic flushing chamber. The sewers discharge into settling and precipitating tanks, the solids being precipitated, and the clear effluent overflowing into a present brook drain. No drains enter any of the houses, and manholes for cleaning and inspection purposes are placed at the change of direction in the drains. Good water is obtained on the site from springs, and a small reservoir will be formed on the high lands, from which water will flow to all the homes. The homes will be lighted by the electric light, and the current will be brought over the hill from the workhouse by means of overhead wires.

The cottages are well built, the outside walls being constructed with a cavity—the outer portion being faced with Yorkshire pitch-face par points, and lined with brick; on the other side of cavity is the four-and-a-half brick wall. Externally the buildings present a more picturesque appearance than is usual, harmonising fairly well with the surrounding district. Stone is used chiefly, and the whole of the roof—covered with blue slate—overhangs the walls both at the eaves and the gables. Passing round the site we feel that these cottages might with a very little additional outlay have been built still more in character with the surrounding moorland country. Instead of the pitch faced par points, which in reality are so ugly, and yet are used so frequently now-a-days in this district, how much more beauty would have been gained by building the walls like the cottages and manor halls of an earlier age: smooth face par points varying in width or beginning moderately large at the base and getting smaller towards the top—with colossal bonding stones at the angles, and possibly stone copings and stone slating if the money would have allowed. These would have given the cottages a character which they now seem just to miss. Notwithstanding this criticism the whole scheme, both from a practical and in a less degree from an artistic point of view, is far in advance of the great majority of cottage homes.



GIRLS' HOME. MESSRS. BUTTERWORTH AND DUNCAN, ARCHITECTS.

occupied by the play room, large kitchen or living room, scullery, bath room, larder, and lobbies; while the upper story has its two principal bedrooms holding eight and four respectively, and its spare room and mother's room.

There is little criticism to be made upon the boys' homes, both ground and first floor are as near perfection as they can well be for their

Homes becomes of no avail. An increased outlay now upon small homes is likely to be more effective in the long run than a smaller outlay upon larger but fewer homes, less costly in administration. It would be as well for guardians to bear this in mind.

Some of the practical details for the working of the cottages are interesting. The architects have taken special precaution to make it im-



# THE ARCHITECTURAL ASSOCIATION.

## REFLECTIONS ON THE ENGLISH RENAISSANCE.

By REGINALD T. BLOMFIELD.

(Continued from page 102.)

THE discussion following Mr. Blomfield's paper was opened by the President (Mr. G. H. Fellowes Prynne) who said that they had all listened with great enjoyment to a paper they had been looking forward to for a long time. He thought the paper was worthy of a good discussion. Mr. Blomfield had clearly shown that by a full knowledge was accomplished good work.

Mr. L. A. Shuffrey briefly seconded the vote of thanks.

Mr. A. T. Bolton thanked Mr. Blomfield not only for his paper, but for the excellent drawings he had exhibited. Mr. Bolton contended that craftsmanship was not the only thing to consider, but the principles of Architecture. For in those buildings on the Acropolis at Athens were all rubbed down by slave labour, yet how fine they were. In St. Paul's, Covent Garden, by Inigo Jones, his craftsmanship was not that which remained, for the church has been so much altered. For all that the power of the design still remained. There was something more than craftsmanship about it to give it its present beauty. Facts such as these, he considered, went a long way to diminish the importance of the craftsmanship idea. He did not consider an age of machinery fatal to Architecture, although the craftsmanship would be better present. Mr. Blomfield had not referred to one defect of the Anglo-

to hear such a paper in the metropolis. Looking around on the metropolis what did one see. There was a cathedral, St. Paul's. One saw a set of craftsmen practically spoiling the Architecture. What right had any portion of the British people to call in a man, however eminent (and no one wished to say a word against any man of genius as such), to spoil magnificent Architecture? Again, looking westward, one saw a bridge, shortly to be built. A bridge over the Thames, and in such a city as London, should, above and beyond most things, be a work of Architecture, not only a means of crossing from one side to another. But where was the architect? Supposing a body of architects did interfere with the engineer, who was justly to be considered a craftsman, for he daubs on ornament, how were they treated? He wished that some of Mr. Blomfield's general principles could be driven into those people who had the control of public buildings.



FIG. 13.



FIG. 14.

FIG. 13 FRONT ELEVATION, AND FIG. 14 BACK ELEVATION, OF GIRLS' HOME. MESSRS. BUTTERWORTH AND DUNCAN, ARCHITECTS.

Mr. Leonard Stokes said that the President had thought the paper worthy of discussion; well, all he could say was "Ditto, ditto," to everything. The men who thought that without knowledge they would be original were the curse of their generation. If they only knew a little more they would do a good deal less, to the benefit of everybody. Mr. Blomfield had not disparaged craftsmanship, but he had truly said, this was not everything. An architect ought to have a better knowledge of crafts than the workmen, for he went about more than they, and was able to grasp the principle of the work. Mr. Blomfield had said something to the effect that Architecture was not merely ornament; they might have thought this was obvious, but it was not. He, himself, was always saying to his assistants "Grasp a few principles." He advised his hearers to hang such texts up in their bedrooms, or where they could not help coming across them. He concluded by proposing a hearty vote of thanks to Mr. Blomfield.

Classic school, which was not very successful in the treatment of the ordinary small house. There had been a wonderful development in the modern villa house, and Mr. Norman Shaw had put them upon the right path. He did not think that the progressive character of Architecture during the Renaissance had been sufficiently dealt with. A good deal could be learnt from it. The Renaissance architects had solved many problems in an admirable way, such as the use of the dome.

Mr. A. H. Hart expressed dissent from the statements made as to originality being lost by too much study. He considered a great deal of study of old work was necessary, and the man who had most familiarity with that work was most likely to be original in his own. The time spent in study would well be repaid.

Mr. G. J. T. Reavell said that he was glad to hear general principles laid down. Up till then he never had heard any, but Mr. Blomfield had taught them a great deal.

Mr. C. H. Brodie said that it was wonderful

Mr. M. Garbutt thought that the people responsible for the decoration of St. Paul's were not wholly to blame. If the present decorators had been replaced by an architect, was there one who had had sufficient training in colour? In regard to Vauxhall Bridge, none of the critics of the design had given a sketch showing how to do it. The engineer was asked to design a bridge with some architectural pretensions, and he had no doubt done his best.

Mr. G. H. Fellowes Prynne, in summing up, said Mr. Stokes asked what there was to disagree with. Well, he had thought that some criticism would be called up by the despondent tone of the lecturer in speaking of modern Architecture. He (the speaker) thought that there was a glimmer of hope among this chaos, for chaos it was, and they should not be disheartened. Originality was to be got in the end by the study of the old Architecture. He thought the complaint about the destruction of the Architecture of St. Paul's would not



appeal to the general public. He hoped the work of destruction would be put an end to. He then put the vote of thanks, which was carried with acclamation.

Mr. R. T. Blomfield, in reply, said many interesting points had been brought forward by the discussion. Mr. Stokes had put his (the speaker's) remarks in a nutshell. What he understood him to say was that an architect's craft should be his own craft. An architect was the master mind, and should master all the crafts in their relation to each other. He thought there was a great deal to study in eighteenth century work, of which there was a large quantity of quite small work all about England. What Mr. Bolton had said about the Italian building was very valuable. If in Rome one could divest oneself from the obtrusion of the large amount of trumpery ornament, there was much in the building which was very fine. Mr. Bolton had clearly pointed out that a fine effect was to be got apart from the conditions of craftsmanship. If in Architecture a problem was really solved, it would stand the wear of any time. Originality, he thought, was to a great extent a misconception. It was the gift of God—not a thing to be acquired, though, of course, the gift could be developed. Modern architecture could not be arrived at through craftsmanship. An architect should always be studying, with an idea not of heaping up knowledge, but of mastering a method of expression of his own ideas.

The President announced that the annual soirée would take place at St. George's Hall, Langham Place, on April 21st. The ladies' night would be on April 19th. The next lecture would be read on April 14th by Mr. F. W. Pomeroy, on "Modelling as Applied to Architecture," with practical demonstrations.

## Keystones.

**A New Wesleyan Chapel** is to be erected at Newhall, at a cost of £5000 to £6000.

**The Site of the Stirling Public Library** is to be in a new road which will run through the Corn Exchange Square.

**A section of scaffolding gave way** last week at Messrs. W. D. and H. O. Wills's new factory at Ashtongate, Bristol, and one man was killed, while two others were injured.

**New London County Council Buildings.**—The L.C.C. has decided to purchase, at a cost of £100,000, the freehold interest in Nos. 26 and 27, Cockspur Street, so as to erect better accommodation for its staff.

**A new nurse's house** was opened on Wednesday last in connection with the Hospital for Sick Children, London. For the purposes of the house the adjoining Hospital of St. John and St. Elizabeth had to be acquired in May, 1898, at a cost of £30,000.

**The Cause of the Sewer Fatality**—An inquest was held, on Thursday last, on the two men whose death we recorded last week. Mr. Montgomery, brother of one of the deceased men, gave evidence to the effect that the sand through which they were working was treacherous, and some undercurrent probably loosened the struts, with the result that the sides fell in. Mr. G. F. Ellis, assistant surveyor to the St. Pancras Vestry, stated in his evidence that on the day of the accident he observed that there was no skeleton frame at the top of the runners as there should have been, and the error was, in his opinion, the too quick removal of the runners, which set free the sand, dislodged the struts, and caused the collapse. Mr. W. N. Blair, surveyor to the vestry, said that it would have been well to have left the runners fixed even after the filling in was done; but if removed at all, these supports which kept back the shifting sand, should have been removed very carefully and slowly. The jury returned a verdict of accidental death in both cases, and expressed the opinion that the runners supporting the bottom portion of the trench were too hurriedly drawn, thus causing the sides of the cutting to fall in.

## R.I.B.A. STUDENTSHIPS AND PRIZES, 1899-1900.

**THE** list of subjects for competitions in 1899-1900 has just been issued, and is as follows:—

For the Royal Institute Silver Medal and 25 guineas for Essays: A Review of the Architecture of the Elizabethan Period (about 1550-1620).

For the Royal Institute Silver Medal and 10 guineas for Measured Drawings: Drawings of any important buildings, classical or mediæval, in the United Kingdom or abroad. Subjects suggested as worthy of illustration.—One of the Colleges of Oxford or Cambridge; (Scotland) Holyrood Palace, Edinburgh; Jedburgh Abbey; (Wales) Chirk Castle, Denbighshire; (Ireland) Cashel Cathedral, or any Monastic Building; (London) St. Alphege, Greenwich; St. George's, Hanover Square; The Confessor's Shrine and the Tomb of Edward III., Westminster Abbey; All Hallows, Barking; The West Portico of St. Paul's Cathedral; St. Mary Woolnoth; St. Mary-le-Strand; (Cambridgeshire) The Lady Chapel, Ely; (Derbyshire) Ashbourne Church; Bolsover Castle; (Dorsetshire) Barn. at Abbotsbury; Manor House, Athelhampton; (Gloucestershire) Redland Chapel, Clifton, Bristol; (Hampshire) Bramshill; Christchurch Priory; Romsey Abbey; (Lancashire) Bramhall Hall; (Monmouthshire) Chepstow Castle; (Northumberland) Ruined Buildings at Lindisfarne; (Norwich) St. Peter's Mancroft; (Nottinghamshire) Steeple at Newark; (Oxfordshire) Burford Priory; (Somersetshire) The Chapter House and the Lady Chapel, Wells; St. Cuthbert's Parish Church, Wells; (Staffordshire) The Lady Chapel, Lichfield; (Surrey) Sutton Place, near Guildford; (Sussex) Cowdray House, Midhurst; (Worcestershire) Pershore Abbey, near Worcester.

For the Soane Medallion and £100: Design for a School of Fine Art, placed in a park, or public garden. The accommodation to include approximately:—

Entrance hall and staircase, about 2600 sq. ft.; Office and council room, about 1500 sq. ft.; Lecture room, about 1700 sq. ft.; Museum or gallery of casts, about 2800 sq. ft.; Two class rooms (Architecture), together about 2800 sq. ft.; Two class rooms (Sculpture), together about 2800 sq. ft.; Two class rooms (Painting), together about 2800 sq. ft.; Life school and models' room, about 1000 sq. ft.; Three rooms for professors, each about 500 sq. ft.; Large hall for exhibitions, meetings, &c., about 4000 sq. ft., with ante-room and one small room, extra; Library, reading room and librarian's room, together about 3250 sq. ft.; Main corridors to be 8ft. wide. The basement story to contain lavatories and cloak-rooms for each sex, storerooms, rooms for heating and electric lighting installation, residence for caretakers, rooms for attendants, refreshment rooms.

For the Pugin Travelling Studentship (Silver Medal and £40): Selection of drawings (with testimonials) illustrating the mediæval architecture of Great Britain and Ireland.

For the Godwin Bursary (Silver Medal and £40): Selection of practical working drawings, or other evidence of special practical knowledge, and testimonials.

For the Owen Jones Studentship (Certificate and £100): Testimonies of acquaintance with colour decorations; successful candidate to submit an original design by December 23rd, 1901, for the coloured decoration of one bay of one of the aisles of the nave of St. Paul's Cathedral.

For the Tite Prize (Certificate and £30): Design for an isolated clock tower and belfry in a public place, the centre of the clock dial to be about 60ft. from the ground.

For the Grissell Prize (Gold Medal and ten guineas): Design for a spiral staircase entirely of stone, carried on vaulting in a circular hall or tower, having an internal diameter of 35ft. The clear width of the stairs to be 8ft. The staircase to rise from the ground to the second floor; the total height from ground to second floor not to exceed 40ft. The top storey to be vaulted over, the height being optional. The lighting to be from windows.

A pamphlet containing further particulars for the guidance of intending competitors can be obtained from the Secretary, Royal Institute of British Architects, 9, Conduit Street, London, W.; price (to non members) 3d.

## Professional Practice.

**Aberdeen.**—A new chapel is to be erected at Blair's Cottage in connection with a scheme of extension which is being carried out at the college. It will stand on the east side of the college buildings. The spire will rise to the height of 150ft., and the entire work, chapel and spire, will be in Aberdeen granite. The chapel is to cost about £12,000, and the new buildings, as a whole, are to cost £40,000. The architect for the buildings, apart from the chapel, is Mr. R. G. Wilson.

**Dundee.**—A villa is proposed to be erected by Mr. H. T. Munro, of Lindertis, on the south side of the road between Kirriemuir and Craigton. The house has been arranged with a long frontage, giving all the rooms a southern exposure. The stones are to be taken from the Lindertis Quarry, and the house will be built of rubble and harled with margins of stone round the doors and windows. The roof will be covered with American green slates, so as to give variety in colour to the general appearance of the building. The architect is Mr. J. Murray Robertson, Dundee, and the contractors are:—Mason, Messrs. Watterson and Son, Forfar; joiner, Mr. Charles Ogilvie, Kirriemuir; plumber, Mr. D. Brown, Dundee; slater, Mr. J. Walker, Alyth; and glazier, Mr. Savege, Kirriemuir.

**Dagenham, Essex.**—The County Borough of West Ham, having acquired the Rookery Farm at Dagenham, Essex, 116 acres in extent, have isolated a space of 3½ acres on which they have erected a smallpox hospital from designs prepared by Mr. Lewis Angell, the borough engineer and architect. The hospital has the following accommodation:—An entrance lodge and offices; an administration block, including the medical officer's and matron's rooms, twenty-eight bedrooms for nurses and attendants, mess rooms, dispensary, kitchen, laundry, and other offices; two pavilions containing four wards, each ward 60ft. long by 26ft. wide, also a receiving room, bathrooms, nurses duty rooms and sanitary annexes; isolation block for four beds and offices; discharging block, laundry, disinfecting chamber, and mortuary; the hospital will accommodate forty-four patients and necessary staff. The materials used are stock bricks with Portland stone and red brick dressings. The buildings have cost about £17,000 exclusive of site. Messrs. Gregar and Sons of Stratford were the contractors.

**Kilbarchan.**—A parish church is to be erected, and a joint committee have accepted the tenders of the following contractors:—Mason and joiner, Mr. J. Woodrow, of Bridge-of-Weir; slaters, Messrs. Keenan and Kelso, of Paisley; plumber, Mr. J. Fleming, of Paisley; plasterers, Messrs. George Thomson and Son, of Johnstone; glaziers, Messrs. Tytler and Son, of Greenock. The architect is Mr. W. H. Howie, I.A., of 131, West Regent Street, Glasgow. The church is estimated to cost upwards of £6000.

**London, S.W.**—The enlargements at St. John's College, Battersea, will consist of new kitchen quarters, a new college hall to accommodate 132 students and 15 masters, a new wing to hold 40 students with masters' and servants' quarters and bathrooms, a lecture theatre, classrooms, a workshop, a modelling room, and art room, and a physical laboratory. The whole of the existing buildings are to be remodelled. Mr. A. H. Ryan Tenison, of 7, Great College Street, Westminster, S.W., is the architect, and Messrs. C. J. Mann and Sons, of 29, Great George Street, Westminster, S.W., the quantity surveyors.



# Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,

March 29th 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

## Design for a Country House.

THE design for a house which forms one of one inset plates this week, was prepared by Mr. George Wittet and obtained the first prize in a competition promoted by the Perth Architectural Association. The building was to be of stone and to be suited to a hilly district. The elevations are treated in a simple manner with large wall spaces, especially on the north or entrance front. The ground floor consists of dining-room, drawing-room, hall, and kitchen offices. Cloak and lavatory accommodation is provided at the entrance. The hall with the staircase is made an important feature. It is well lit and has a fireplace with handsome chimney-piece, and could be utilised as a gentlemen's smoking-room or lounge. On the upper floor there are four good sized bedrooms and one dressing-room; with bathroom and linen-room, &c., the servants' apartments and lumber-room being arranged in an attic floor.

## Builders and the London Government Bill.

WITH the purely political aspects of the London Government Bill, now before Parliament, this journal is not concerned. But some of its provisions very closely affect the practice of architects, surveyors and builders, and upon these it is quite within our province to express an opinion. That opinion is—and we think it is shared by the majority of builders—that unless the bill is amended in some very important details, it will inflict serious injury and inconvenience upon all who are concerned in the supervision or carrying out of building in the metropolis. The proposal to transfer from the County Council to the new borough councils the administration of the Building Acts, is one of the most objectionable features of the bill. If adopted, it will effectually do away with uniformity of administration.

## A Typical Opinion.

MR. HENRY HOLLOWAY, one of the largest builders in London, in a recent interview, pointed out very clearly how this would affect the builders. "The Building Act Committee of the London County Council," said Mr. Holloway, "administer the Building Acts in the hole of London. It is advised by an experienced expert in the person of its architect. His interpretation of the Acts will be the same as Fulham as for Finsbury, for Woolwich as for Westminster. Now see what will happen these proposed new Councils are called upon to administer the Acts. They will be advised by their surveyors. What will the builders do? Take the case of our own firm. We find that one clause or sentence in the Building Acts is interpreted in one way by the surveyor of Westminster, in another by the surveyor of Woolwich, and in yet another way Whitechapel, and so on, in all of which cases we may be putting up buildings." The condition of the poor builder who has to

comply with the varying requirements of all the different authorities Mr. Holloway could only express in the classic phrase, "E won't know where 'e are."

## The Surveyors' Objections.

THE building clauses of the bill do not commend themselves to the surveyors any more than to the builders. A petition to the House of Commons against the bill has been drawn up by the District Surveyors' Association. The petitioners feel that "their official, personal, and private rights and interests, as well as their ability to discharge their duties in administering the London Building Act 1894, will be very materially and prejudicially affected if the bill becomes law in its present form." They object to the proposed transfer of powers to the new borough councils, pointing out, amongst other considerations, that the local councils will probably contain among their members builders and owners of property, and that it will manifestly be very difficult for a district surveyor to enforce the provisions of the Building Act against a member of the borough council; they suggest that the bill should be amended so as to prevent the borough councils having the power of appointment, control and dismissal of the district surveyors. The petition concludes with a reference to the importance of uniformity of administration which the bill would destroy. "In the hands of the central authority an evenness of administration of the discretionary powers is secured that would be impossible in the hands of a number of local authorities, who would each exercise the control in their own way irrespective of what was done in other parts of London."

## The L.C.C. and its Architect.

IT has no doubt struck many people as a curious thing that the offer by the London County Council of £1500 a year for the services of a superintending architect failed to attract candidates of very high qualifications, and that, in order to obtain the man they wanted, the Council should have found it necessary to increase the offer to £2000 a year. Some may have been inclined to draw the erroneous inference that architects, as a body, earn such huge incomes that £1500 a year is a mere trifle in their eyes. Mr. Thomas G. Jackson, R.A., in a letter to the "Times," suggests a reason which, if correct, strikes us as one that is very creditable to the profession. The duties of the office, he says, consist so largely in enforcing County Council rules with regard to building and sanitary matters, and give so little scope for the display of architectural abilities, that an architect who loves his work will not be tempted by a large salary to resign it for such humdrum tasks. Mr. Jackson makes the suggestion that a competent surveyor should be appointed to perform the routine duties of the office, and that when artistic matters are under consideration the Council should call in some artist from outside—architect, sculptor, or painter—and so get the best advice the profession of art can give. This suggestion, as we now know, has not been acted upon, but the appointment of Mr. W. E. Riley does not, we hope, preclude the Council from following out Mr. Jackson's idea so far as to avail themselves, when occasion demands it, of the best artistic advice.

## Restorations at Winchester Cathedral.

FOR nearly three years the roof of Winchester Cathedral has been in the hands of builders, who have been giving it a thorough overhauling, and not before it was time. The ancient timber work was sadly decayed, and the stone vaulting beneath the nave was in a dangerous condition. The Society for the Protection of Ancient Buildings have expressed themselves entirely satisfied with the plans adopted by the architect, Mr. Colson, and the manner in which the work has been carried out by the contractors, Messrs. Thompson, of Peterborough. The great altar reredos has been completed at a cost of about £2000, and the dedication of the work was pronounced by the Dean last Friday.

## The Gladstone Memorial.

AT a meeting of the Executive Committee of the Gladstone Liberal Memorial Fund, presided over by Lord Tweedmouth, and held on Friday last, it was reported that subscriptions amounting to £3689 had been received through local collections, and £560 had been remitted direct to the central offices. The gross total up to date was £4249. The date fixed for closing this fund is April 15th next. Mr. F. W. Pomeroy, the sculptor, is making satisfactory progress upon the statue, and it is hoped that the work will be completed by the end of the year, in which case the opening of the next session of Parliament will witness the unveiling in the Central Lobby of the Houses of Parliament. With regard to the national fund, inquiries show that it has increased satisfactorily of late, and the total amount is upwards of £29,000.

## Art Students' Exhibition.

THE works submitted by candidates for the County Council's Technical Education Board's Art Scholarships and Exhibitions have been examined by Sir William Richmond and Mr. Selwyn Image, and a number of them were selected and exhibited at the Northampton Institute, St. John Street Road, Clerkenwell. The exhibits included architectural and art modelling designs in plaster of Paris, a memorial for an artillery monument, architectural plans, designs for frescoes, oak carving, and painted glass. As might be expected the work is for the most part crude; but there are plenty of signs of real merit. Good work has been done in friezes, overmantels, and figures, and some designs for architectural and building work have been well executed. In due course the board will issue its award.

## Cottage Homes.

THERE is a growing feeling that the "barrack schools," in which it has been customary to rear the unfortunate children who are dependent on the State for their maintenance, are but ill suited for their purpose. It is felt that some closer approximation to home life is what is needed, and consequently the decision of the Stepney Guardians to erect a new barrack school has evoked considerable protest. At a meeting held last week the following resolution, proposed by the Rev. A. Dalton, rector of Stepney, was carried unanimously: "That this meeting of ratepayers emphatically urges the Board of Guardians to provide some system for the children under their care which will secure the nearest possible approach to home life." The system of cottage homes, such as that now being described in our columns, seems to be the one that best meets the necessities of the case. The Stepney Guardians should read their BUILDERS' JOURNAL.

## An Automatic Telephone Exchange.

WE have received from the Telephone Construction Company Limited, of Winchester House, Old Broad Street, a book containing a technical description of their automatic telephone exchange system. It would be scarcely possible to explain the system clearly without the aid of drawings; but we may say that it seems to be a vast improvement on the ordinary systems. The company claim that by the use of their system any subscriber can at any time, whether by day or night, call up any other subscriber, and the time occupied in making such a call is from three to five seconds. This is certainly better than having to wait about the same number of minutes. In point of economy the system has a great advantage in the fact that only one man is required at the central establishment to look after every 1000 exchange instruments. This reduces the working expenses, and also gives increased speed in communication. The company state that when two subscribers are connected, no third person can interrupt or overhear the conversation. If this is so the annoyance of being suddenly "cut off," or interrupted by the familiar "have you got them?" will be spared to the users of the system.



## Under Discussion.

### THE COST OF ELECTRIC ENERGY.

At a meeting of the South Staffordshire Institute of Iron and Steel Works Managers at Dudley, on Saturday week, Mr. J. H. Whittaker, A.M.I.E.E., read a paper on "Electricity in Mines and Iron Works." In the discussion Mr. Addenbrooke said the Midland Electrical Corporation had decided that the three-phase system should be adopted. Local authorities and the Government, however, seemed to take a delight in putting every obstacle in the way of transmitting electrical power. Whilst Germany insisted upon overhead wires, the Board of Trade in England forbade them unless they were as much insulated as underground wires. The cost of that was practically prohibitive, and a more hopeless obstruction could hardly be conceived.—Mr. W. Brooks believed that it would be far better and cheaper for companies to lay down huge generating plants than for local authorities to put down small systems. If electricity could be supplied at 2d. per Board of Trade unit, it was cheaper than the 3d. per unit at which municipalities could do it.—Mr. Addenbrooke said the Midland Electrical Corporation intended to put down a 5000 horse-power station to start with, and their charges would be on the basis of a sliding scale. For mine pumping the charge would be less than 1d. per unit, and if the pumping was continued for twenty-two out of twenty-four hours they would be prepared to make a reduction on that figure; in fact, they would come down to 3d. per unit.

### ARCHITECTURE IN DUNDEE.

In connection with the student section of Dundee Institute of Architecture, Mr. A. H. Millar, F.S.A., Scot., delivered a lecture on "Dundee, Past and Present," in the Technical Institute last Saturday week. Mr. Millar, alluding to the mistaken idea that Dundee was a town of yesterday, said it had a corporate existence for at least 700 years, a charter of 1199 being in existence, conferring on its merchants the privilege of trading free in any English town or city excepting London. He proposed showing the Architecture of the present day, and comparing it with that of the past, the examples being from the fifteenth century onwards. In alluding to the Town House, designed by William Adam, and built in 1730-34, the lecturer spoke of the influence which it had exercised upon the Architecture of Dundee, many of the buildings

being planned on the same lines; notably St. Andrew's Church, the old Trades Hall, Union Hall, and Trinity House. The last three had now disappeared. He traced the development of the modern streets from the old closes, and explained how the names of these were frequently retained, although they seemed unintelligible at the present day. In touching on the modern buildings, Mr. Millar pointed out the want of coherence in many of the designs, each man erecting his own building with supreme indifference to those of his next-door neighbours, thus forming a curious jumble of styles. In Albert Square alone there could be seen examples of Greek, Flemish, Queen Anne, French Renaissance, Italian, and Gothic styles in juxtaposition. Of the High School, he mentioned that Mr. Angus, by whom it was designed, had planned the line of Reform Street for the purpose of making an approach; and in that connection Mr. Millar indicated his satisfaction that the intention of the architect was not to be destroyed, as it would have been had the Queen's statue been placed on the site at one time proposed. About 100 slides, illustrative of the lecture, were exhibited by limelight in such a manner that a tour was made through Dundee, and consecutive pictures were shown of the Murraygate and other places, chronologically arranged, so that the modern street was traced back to its origin.

### THE PURIFICATION OF PUBLIC WATER SUPPLIES.

At a meeting of the Civil and Mechanical Engineers' Society, held on March 16th, a paper on the "Purification of Public Water Supplies" was read by Mr. W. N. Twelvetrees, M.I.M.E., M.S.I., and was illustrated by a large number of diagrams. The chair was occupied by the President, Mr. B. Baines Dudley. After dealing with the question of natural and artificial purification, by percolation and by deposition, the author demonstrated by the aid of sectional drawings, the actual nature of the process taking place in sand filtration beds. Sand in itself presents no special recommendation as a filtrant; the efficiency of a sand filter does not become established until a gelatinous layer formed of mud, algae and micro-organisms has been formed upon the surface. Leaving ordinary sand filtration, Mr. Twelvetrees proceeded to discuss some modified methods which have been adopted with great success. One of these is known as the Morison-Jewell process, of which the distinctive feature consists in the substitution of a clean film of

gelatinous aluminium hydrate for the casually accumulated layer, constituting the chief purifying medium in ordinary filter beds. Another modified mode of sand filtration is one in which polarite, alone or mixed with sand, takes the place of one of the strata of sand. Polarite is the name given to a specially prepared and porous form of magnetic oxide of iron. Water passes freely through as well as around the granules of this substance within the pores of which polarised oxygen is contained, and which, upon contact with suspended or dissolved substances, produces oxidation. This action is not carried on at the expense of the material itself; and, further, as polarite is absolutely rustless, it is practically everlasting. Fresh supplies of oxygen are of course necessary, and periodical washing is also required. Methods of purification for hot and cold climates, where sand filtration is often impracticable, were next discussed and illustrated. Many forms of apparatus coming under this category show considerable mechanical ingenuity, and installations upon a large scale are noteworthy for the magnitude of their output as compared with the limited space required. Amongst filters of this kind may be specially mentioned the "Riddell," the "Torrent," the "Howatson," and the "Wilson" filters. These have all been applied for public purposes, and in installations capable of dealing with from 1,500,000 to 2,600,000 gallons of water per 24 hours. Mr. Twelvetrees next drew attention to the example of waterworks filtration by the Pasteur method, as used at Darjiling. The output is about 250,000 gallons daily, and as the Pasteur filtration employs the only known absolutely germ-proof medium, the installation in question may be regarded as unique. Sterilization by heat at a temperature of 240 degrees Fahr. affords perfect immunity from pathogenic bacteria, and an apparatus known as the Vailard-Desmaroux Heat Sterilizer was described and illustrated. This form of appliance has been adopted for the water supplies of towns in Russia and in Brazil. It should always be borne in mind, however, that the extinction of germs and spores is one matter, and that the removal or oxidation of poison in solution is another and not unimportant problem. Mr. Twelvetrees in conclusion emphasised the desirability of regarding efficiency as the first consideration in every case, and expressed the hope that the line of defence established by water engineers in the interests of public safety might always be furnished with weapons of the most modern and scientific kind. discussion followed.



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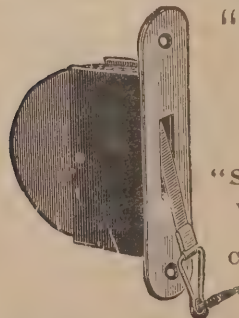
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## Keystones.

Almshouses have been erected at Char-nock Richard by Mr. James Darlington, of Bourton Hall, Rugby.

The Paris Exhibition works are progressing slowly, and foreign workmen are being employed, so as to enable them to be completed in time.

A Protest against the Removal of Greyfriars Church has been sent to the Aberdeen Town Council by the Glasgow Architectural Association.

Present of a Stained Glass Window.—The German Emperor has offered to present a stained-glass window for the west end of Dovercourt Church, in memory of some German soldiers who died from the plague during the Continental war, and were buried in Dovercourt Churchyard.

The Extensions to the Ingham Infirmary, South Shields, are being warmed and ventilated by means of Shorland's patent Manchester stoves, with descending smoke flues.

Arbroath New Epidemic Hospital.—It has been decided to erect this hospital on the lands of Little Cairnie, and it is estimated that the hospital will cost about £8000. Competitive plans for the work are to be invited.

The new Architect to the L.C.C. has been appointed in the person of Mr. W. E. Riley, at a salary of £2000 a year. Mr. Riley is at present assistant architect to the Admiralty, and has built hospitals, barracks, coast-guard stations and offices. He has also superintended large building and engineering works at several Mediterranean stations.

New Type of Tramway Car.—A new style of electric tramway car is being built from a design by Mr. A. L. C. Fell, electrical

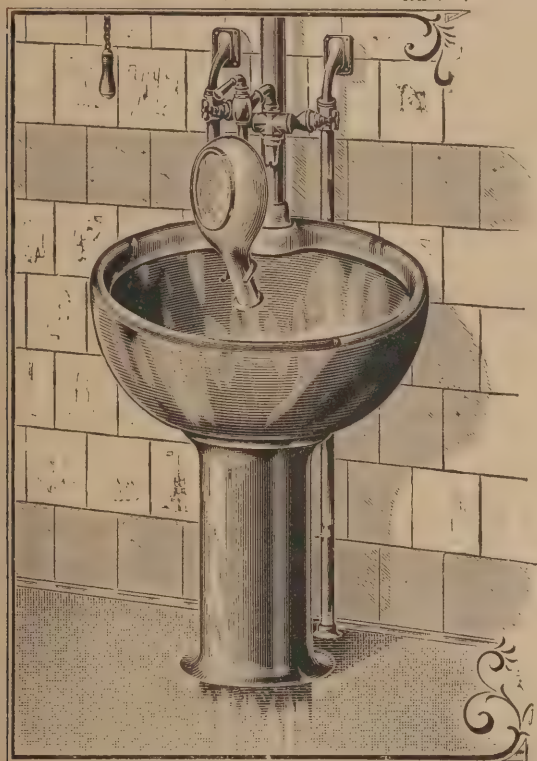
engineer, for the Corporation of Sheffield; it is a single deck smokers' car and is divided into three parts, a centre compartment, and a platform at each end. The centre compartment will accommodate fourteen non-smoking passengers, and each platform has room for eight smokers. Seats are provided on each platform for four smokers, and there is standing room for four more. Another special smokers' car, also designed by Mr. Fell, is being built, and gives accommodation for the same number of passengers, smokers and non-smokers, but the smokers' platforms are closed in with windows at the sides, which can be raised. All the cars will be illuminated by electric light. These cars are being built so that the Tramways Committee can decide whether they will prove suitable for the purpose required.

A Defective Building.—An inquiry was held last week at Aberdeen into the circumstances attending the death of John Farqu-

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harson, an apprentice mason in the employment of Messrs. Beattie and Beaton, builders, of St. Peter Street, Aberdeen, who was killed on February 10th by the fall of the gable of a house in course of erection in Ann Street. Mr. W. Ross, carpenter, proprietor of the house, said the building had a Mausard roof. At the time of the accident the south gable had been completed. The plans were prepared by Mr. Duncan Hodge, and witness himself inspected the work. Two days previous to the accident rain fell in torrents, and he did not think now it was wise for the men to have gone on with the work on the day following. Eight feet of the gable, the tympanum, and part of the wall had fallen, carrying with them the joists, and three men were injured. The deceased was found at a quarter-past two. Witness was satisfied with the workmanship, except for the substitution of bricks here and there where the specification provided for stones. In answer to the builder's solicitor, witness said that there was a scarcity of stones, and he approved of the use of bricks. Mr. John Rust, city architect, stated that he had examined the building after the accident. The gable wall was badly constructed through the mutual boundary wall being allowed to remain, and the gable wall of the house being built on the slope following the batter of the dyke. The gable wall was not built of proper material; instead of granite through bands and stanchions at the sides of piers and fireplaces brick had been used, with no attachment to the back part of the wall. At the level of the ceiling of the attic floor a large wooden beam had been placed across the centre void, and a 9in. relieving arch thrown over it, with the chimney head built on the top of it. The abutments at the side of this arch being built of brick, the pinions were quite unable to sustain the thrust of the arch, and consequently when the scaffolding was removed the top part of the gable collapsed, and in falling brought down part of the front and back walls with it. The gable, irrespective of this, was

very roughly built. The lime mortar used was weak; the sand had not been riddled, and was of poor quality, and the proportion of lime was defective. The brick stanchions were a danger in themselves, and should not have been there, especially in an outside gable. There was a lot of small stones which should not have been in the sand. "Dooking," witness said, should not be done before the roof was on. The jury returned a formal verdict, adding as a rider that they considered the design and building of the gable defective, and that the wall was weakened by the "dooking" being done too soon.

**Fire Tests with Floors.**—The first official report of the British Fire Prevention Committee has just been issued, and deals with a test on a floor manufactured by the Expanded Metal Company, Limited. The object of test was to record the effect of a smouldering fire of fifteen minutes duration, at a temperature not exceeding 600deg. F., followed by a fierce fire for one hour, gradually increasing to a temperature of 2000deg. F., followed suddenly by the application for three minutes of a stream of water. The area of the floor was 100ft. (10ft. x 10ft.), and was loaded with 140lbs. of pig-iron per square foot. The time allowed for its construction and drying was three winter months. The effect of the test on the floor was that the plaster ceiling below remained intact until water was applied. A slight deflection of the floor and ceiling was also observed, and the concrete of the floor was slightly and superficially cracked; the fire did not pass through the floor. The fuel used for the test was gas. Altogether the floor seems to have stood the test very well. This test is one of a series which the Fire Prevention Committee are carrying out at their testing station at Regent's Park. The methods employed at the station to ensure the scientific accuracy of the tests were fully described in a recent article in these columns.

COMING EVENTS.

Wednesday, March 29

SANITARY INSTITUTE (Lectures and Demonstrations for Sanitary Officers).—Demonstration of Book-keeping as carried out in a sanitary inspector's office by Mr. Albert Taylor. 8 p.m.

BUILDERS' FOREMEN AND CLERKS OF WORKS' INSTITUTION.—Ordinary meeting of the Directors. 8 p.m.

Friday, March 31.

GLASGOW AND WEST OF SCOTLAND TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMAN'S SOCIETY.—Mr. James Lockhead, A.R.I.B.A., on "Architectural Contractor," and Mr. Charles E. Monro on "The Public and Architecture."

Monday, April 3.

LIVERPOOL ARCHITECTURAL SOCIETY.—Mr. J. F. Doyle on "A Description of the New Royal Insurance Buildings."

Tuesday, April 4.

PERTH ARCHITECTURAL ASSOCIATION.—Mr. Charles J. Menart on "Ecclesiastical Architecture of the Middle Ages," illustrated by limelight.

Wednesday, April 5.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Mr. H. O. Tarbolton on "Plaster-work," with limelight illustrations.

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Clover, best	do.	3 10 0	4 0 0
Beans	per qr.	1 4 0	1 4 6
Straw	per load	1 4 0	1 16 0
OILS AND PAINTS.			
Castor, French	per cwt.	1 4 0	—
Colza, English	per cwt.	1 2 9	—
Copperas	per ton	2 0 0	—
Kerosine, water white	per ton	1 5 0	1 15 0
Lard	per cwt.	0 18 4	0 18 6
Linseed	per gal.	0 2 6	0 4 0
Neatsfoot	per gal.	0 10 0	0 19 0
Paraffin	per barrel	0 8 0	—
Pitch	per cwt.	1 1 6	—
Tallow, Town	per barrel	1 6 6	—
Tar, Stockholm	per cwt.	1 13 3	—
Turpentine	per cwt.	1 19 6	2 18 6
Glue	per cwt.	0 19 0	—
Lead, white, ground, carbonate	per cwt.	0 16 9	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	3 9 0	—
Do. sticklac	do.	2 2 6	2 15 0
Pumice stone	do.	0 8 9	—

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Do, bar, 1 1/2 in. London	do.	6 15 0	8 0 0
Do, Galvanized Corrugated sheet	do.	11 15 0	—
Do, pig, Spanish	do.	14 7 6	14 8 9
Do, English common brands	do.	14 12 6	14 15 0
Do, sheet, English, 6lb.	do.	16 10 0	—
Do, per sq. ft. and upwards	do.	17 5 0	—
Do, pipe	do.	9 0 0	10 0 0
Do, cut clasp, 3 in. to 6 in.	do.	8 15 0	9 15 0
Do, floor brads	do.	107 10 0	108 0 0
Do, Straits	do.	110 10 0	111 10 0
Do, English ingots	do.	27 10 0	28 10 0
Do, sheets, English	do.	31 0 0	—
Do, Veille Montaigne	do.	27 10 0	27 15 0
Do, Spelter	do.	—	—

TIMBER.			
SOFT WOODS.			
Do, Dantzic and Memel	per load.	3 0 0	4 0 0
Do, Quebec Yellow	do.	4 7 6	6 5 0
Do, this, log, Dantzic	per fath.	4 10 0	5 10 0
Do, Petersburg	do.	4 0 0	6 10 0
Do, Als, Archangel 2nd & 1st per P. Std.	do.	8 15 0	13 10 0
Do, do, 4th & 3rd.	do.	8 5 0	8 15 0
Do, do, unsorted	do.	7 5 0	8 5 0
Do, Riga	do.	6 15 0	8 10 0
Do, Petersburg 1st Yellow	do.	14 15 0	—
Do, do, 2nd	do.	12 0 0	—
Do, do, Unsorted	do.	8 0 0	10 10 0
Do, do, White	do.	7 15 0	9 15 0
Do, Swedish	do.	10 5 0	15 0 0
Do, White Sea	do.	10 15 0	18 0 0
Do, Quebec Pine, 1st	do.	18 5 0	—
Do, do, 2nd	do.	15 5 0	16 15 0
Do, do, 3rd & 4th	do.	7 0 0	7 15 0
Do, Canadian Spruce, 1st	do.	7 15 0	9 0 0
Do, do, 3rd & 2nd	do.	6 7 6	6 10 0
Do, New Brunswick	do.	7 5 0	8 0 0
Do, all kinds	do.	6 15 0	8 10 0
Do, flooring Boards, 1 in.	per square	0 11 3	—
Do, prepared, 1st	do.	0 10 9	—
Do, 2nd	do.	0 10 9	—
Do, 3rd & 4th	do.	0 8 3	—

HARD WOODS.			
Do, Quebec	per load	3 17 6	4 10 0
Do, rh, Quebec	do.	3 0 0	5 0 0
Do, Turkey	per ton	7 0 0	15 0 0
Do, dar, lin, Cuba	per ft. sup.	0 0 4	0 0 4 1/2
Do, Honduras	do.	0 0 4	9 16
Do, Tobasco	do.	0 0 4 1/2	—
Do, rh, Quebec	per load	4 12 6	5 10 0
Do, rhogany, Average Price	per ft. sup.	0 0 4 15 1/6	—
Do, for Cargo, Honduras	do.	0 0 3 5 1/6	—
Do, do, African	do.	0 0 5 1 1/6	—
Do, do, St. Domingo	do.	0 0 3 21 3/32	—
Do, do, Tobasco	do.	3 5 0	3 15 0
Do, Dantzic and Memel	per load	4 12 6	—
Do, Quebec	do.	8 10 0	13 15 0
Do, ak, Rangoon, Planks	do.	8 15 0	5 15 0
Do, almscot, Riga (Baulk)	do.	3 15 0	5 15 0
Do, do, Odessa Crown	do.	0 1 9	0 2 7
Do, alnut, American	per cub. ft.	—	—

**TENDERS.**

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

**ALVESTON (Nr. Derby).**—For the erection of a villa-residence and outbuildings for Mr. Frank Hatton. Geo. Yates Mills, architect, Irongate, Derby. Quantities by the architect:—  
Chas. Brown ... £1,726 0 6 1/2 | H. Chattle ... £1,570 0 0  
Wm. Walkerdine 1,618 10 0 | A. Smith ... 1,503 0 0  
Arthur Brown 1,578 16 0 | G. Durant\* ... 1,491 0 0  
All of Derby. \*Accepted

**ASCOT.**—Accepted for the erection of a cottage. Mr. A. E. Sidford, M.S.A., architect, Wokingham:—  
W. Francis, Ascot ... £557

**AUDENSHAW.**—For the pulling down and rebuilding of the "Hansing Gate" Inn, for Messrs. Chesters' Brewery Co., Limited, Ardwick, Manchester. Messrs. J. H. Burton and J. A. Percival, architects, Ashton-under-Lyne:—  
General.  
J. Lord ... £1,080 | C. Evans ... £1,270  
F. Woolley ... 1,317 | J. Thornley ... 1,265  
Fitton and Bowness ... 1,325 | T. Dean ... 1,256  
J. Gibson and Son ... 1,300 | H. Fielding ... 1,250  
E. Marshall ... 1,298 | J. Ridyard, Ashton-under-Lyne (accepted) 1,225  
Z. Pike and Son ... 1,290

**Plumbing.**  
G. Burrows ... £119 0 0 | H. Rigley ... £107 0 0  
G. H. Coop ... 111 0 0 | P. Wills ... 102 10 0  
H. Hobson ... 107 12 6

**BURTON-ON-TRENT.**—For the erection of business premises, High-street, Burton-on-Trent, for Mr. James Campbell. Mr. Geo. Yates Mills, architect, Irongate, Derby. Quantities by the architect:—  
J. Hunter ... £1,688 | G. Hodges ... £1,580  
W. A. Stevenson ... 1,660 | G. Kennard ... 1,585  
H. Edwards ... 1,620 | A. Kershaw ... 1,498  
Lowe and Sons ... 1,620 | J. T. Varlow ... 1,469  
[All of Burton-on-Trent.]

**HEREFORD.**—For the erection of new buildings in connection with the proposed electricity station in Widemarsh street. Mr. John Parker, City Engineer:—

**BURTON-ON-TRENT.**—Accepted for the extension of electric light buildings, for the Corporation. Mr. F. L. Ramsden, engineer, Gas-works, Burton:—  
L. T. Varlow, Burton ... £3,321 18 5

**CARLTON.**—For new stores at Carlton, Notts., for The Netherfield and Carlton Co-operative Society, Ltd. Mr. R. Whitbread, architect, Carlton, near Nottingham:—  
Hodson and Son £1,140 0 0 | J. Lewin ... £1,054 0 0  
A. G. Bell ... 1,118 5 0 | A. B. Clarke ... 1,050 0 0  
J. Hutchinson ... 1,100 0 0 | T. H. Harper\* ... 931 16 10  
T. Cuthbert ... 1,063 0 0 \*Accepted

**COOKHAM DEAN.**—For the erection of the new Infants' School, for the Vicar, Churchwardens, and Committee. Mr. Gordon F. G. Hills, architect, 4, Adam-street, Adelphi, W.C. Quantities supplied by Mr. C. A. Bassett-Smith, 10, John-street, Adelphi, W.C.:—  
R. G. Lacey ... £1,270 | W. Creed ... £1,150  
Cooper and Sons ... 1,267 | H. H. Taft (accepted) ... 1,133  
Silver and Sons, Ltd. ... 1,139

**DERBY (Ockbrook, near).**—For alterations and additions to the "Royal Oak" Inn, for Messrs. Offiler's Brewery, Ltd. Geo. Yates Mills, architect, Irongate, Derby. Quantities by the architect:—  
Clifford ... £260 12 3 | Adams and Brailsford ... £570  
G. Durant ... 574 0 0 | Maddocks (accepted) ... 549  
[All of Derby.]

**FARNHAM ROYAL (Bucks).**—For the erection of dwelling house and stabling, at Farnham Royal, for Mr. Herbert Windsor. Mr. S. M. Wyborn, M.S.A., architect, Park Chambers, Windsor:—  
J. Devrill ... £1,980 | H. Bowyer ... £1,813  
W. Watson ... 1,895 | Chas. W. Cox and Sons, Maidenhead\* ... 1,790  
H. Chapman ... 1,832 \*Accepted

**HINCKLEY (Leicestershire).**—For alterations and additions to the "Holly Bush" Inn, for Messrs. Marston, Thompson, and Son, Limited, Albion Brewery, Burton-on-Trent. Geo. Yates Mills, architect, Irongate, Derby. Quantities by the architect:—  
Hall and Son ... £296 4 | Thomas West, Burton-on-Trent\* ... £576 15  
Greaves and Farmer 655 0 \*Accepted

	Buildings.	Chimney.	Ironwork.	Lightning Conductor.	Total.
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Lewis and Co., Hereford	2,241*	461*	453	50*	3,205
Alexander and Duncan, Leominster	—	—	394*	—	—
Lewis Hodges	2,498	522	552	48	3,620
Bowers and Co.	2,480	477	426	55	3,438
Hill and Smith	—	—	445	—	—
J. Cheese	3,373	570	—	—	—
H. Price	2,586	503	481	44	3,614
J. W. Smith	2,689	532	474	50	3,745
Stevenson and Co.	—	—	410	—	—
Keay, Ltd.	—	—	507	—	—
King and Son	3,080	632	670	48	4,880

\*Accepted.

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LONDON.—For the erection of electric light generating station in Townhead-road, Fulham, for the Fulham Vestry. Mr. F. Hastings Medhurst, B.Sc., A.M.Inst.C.E., engineer. Quantities by Mr. Walter Herring:—

F. G. Minter accepted. £22,970  
LONDON.—For alterations and additions to No. 54, Russell-square, Bloomsbury, for Mr. C. J. Woolf. Mr. Philip E. Pidditch, architect:—  
Parkinson ... 1,593 Kirk and Kirk\* ... £1,540  
Brown ... 1,593 \*Accepted.

LONDON.—For additions and alterations to workhouse, Constance-road, Camberwell, for the Guardians of St. Giles, Camberwell. Messrs. Henry Jarvis and Son, architects:—  
G. J. Newton ... £7,313 Chessum and Sons ... £6,984  
Kirk and Randall ... 7,145 Gough and Co., ...  
G. Parker ... 6,948 Hendon\* ... 6,394  
Staines and Son ... 6,388 \*Accepted.

LONDON.—For alterations at the "Lamb Hotel," Caletonia Market, Islington, for Mr. J. Bambridge. Mr. C. Wisner, architect, Wellesley-road, Leytonstone:—  
Salt ... £1,989 Britten ... £1,812  
Todd ... 1,976 Rowe ... 1,799  
Easton ... 1,855 Holmes & Annesley\* 1,672

LONDON.—For rebuilding "The Pigeons" Hotel, Romford-road, Stratford, E., for Messrs. Savill Brothers, Limited. Mr. Henry Poston, architect, 39, Lombard-street, E.C. Quantities by Messrs. R. L. Curtis and Sons, 119, London Wall, E.C.:—  
Mowlem and Co., ... £13,500 Grover and Sons ... £12,710  
Charles Cox ... 12,827 Hall, Boldall, & Co. ... 12,673  
Kilby and Gayford ... 12,736 Todd and Co.\* ... 12,397  
\*Accepted.

LONDON.—For alterations to Nos. 67, 69, and 71, Southampton-row, W.C., for Messrs. Walter Hill and Co. Mr. W. H. Pertwee, architect, Clifford's Inn, E.C. Quantities by Mr. Joseph Rookwood, 47, Museum-street, Bloomsbury, W.C.:—  
Kilby and Gayford ... £2,821 Snewin Bros. ... £2,583  
Steven Bros. ... 2,850 F. T. Chinchon ... 2,496  
Harris and Wardrop ... 2,597

LONDON.—For the erection of fifty-four cottages at Erith, S.E., for the South-Eastern Railway Company. Mr. H. L. Saunders and Messrs. G. Humphreys and Davies, joint architects:—

Holloway Bros. ... £27,180 W. Shepherd ... £23,857  
Howell J. Williams ... 24,777 G. E. Wallis and Sons ... 23,787  
Stebbing & Pannell ... 24,570 T. Knight ... 23,707  
Ferry and Co. ... 24,167 J. Smith and Sons ... 23,491

MAIDENHEAD.—For the erection of oak fencing for H. W. Russell, Esq., Mr. E. J. Shrewsbury, A.R.I.B.A., architect, Queen Street-chambers, Maidenhead.  
Silver & Sons, Ltd. ... £88 0 W. Creed ... £65 14  
Partlo Bros. ... 76 0 Chas. W. Cox and Sons, ...  
Cooper and Sons. ... 66 10 Maidenhead\* ... 62 10  
\*Accepted.

MAIDENHEAD.—Accepted for the erection of a dwelling house on the Highway Estate, for Mr. Pendril:—  
Chas. W. Cox and Sons, Maidenhead ... £485  
No competition.

MAIDENHEAD.—Accepted for drainage works and alterations to the "Cottage," North Town, Maidenhead, for W. T. Western, Esq., Mr. E. J. Shrewsbury, A.R.I.B.A., architect, Queen Street-chambers, Maidenhead:—  
Chas. W. Cox and Sons, Maidenhead ... £224

MARLBOROUGH (Wilts).—For the construction of sewers, &c., for the Town Council. Messrs. Fairbank and Son, engineers, 13, Lendal, York:—

J. and T. Binns. ... £5,064 0 0 W. S. Meredith ... £4,100 0 0  
W. Gibson ... 4,770 0 0 A. T. Catley ... 3,870 0 0  
T. Bell ... 4,399 19 9 F. Talbot, ...  
Johnson Bros. ... 4,321 0 0 Reading\* ... 8,833 19 4  
J. C. Trueman ... 4,114 0 0 J. Ford ... 8,837 8 2  
\*Accepted.

ST. MARY'S, SCILLY.—For additions to "Tregarthen's Hotel," for the Corporation. Mr. O. Caldwell, architect, Penzance:—  
Thomas James ... £2,491 W. Stephens ... £2,340  
James and Botrell ... 2,343 Walters, Penzance\* ... 2,495  
\*Accepted.

TEDDINGTON.—For road-making, &c., for the Teddington Urban District Council. Mr. M. Hainsworth, engineer:—

Road-making.  
Nowell and Co. ... £7,697 4 3 Lawrence and ...  
Free and Sons ... 7,495 12 11 Thacker ... £6,562 8 8  
S. Kavanagh ... 7,478 13 6 W. Adamson, ...  
Thos. Adams ... 6,813 17 8 Kingston\* ... 6,278 16 6

Tar-paving.  
Nowell and Co. ... £1,287 0 0 Mainwright & Co. ... £865 2 8  
Thos. Adams ... 1,217 5 0 Chittenden, Lake, and Co. ... 818 2 3  
Lawrence and ... 1,153 4 0 Asphaltic Lime- ...  
Thacker ... 1,150 6 3 stone Concrete ...  
S. Kavanagh ... 1,131 15 0 Co., Birming- ...  
Free and Sons ... 1,042 5 10 ham\* ... 836 17 1  
Hobman and Co. ... 926 5 11 Wm. Shepherd ... 831 4 8  
J. Smart ... \*Accepted.

WAKEFIELD.—For the execution of water supply works, for the Corporation. Mr. C. C. Smith, C.F., Town Hall, Wakefield:—

Kirkham Filter Beds and Lindale Hill Service Reservoir.  
Contract No. 1.—Parker and Sharpe, York\* ... £33,491 7 8  
Contract No. 2.—Stanton Iron Works Co. Ltd., Nottingham\* ... 2,689 11 5  
Contract No. 3.—Glensfield Co. Ltd., Kilmar- ...  
nock\* ... 469 19 ...  
\*Accepted.

WEMBLEY PARK.—For the erection of a house for the Tower Company Limited. Mr. Matt. Garbutt, architect:—  
Spiers and Sons ... £1,660 Tennant and Co. ... £1,568  
E. Wheeler ... 1,652 Do. (revised scheme)\* 1,400  
\*Accepted.

WOKINGHAM.—For the erection of three cottages. Mr. A. E. Sidford, M.S.A., architect, Wokingham:—  
W. J. May ... £750 J. B. Seward ... £675  
W. Stokes ... 681

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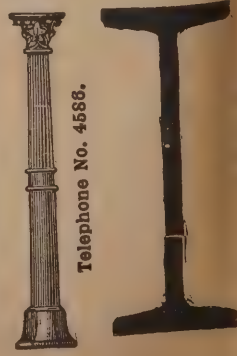
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## METHODS USED IN PRODUCING TERRA-COTTA MOULDINGS.

By WILLIAM REID.

(Concluded from page li.)

The opposite side is next covered and finished in the same way, then the two ends. These four pieces complete the "slips" or sides of the mould, and only the face is required to complete the work. Before doing this, however, there are one or two points to be observed in the pieces already made. First there is the way in which the edges of each piece is finished off. This is not very clearly shown on the drawings, and an enlarged view of the corners is given at Fig. 7. By making them like this they fit more firmly together than if cut square. Then, along the outer edge small notches have been cut. These, when the top face is cast, constitute joggles, which further tend to keep each part securely in its place. It may be noticed, further, that the "slips" or sides have not been trimmed up square or perfectly perpendicular to the face of the bench, but are tapering slightly outwards. The reason of this will be apparent when the mould has been completed. To cast the remaining part, or top face of the model, clay is built up and round the sides as shown at Fig. 8. The portion exposed is then covered with plaster.

requisite polish and smoothness is the work of the finisher.

This finishing is not, however, done as soon as the clay is taken from the mould, but some hours afterwards—perhaps the following day—when the block has had time to dry and become sufficiently stiff to handle freely. The tools required by the finisher are varied in the extreme and usually of his own manufacture, or got from a fellow workman. The majority are made from pieces of boxwood fashioned to the different shapes of angles, curves, beads, or what-not that he may have to finish. A most useful tool is a piece of leather which serves the purpose of smoothing over large curved surfaces. Flat surfaces are finished with a knife.

All this finishing requires considerable skill and taste on the part of the finisher, particularly when he has to deal with elaborate enrichment. A drawing is given (Fig. 12) of the finished clay block principally with the object of showing the manner of treating the ends. These will be seen to be slightly panelled with a hole cut in the middle. The paneling is done, not only with the intention of allowing more mortar to be placed between each block when built without showing a needlessly wide joint, but also, in case this particular piece does not fit properly, it becomes a much easier matter for the mason to chip away the objectionable parts. The hole serves two purposes, first, it is a convenient

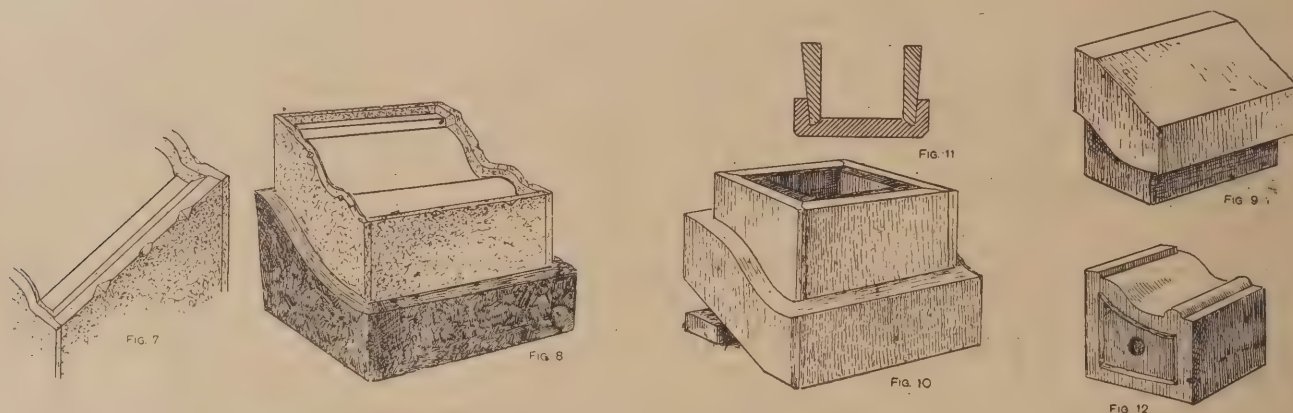
## Trade and Craft.

### ART METAL WORK.

We have received a most comprehensive catalogue of some of the art metal work, &c., supplied by Mr. T. J. Gawthorp, of 16, Long Acre, W.C., and 19, Castle Street East, W. Section 1 comprises memorial brasses; section 2, naval and military memorial brasses; section 3, ecclesiastical art brass and ironwork; section 4, wrought-iron work; and section 5, memorials. The firm makes a speciality of "Latten" brass, which they claim to be the same as the ancient metal. The firm also supplies mounts for the brasses. The catalogue is not intended for use as a stock-pattern book, but illustrates what work has been actually done. The firm will carry out architects' designs with accuracy and with due consideration of the correct proportions of metal needful for weight and strength without detriment to beauty of design. The designs in the catalogue give one a good idea of the effect of the articles when finished.

### AN ADVERTISING SHOP BLIND.

Messrs. Janes and Son, general window-blind contractors, of 101, Aldersgate Street, E.C., are supplying a patent outside Shop Blind, the novelty of which lies in the appli-



FIGS. 7, 8, AND 9. STAGES OF PLASTER MOULD. FIG. 10. MOULD FITTED WITH CLAY. FIG. 11. SECTION OF MOULD. FIG. 12. FINISHED CLAY BLOCK, SHOWING PANELLED SIDES.

The finished mould will appear like Fig. 9, which shows the utility of the part last made in serving the double purpose of a mould for the face of a moulding, and a case to keep the four sides securely in their places.

Another drawing (Fig. 10) shows the complete mould resting on the case and filled with clay. If a section were cut through the middle of the mould, it would present an appearance like Fig. 11, where the benefit of slightly tapering the sides, will be understood since by this means the case may be easily slipped off. The next operation is to fill the mould with clay. On each presser's bench a heap of clay is built up. With a piece of wire a slice is cut from this heap, caught up and placed against the inside of the mould, the presser beating it with his hand and pressing it into every marking of the mould. This he does till the sides of the mould are all covered, the centre being of course, quite hollow. Before the mould may be removed from the clay-pressing some time may elapse, as the clay is at first inclined to stick to the sides of the mould. The porous nature of Plaster of Paris is, however, particularly adapted for work of this class, for in a short time it will have absorbed a certain amount of moisture from the clay, which then slightly shrinks and renders the removal of the mould an easy matter. This is done by turning the mould over on to a board so that the case is uppermost. The case is first removed, then the sides. The clay pressing does not, as a general rule, present a sufficiently fine surface when taken from the mould, and to put on the

handle by which the block may be lifted, and, next, it is absolutely necessary, when the block is set in the kiln, as a vent by which the steam may escape. However dry the clay may seem before being taken to the kiln it is astonishing the amount of steam that becomes disengaged when firing is commenced and, as the block is set in the kiln in the same position as shown at Fig. 12, it will be readily seen that, unless some escape be provided for this, the steam would simply rack and crack the whole work.

One other noteworthy point, in the matter of blocks cracking, is the way in which they are set out in the drying shed after being finished. The shed may be heated by overhead pipes or pipes laid under the floor but, in any case, each block is set on a board over which a piece of paper has been laid. This may not be so very necessary in the case of small pieces but, when the mass of clay is at all heavy, it is very apt, being damp, to stick to the board, thus interfering with its proper shrinking. As the clay dries it shrinks and creeps along the face of the board. The interposition of a piece of paper allows it to do this freely and obviates the likelihood of cracking.

**A Plan of London.**—The Corporate Property Committee of the London County Council has prepared a report on the ground plan of London, on which they have been engaged for about five years. It aims at supplying a complete system of land registration, and has been found to be of very great use to the Council.

cation of an entirely new system of the projected ironwork together with the raising of the front laths for advertising purposes. The patent arrangement is attached to the front lath of the blind, and can be easily turned up and fixed to face the street, and rolling up with the blind protects the material from dirt and damp. The side brackets do away with the old plan of sliding irons, and can be curved to obtain an altitude of 10ft. in the highest part, and 7ft. 6in. in front. The address of the firm is 101, Aldersgate Street, City, E.C.

### CLARIFONT LAVATORIES.

These lavatories are specially notable for an arrangement to obviate the accumulation of soap and dirt, which collects in the water of an ordinary wash-basin during washing, and they are also meant to prevent the soapy scum from adhering to the sides of the basin when emptying. The Clarifont Lavatory provides an inner basin with a constant supply welling up from the bottom all round the rim and overflowing during the washing, thus carrying off at once the soiled and soapy water. The inner basin is made small in order that the water in it may be kept clean by being changed quickly. The system is applied in various forms and sizes to two distinct classes of lavatories, to those with taps, where the water supply is under personal control, and to simultaneous ranges. The lavatories are supplied by Wm. Cassels, the patentee and manufacturer, Kirkintilloch, near Glasgow.



## A MODEL FILTRATION SCHEME.

A NEW aeration and filtration scheme, which presents certain interesting features, has just been completed in connection with the Hornsea Waterworks, East Yorks. The new extension provides for the water from the existing shaft, which is a little over 70ft. deep, being lifted by the present pump; the water being then carried through an 8in. pipe, and delivered through a perforated spreader, which stands 22ft. from the ground. Through this spreader, which is made of copper and somewhat resembles in appearance a huge holder for flowers, the water is sprayed on perforated ledges of the aeration table. The ledges being pierced with holes break up the water, and a high wall is erected round the spreader to prevent the water from splashing out. From the aeration table the water flows down the weir, which consists of a succession of glazed brick steps, and enters the settling tanks.

Provision is made for the conveyance of the water direct from the air chamber to the settling tanks, when the weather is too severe to admit of the aeration table and the weir being brought into use. After the water has been well oxidised by the aeration, any sediment is precipitated to the bottom of the settling tanks. There are two settling tanks, each of which will have a capacity of 10,000 gallons, and can be used separately if desired. Each is fitted with two large floating valves, which will convey the water from the level at which it is clearest. The water is then conveyed through iron pipes along the bottom of the filtering chambers, through bell-mouthed pipes, into circular sumps in the centre of these chambers; from these sumps it is distributed on to the sand or gravel which forms the filtering material. After the water has filtered down to the bottom of these chambers it is conveyed along several sanitary pipes, and then through the distributing main of the reservoir.

The three filtering chambers will each have a superficial area of 720 square feet; each chamber is 36ft. in length, 20ft. wide, and 4ft. deep; gun-metal faced valves are placed to each sump, filter, and settling tank, so that any part of the plant can be cut off for repairs or cleaning out. The reservoir is 135ft. long and 51ft. wide over all. It is divided into two compartments each having a carrying capacity of 200,000 gallons. The construction is on the retaining wall system, and it is puddled on the outside with 12in. of tempered clay. The reservoir is provided throughout with sumps, valves, and manholes. The whole of the reservoir, settling tanks, and aeration buildings are constructed of Portland cement concrete and faced up in cement. There are proper inclines introduced into all the chambers, and the water is pumped out of the reservoir by a simplex positive action feed pump, which will be fed by steam from the present boiler. This pump forces the water into the main under pressure, and also delivers it to the storage tank at the top of the existing tower; there will therefore be the option of a supply of water by either or both of these systems, including the means of gravitation as it is now employed. These systems will permit a constant supply of water to the town and allow for any contingencies that may arise from breakdowns. The extra force of water will be of great service to the local authorities in the flushing of the drains.

The erection of this plant will almost entirely occupy the area of about an acre adjoining the tower, which is the property of the Council. The aeration and settling tanks are erected on the south side of the tower and the reservoir is on the eastern boundary. The scheme is a model one, and has involved an infinite amount of work and technical knowledge in its preparation. It was designed by Mr. P. Gaskell, C.E., surveyor to the Urban District Council, and the whole of the work was carried out under his supervision.

## THE PLASTERERS' DISPUTE.

THIS dispute is being carried on in a very dilatory fashion, and there is not much to report since our last issue. The officials of the Master Builders' Association seem to think that the results so far achieved are satisfactory, and they are confident that in a very short time all the important firms in London and the country will fall into line with them in the action they are taking. On the other hand, the officials of the Plasterers' Union state that although there has been a considerable increase in the number of men locked out, this has been counterbalanced by those who have found employment with non-federated masters. On March 24th it was ascertained, by inquiry at the offices of the Union, that 2240 men signed the strike pay-sheets last week, or ninety-four less than the previous week. Many of these men only receive one day's pay, as they have been unsuccessful in finding employment with non-federated masters. The special levy of 3s. per member per week has resulted in close upon £1000 being received at the head offices.

Mr. Deller wrote to Mr. Hassall on the 24th inst., stating that his Council were still willing to meet the members of the Masters' Association in conference, and that if the employers had agreed to this course when first suggested by the Union, much might have been cleared up.

The Earl of Wemyss in a letter to the "Times," says that when he was asked the other day, he supposed on account of his connection with the Employers' Parliamentary Council, if he had anything to do with the plasterers' lock-out, he answered no, and added that his impression was that by the time the strike ends employers will have found that they can do without skilled artistic plasterers. Ceilings, instead of being plastered, will be made of canvas, painted and decorated, and of wood panelling. There will also be carved gilt painted wood cornices, and possibly the Italian ceiling will come into fashion, which shows the joists on which the floor of the story or rooms above rests.

In the provinces matters are somewhat briske. At a men's mass meeting in Leeds, last week, it was suggested that the locked-out men should establish a big workshop of their own in Leeds, and the proposition was unanimously carried. The whole tone of the meeting showed resolute resistance. The directors of the Leeds Co-operative Association fully approve of the steps taken by the men to establish a business on their own account, and have promised pecuniary support.

It is stated that at Blackburn a curious development in connection with the lock-out has come to light, and one by which the masters bid fair to score. Contrary to the custom in London, the master-builders of the northern towns do not employ working plasterers direct, but contract with master-plasterers. The master-plasterers of Blackburn belong to the men's Union, and the master-builders are federated now. The former have issued seven days' notices to their men in consequence of the pressure brought to bear upon them. This means that the master-plasterers will have to withdraw from the Union, go back upon all their previous professions, and, if they continue to work, employ non-union men.

An advertisement has been published in a Rotterdam newspaper offering plasterers 10d. per hour, cert. in employment for at least two months, and free passage to London. The agents of the London employers were at the Hotel Coomand on Sunday, last week, to give more particulars. The Rotterdam branch of the Dutch Plasterers' Trade Union, were apprised of the matter, and a meeting was held to consider the position. The causes of the dispute were discussed, and a resolution was unanimously adopted, in which the Rotterdam plasterers declared their intention to assist their English brethren in the dispute, and to raise funds for their support.

## Surveying and Sanitary Notes.

**Improvements at Preston.**—It is proposed to borrow £40,000 to £50,000 for the purpose of improving some of the principal thoroughfares in Preston.

**The Widening of Key Street, Ipswich,** will cost £500. The Corporation will grant the sum of £700 for the right of way which it will acquire, and to defray the cost of the work.

**Blackpool Promenade.**—The Blackpool Corporation are promoting a Bill this session for the widening of the promenade 60ft. seawards, and for the construction of a double line of tramways on the front, at a cost of £350,000.

**Plans for a new Slaughter House** for Aberdeen by Mr. John Rust, architect, have been adopted by the Flesher Incorporation of Aberdeen. These provide for pretty extended buildings, and the total cost of the scheme is £17,000. A portion is to be proceeded with at once, which is estimated at £4000.

**Calder Valley Sewerage Schemes.**—The local authorities of Luddendenfoot, Warley, Midgley, and Mytholmroyd have long had under consideration a joint sewage disposal works scheme, and Mr. F. H. Tullock, an inspector of the Local Government Board, is to hold an inquiry into the necessities of each district.

**Lady Sanitary Inspectors.**—A lady sanitary inspector was appointed some months ago by the Vestry of St. George-the-Martyr, Southwark. Much interest was evinced in the experiment, and it is now intended to appoint another lady inspector, whose duties will more particularly include the inspection of workshops in the parish. The salary of the new officer will be £110, rising by annual increments of £10 to £150 per annum.

**Compensation for Sanitary Works.**—A question of considerable interest was decided by the Court of Appeal in the case of Davis v. Witney Urban District Council on March 15th. The plaintiff, Mrs. Ellis Davis, on receiving notice from the District Council that a sewer would be laid through her fields gave notice that she claimed £300 compensation. On the assumption that the work would be executed the matter went to arbitration, and an award was made. But before the award had been made the council abandoned their scheme. The award directed the council to pay £10 for compensation, and also to pay the cost of the arbitration and plaintiff's costs. The question raised was whether, as the work had never been begun and had been abandoned, the award was bad in law. Justices Ridley and Channel, while agreeing that the award was not good, differed on the question of plaintiff's power to recover costs. Lords Justices A. L. Smith, Collins, and Romer dismissed the plaintiff's appeal. They held that the award was invalid for the reason above stated, and that as the £10 awarded could not be recovered, so the part of the award dealing with costs must go by the board also; but Lord Justice Romer added that another part of the Act (the Public Health Act of 1875) gave the landowner power to go to arbitration and get compensation if he could show that damage had ensued by reason of the receipt of the notice of intended works. The plaintiff accordingly was not even now shut out from moving for compensation, and he hoped the District Council would meet the plaintiff, and not force her to incur further expense.—The other Lords Justices concurred in these remarks.

**The buildings in front of the Hotel Cecil** will soon be completely demolished, in order that the erection of the front of the hotel may be finished.



## Builders' Notes.

**The Smoke Nuisance.**—In the Chancery Division of the High Court of Justice, before Mr. Justice North, last Wednesday, the Queen Anne Residential Mansions and Hotel Company brought forward a motion to restrain the New Niagara Company Limited from continuing an illegal nuisance by the emission of smoke and noxious malodorous vapour, said to be emitted from the defendants' premises and produced in the manufacture of artificial ice. The defendant company asserted that, though ice had been manufactured on their premises for several winter seasons, no complaint was made till 1898, when there was a temporary difficulty in getting steam coal; that if there was any great nuisance, it was produced by engines on the underground railway, an incandescent mantel manufactory, and causes other than their works. It was contended also on their behalf that the plaintiff company could only suffer pecuniary loss; they could have no personal inconvenience, and no occupiers were suing, therefore no interlocutory injunction could be granted. It was in evidence that the defendants had requested to be allowed to take a room, to test whether there was any emission in fact, but the plaintiffs had replied to the effect that they had no vacant room. This was used as an argument that the tenants could have suffered little inconvenience. Mr. Justice North considered it was not a case in which he ought to interfere by interlocutory injunction, and refused the motion.

**Dundee Improvements.**—The Dundee Municipality has at present many things in hand concerning the improvement of Dundee. It is contemplated to construct an outlet for the existing esplanade by the formation of a roadway along the south side of the Caledonian Railway, by bridging the railway and by laying out new streets through the grounds of Balgay to Perth Road. In addition there is under consideration a proposed extension of the sea wall westward in a straight line, with a view in the meantime of inclosing about 60 acres of open space. The scheme is estimated to cost £20,000. The Municipality intend in June to take over the tramways, and to extend them to other parts of the city. The purchase will involve an expenditure of about £50,000, while the equipment of the lines and the erection or reconstruction of the necessary lower station—electricity having been fixed upon as the mode of traction—will require an extra £60,000. Further expenditure will be incurred in widening some of the streets to be traversed by the new systems. The probable cost of this department is stated at £26,000. Additions are to be made to the King's Cross Hospital, and the cost will be about £14,000. It has been resolved by the Town Council to build a central fire station, and a site for the building has been obtained in West Bell Street. The sites for nine underground lavatories have been selected, and are estimated to cost £3500. The Central Public Baths are to have a new porcelain swimming bath, several private baths, and one or two recreation and reading rooms. These are expected to absorb about £6000. At the Cattle Market three extra stalls for the use of meat salesmen are to be run up, at a cost of about £300.

**Claim for Extra Work.**—Before Mr. Justice Mathew in the Queen's Bench Division on March 17th, Messrs. Mowlem and Co., contractors and builders, sued the Army and Navy Auxiliary Supply (Limited), to recover £720 for extra work done in connection with a building contract. Defendants denied liability, and counter-claimed for penalties. Mr. Harrison, for the plaintiffs, said his clients entered into a contract for £25,800 for the erection of a large building, which was an addition to the existing buildings of the defendants. The contract, which was dated June 10th, 1895, limited the time within which the work was to be completed. During the execution of the work possession was not

given to the plaintiffs of the various parts of the existing buildings for the purpose of executing the new work, and large additions were made after the time limited for the performance of the contract. The plaintiffs, therefore, said that, having by the direct action of the defendants been prevented from completing within the specified time, the latter were not entitled to recover penalties. The defendants, on the other hand, said they were entitled to deduct from the amount due to the plaintiffs £720, being penalties at the rate of £10 a day for each day beyond the period specified for the completion of the contract, and it was this amount which was in dispute between the parties. Mr. J. Walton, for the defendants, interposing, said the case could only be tried by going into great detail, and it would be much better to try it before the Official Referee, Mr. Pollock, than attempt to deal with it in Court. The case was accordingly referred to Mr. Pollock, the Official Referee.

**Phoenix Fire-proof Plates.**—These plates which have been used extensively for public buildings in Holland, are about to be introduced into this country, and with the object of showing their value, a test was carried out last Wednesday at Willesden before a company of experts. The qualities claimed for the plates are various. By their use any building may be rendered fire-proof at a comparatively small cost. The material much resembles ordinary plaster, and is made up in slabs of varying thickness, which can be fixed by simply nailing and cementing the joints. It is equally adaptable to ceilings, floors or walls, besides lending itself for use in moulded and panel-work. It is inexpensive, simple in composition, and light in bulk, the plates having about the same specific gravity as hardwood. For the test a two-storied structure was built, two lower rooms being constructed with fire-proof plates, the room on the upper storey being entirely of wood. A fierce fire of dry wood and tar was kept ablaze for twenty minutes in one of the lower rooms without materially damaging the walls, or to any extent increasing the temperature of the adjoining room, the walls of which were cool to the touch. Although between the room above and the fire there were only the wooden joists and one-inch plates, no damage was done to the upper portion; neither did the water seem in any way to affect the material when pumped on to the walls while at their greatest heat. The material was shown to be an admirable non-conductor, for even the ordinary nails with which the plates were fixed to the woodwork were in no way affected by the great heat. As to whether this would be so had been a matter of speculation. We may expect soon to see the plates on the market, owing to the simple conditions under which the material can be produced. The conditions of the test were suggested by Mr. R. Philip Day, A.R.I.B.A., and the test was carried out by Messrs. Fry, Everitt and Company, of 55, Suffolk House, Laurence Pountney Hill, E.C.

**A Carter's Claim.**—At the Nottingham and Notts Assizes, before Mr. Justice Bucknill, Frederick Shepherd, carter, of Charlton, claimed from Messrs. Fish and Son, building contractors, the sum of £58 4s. 7d. for cartage work done on their behalf. Mr. Fox, for the plaintiff, stated that the point in dispute was as to whether the work, which was done in connection with excavations at the Saxondale Asylum, was to be paid for according to time, or whether the plaintiff was to have 8d. per cubic yard. The defendants were contractors for part of the work at the asylum, and they had a sub-contractor who threw up the work and left. Plaintiff was employed to carry on the work, but had never done work of this description before, and declared that he had distinctly refused to give a price, his reason being that the previous sub-contractor had done the easiest part of the work. Evidence, defendant stated, could be brought forward to show that 8d. per cubic yard was a fair price. The defendants had set up a counter claim for £7 7s. 9d., alleging that they had paid the plaintiff that amount more than he was

entitled to. The plaintiff, examined by counsel, stated that he was employed by Mr. Palin, the sub-contractor, to provide him with horses and carts for the Asylum contract. Palin's terms were a shilling per hour for the horses and carts. When the sub-contractor left he did not pay him. Plaintiff then offered to go on with the work if defendants would pay him a shilling per hour. They refused to do this, but he was instructed to get on with the work. In accordance with defendant's desire plaintiff set more horses and carts to work. When plaintiff asked for £80, one of the defendants told him that he did not intend to pay it, saying that he had overdrawn, and would only be paid 8d. per hour. Defendants ultimately advanced £30 to pay the men. Plaintiff emphatically denied having agreed to carry on the work at 8d. per yard. The plaintiff's foreman deposed that he was present when the plaintiff arranged to undertake the work, and nothing was said about the price. Mr. F. Fish, one of the defendants, stated that they had employed Palin, the sub-contractor, to do excavations for them on the site of the new Post Office. The price paid was 11d. per hour. Defendants afterwards contracted with Palin to do the work at Saxondale. Subsequently, said the defendant, Shepherd took the work over, and agreed to accept 8d. per yard for doing the remainder of the job. The work was satisfactorily measured up in the presence of the plaintiff. On Aug. 27th the defendant stated that he paid the plaintiff £50 on account, and on Sept. 1st the work was measured up again, with the result that they found the defendant had been paid quite sufficient already. Defendant also stated that he had let plaintiff have £30 on the understanding that he did not move any portion of his plant. Mr. T. Fish corroborated these statements. Thomas Chester, foreman of the works, stated that in conversation with the plaintiff the latter told him that he was getting 8d. per yard. He never suggested at any time that he was doing day work. The jury returned a verdict for the plaintiff for the amount claimed.

## Masters and Men.

**Kirkcaldy Joiners** have gained their demand for  $\frac{1}{2}$ d. per hour advance.

**Grimsby Joiners and Carpenters** ask for an increase in wages of from  $\frac{7}{8}$ d. to 8d. per hour minimum.

**Painters at Galashiels and Newtown** have received a rise from  $\frac{7}{8}$ d. to 8d. per hour in their wages.

**Sunderland bricklayers' and masons' labourers** have applied for an advance in wages of  $\frac{1}{2}$ d. per hour.

**Peterhead Ship-Carpenters** have struck for an advance of wages, these being fixed at 6d. per hour for new work and  $6\frac{1}{2}$ d. for old work.

**Hull Joiners** have struck for  $\frac{1}{2}$ d. an hour increase. They charge their employers with unfairness, and say that they agreed to receive a deputation of the men and then declined to meet them. It is reported that about 500 joiners are affected by the strike.

**Engineers' Wages.**—Replying to an application made by the Amalgamated Society of Engineers on the North-East Coast for an advance in wages, the employers have intimated that they are unable to grant the request, owing to the increased price of material, and for other reasons.

**Arbroath Painters** have applied to the local branch of the Master Painters' Association for an increase of wages at the rate of  $\frac{1}{2}$ d. per hour. It was unanimously resolved by the association to refuse the advance. It has been agreed, however, to invite the employees to a conference.



Engineering Notes.

**The Featherstone Board Schools, Yorkshire,** are to be ventilated by "Cousland's Improved Climax" Patent Direct-acting Turret Ventilators: Design "F," supplied by the "Climax" Ventilating and Heating Co., Ltd., of Glasgow.

**The Technical College and Public Hall, West Hartlepool,** has been fitted with the latest improved hot water heating apparatus by John King Limited, engineers, Benson Street, Liverpool, employing their new "Rajah" ventilating radiators.

**Electric Supply at Manchester.**—Sanction has been given by the Board of Trade to the proposal made by the electricity committee of the Manchester Corporation to supply electrical energy to the districts of Levenshulme, Moss Side, and Withington, on the extra high pressure system.

**Leeds Gasworks.**—The Leeds Gas Committee resolved, at a meeting on March 22nd, to apply to the Local Government Board for power to borrow £150,000 for improvements in the gasworks undertaking. About £100,000 of this sum is wanted for the extensions that are to be made in the gas mains during the next five years.

**The Soudan Railway.**—It is stated that a gang of men from the Pencoyd Ironworks at Philadelphia will leave shortly for the Soudan to erect the bridge which is to carry the Soudan Railway across the Atbara. The seven spans of the bridge, 1100ft. in length, have already been shipped, though the order was given less than six weeks ago.

**New Electrical Station for Greenock.**—At a meeting of the Greenock Electrical Lighting Committee of the Police Board, the following contracts for the erection of an electrical station in Hunter Place were accepted: Builders, Mr. J. M'Ewan, of Dellingburn Street, Greenock; electrical main fitters, the Callanders Co., of London; engine-house plant fitters, the Silverton Co., of London; boiler

makers, Babcock and Wilcox, of Glasgow. The aggregate amount of these estimates is over £30,000.

**Liverpool to Manchester in Eighteen Minutes.**—A sub-committee has been formed of the following gentlemen to inquire into the engineering and commercial feasibility of Mr. Behr's scheme and to report: Manchester representatives: Sir W. H. Bailey, Mr. Edwin Guthrie, Mr. L. Levinstein, Mr. William Mather, Mr. Reuben Spencer, and Alderman Higginbottom. Liverpool representatives: Mr. Danson Cunningham, Mr. Alfred L. Jones, Mr. C. Petrie, Mr. S. B. Cottrell, Mr. A. B. Holmes, and Mr. J. I. Wood.

**Heating and Ventilation in Schools.**—Messrs. Matthews and Yates, Ltd., of Swinton, Lancashire, have just been successful in obtaining the contract for heating and ventilating the Great York Schools, Hanley, Staffordshire, also the Cross Street Schools, Stoke, for both of which Messrs. Scrivener and Son, of Hanley, are the architects. At Hanley, the "Plenum System" has been adopted, a large Cyclone air propeller being used for the fresh air supply, in conjunction with heaters for each room. The vitiated air is extracted by means of Cyclone electric fans placed at convenient points in the roof. At Stoke, direct radiation is the system to be used by means of radiators, fresh air being supplied through them, becoming heated in its inward passage, and the vitiated air is extracted, as at Hanley, by electric pans.

**New Thames Tunnel.**—A scheme was submitted at last week's meeting of the London County Council for the construction of a second roadway tunnel under the Thames, eastward of the Tower Bridge. The scheme has been drawn up by the Bridges Committee, and it is intended that the tunnel shall run between Shadwell and Rotherhithe. The total length of the proposed tunnel and approaches, from Union Road on the south to Commercial Road East on the north, will be about 1½ miles. The width of the thoroughfares proposed in the Rotherhithe Tunnel is 17ft. for the carriage-way and 4ft. 2in. for each footway. The approximate estimate of the total cost of the scheme is £2,198,250. Of this £798,250 is for the acquisition of the

necessary property, but this sum also includes the cost of acquiring sites for the rehousing of those persons of the working classes who may be displaced by carrying out the scheme. As to the engineering work, it is proposed to carry it out in precisely the same way as at Blackwall. The excavators will work in compressed air. The tunnel will be of iron with a backing of concrete, and will be lined with white bricks. The consideration of the matter was adjourned.

**Engines for Electric Railway Traction.**—Messrs. Cole, Marchent and Morley, of Bradford, have just completed the first of two pairs of horizontal compound Corliss engines for the City and South London Railway, which is now approaching completion, and will probably be opened for traffic about June or July next. Each pair of engines is of about 1200 indicated horse power, and is designed to run directly coupled to the dynamo, the crank shaft of the engine and the armature shaft of the dynamo being in one. The general design of the engines is not unlike that of a very short, stiffly built, high-pressure horizontal steam engine, the only difference between the two being that the low-pressure engine has a much larger cylinder. The engines are to be placed side by side, with just sufficient room between them for the flywheel and the dynamo. The diameter of the high-pressure cylinder is 24in., and of the low-pressure cylinder 48in., the stroke being only 48in. The speed is eighty-five revolutions per minute. The Corliss valve gear is of the ordinary type, with vacuum dash-pots instead of springs. The flywheel is built up of dished steel plates bolted to a heavy cast-iron hub and having a heavy cast-iron rim. All the cranks and eccentrics are encased so as to prevent the possibility of oil being thrown on to the dynamo, and this closing-in of the engine renders it possible to keep a constant stream of oil running through all the bearings. The engines are designed to work with a boiler pressure of 160lb. per square inch. The governing apparatus acts upon both high and low pressure cylinders simultaneously, and in addition to the main governor there is an auxiliary governor designed to pull the engine up entirely in the event of a short circuit tending to cause the engines to run away. The weight of each pair of engines is about 120 tons.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—			
March 31	Llangollen—Two Houses	— Hughes	— Denny, Architect, Llangollen.
April 1	Amberst, St. Peter Port, Guernsey—School	States of Guernsey Education Com.	Coleson, Farrow, and Nisbett, 45, Jewry-st., Winchester.
" 1	Englefield Green, Surrey—Enlarging School, &c.	School Managers	W. Menzies, Architect, Englefield Green, Surrey.
" 1	Ipswich—Asylum Alterations, &c.	Asylums Committee	E. Buckham, Borough Surveyor, Town Hall, Ipswich.
" 3	Ardrossan, Scotland—Academy	School Board	J. Armour, jun., Architect, Irvine.
" 3	Cwmaman, Aberdare—Seventeen Houses	Building Club	Ll. Smith, 20, Commercial-street, Aberdare.
" 3	Hastings—Stabling, &c.	Corporation	P. H. Palmer, Borough Engineer, Town Hall, Hastings.
" 3	Pontycymmer, Wales—Chapel, Vestry Room, &c.	English Congregational Church	P. J. Thomas, Architect, Bridgend.
" 4	Clifton, Cumberland—Altering, &c., Parish Church	Urban District Council	J. Howe, Architect, Workington.
" 4	Fleetwood, Lancs.—Underground Convenience	School Board	J. Tildsley, Clerk, Town Hall, Fleetwood.
" 4	Great Yarmouth—Alterations, &c., to School	School Board	Boote and Olley, Architects, Queen-st., Great Yarmouth.
" 4	Ranceby, near Sleaford, Lincs.—Superstructure of Lunatic Asylum	Kesteven County Asylum	G. T. Hine, 35, Parliament-street, S.W.
" 4	Leyton, E.—Public Baths	Urban District Council	Town Hall, Leyton, E.
" 5	Llangrwyne, Abergavenny—Concrete Wall, &c.	Terrell and Sons	H. E. Thomas, Clerk to County Council, County Hall, Brecon.
" 5	Bristol—Rope Factory, &c.	Roman Catholic Schools	H. Williams, 24, Clare-street, Bristol.
" 5	Egremont, Cumberland—Alterations, &c., to Schools	North-Eastern Rly. Co.	J. S. Stout, Gillfoot, Egremont.
" 5	Hull—River Walls	North-Eastern Rly. Co.	T. M. Newell, Engineer, Dock Office, Hull.
" 5	York—Offices	North-Eastern Rly. Co.	W. Bell, Architect to Company, York.
" 5	Lanchester—Bridge over New House Burn	School Board	The Surveyor, Lanchester, Durham.
" 6	Tipton—Block of Schools	Wesleyan Chapel	A. Long, 21, High-street, West Bromwich.
" 6	Halifax—Iron Foundry, &c.	County Council	Jackson and Fox, 7, Rawson-street, Halifax.
" 6	Halwell—Two Cottages	Mrs. Jenkins	Rev. B. Wheeler, The Vicarage, Halwell.
" 7	Ushaw Moor, near Durham—Premises	St. Pancras Vestry	J. W. Taylor, 31, Westgate-road, Newcastle-upon-Tyne.
" 8	Durres, County Cork—Church	Hornsey Urban District Council	M. A. Hennessy, 74, South Mall, Cork.
" 8	Longford Bridge—Rebuilding Retaining Wall, &c.	Governors of Johnson Tech. School	W. H. Ridford, County Bridgemaster, County Offices, Preston.
" 10	Corrily, near Pyle, Wales—Villa	L.N.W. and G.W. Railway Companies	P. J. Thomas, Architect, Bridgend.
" 10	London, N.W.—Two Underground Conveniences	R. Newton	W. N. Blair, Engineer, Vestry Hall, Pancras-road, N.W.
" 10	London, N.—Public Library Buildings	Corporation of Trinity House	E. J. Lovegrove, Surveyor, Southwood-lane, Highgate, N.
" 11	Durham—Technical School	Great Western Railway Co.	Oliver and Leeson, Bank-chambers, Newcastle-upon-Tyn.
" 11	Helsby, Cheshire—Six Cottages	Chelsea Guardians	Joint Engineer, Birkenhead Station.
" 13	Gatehead—Rebuilding Public House		A. G. Kyle, 145, Pilgrim-street, Newcastle.
" 17	London, E.C.—Buoy Store, &c.		Secretary, Trinity House, London, E.C.
" 18	Cardiff—Stable		Engineer, G.W.R. Station, Newport.
" 18	London, S.W.—Two Bath Turrets at Infirmary		Lansdell and Harrison, 33, Bow-lane, E.C.
No date.	Elland, Yorks.—Church		G. H. Fellowes Frynne, 6, Queen Anne's Gate, S.W.
ENGINEERING—			
April 1	Guernsey—Steam Roller	Public Thoroughfares Committee	T. J. Guilbert, States Surveyor, Public Works Department, States Office, Guernsey.
" 3	Dunkeld, Scotland—Laying Cast-iron Pipes	Perthshire County Council	Thomson and Wright, 22, Rutland-square, Edinburgh.
" 3	Edinburgh—Water-tube Boilers	Magistrates and Council	Resident Engineer, Electric Lighting Station, Edinburgh



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—Continued.</b>			
April 4	Needham, Suffolk—Bridge	County Councils	T. H. B. Heslop, County Surveyor, Norfolk.
" 4	Rochford—Construction of Wall	Rural District Council	J. Mansergh, 5, Victoria-street, W.
" 4	Ledbury—Covered Reservoir, &c.	Urban District Council	R. E. W. Berrington, Engineer, Bank-blds., Wolverhampton.
" 5	Bury, Lancs.—Gas Purifiers, Valves, &c.	Gas Committee	H. Simmonds, Engineer, Gasworks, Elton, Bury.
" 5	Aberdeen—Boilers, Dynamo, &c.	Corporation	J. A. Bell, City Electrical Engineer, Town House, Aberdeen.
" 5	Pandy—Lattice Girder Bridge	Rural District Council	R. L. Bamford, Surveyor, Widemarsh-st, Hereford.
" 5	Thrapston—Waterworks	Norwegian State Railways Administration	T. Lloyd, Halford-street, Thrapston.
" 5	Christiania—Railway Carriages	Admiralty	Commercial Department, Foreign Office, S.W.
" 6	London, S.W.—Ships, Pumps and Gear	Gas Committee	Director of Navy Contracts, Admiralty, Whitehall, S.W.
" 6	Warrington—Hopper-bottom Coal Wagons	Water Company, Limited	W. S. Haddock, Gas Engineer, Gas Offices, Warrington.
" 6	Farnham—Cast-iron Main	Lighting Committee	J. W. Lewis, Waterworks, Farnham.
" 8	Wolverhampton—Steelwork	Neath Harbour Commissioners	J. W. Bradley, Borough Surveyor, Town Hall, Wolverhampton.
" 10	Briton Ferry, Glamorgan—Removal of Lock	Town Council	Harbour Offices, Briton Ferry, Glamorgan.
" 11	Dover—Hopper Barge	Corporation	H. E. Stilgoe, Borough Engineer, Town Hall, Dover.
" 12	Welshpool—Filters, &c.	Corporation	C. H. Beloe, and F. E. Priest, 13, Harrington-street, Liverpool.
" 13	Burton-upon-Trent—Bridge Ironwork	Corporation	G. T. Lynam, Borough Engineer, Burton-on-Trent.
" 13	London, E.C.—Railway Carriages	Midland Railway Company Limited	R. A. Fayer, Secretary, 45, Cophall-avenue, E.C.
" 13	Leigh-on-Sea—Laying Cast-iron Pipes, &c.	Urban District Council	J. Mansergh, 5, Victoria-street, S.W.
" 13	Greenwich, S.E.—Sinking Well	Union Guardians	T. Dinwiddie, 12, Croom's-hill, Greenwich, S.E.
" 15	Tynemouth—Electricity Plant	Corporation	Lacey, Clithugh, and Sillar, 2, Queen Anne's-gate, Westminster.
" 15	Heswall, Cheshire—Sea Defence Wall	Colony	C. W. Oats, Dee View-Hoad, Heswall, Chester.
" 17	Cape of Good Hope—Railway	Great Western Railway Company	Agent-General for the Cape of Good Hope, 112, Victoria-street, S.W.
" 18	Llanhilleth and Aberbeeg—Widening Line	North-Eastern Railway Company	Engineer, Great Western Railway Station, Newport.
" 19	Seaham Harbour and Hartlepool—Railway	Corporation	W. J. Cudworth, Company's Engineer, Darlington.
" 20	Peterborough—Electric Lighting Plant	Corporation	J. C. Gill, Engineer, Municipal Offices, Peterborough.
" 23	Port Louis, Mauritius—Electric Lighting	County Council	Agent-General for Mauritius, 9, Idol-lane, City.
" 25	London—Alterations at Pumping Station	Waterworks Company	Engineer's Department, County Hall, Spring Gardens, S.W.
" 27	Gravesend and Milton—Engines, Pumps, &c.	Dublin, Wicklow, & Wexford Ely. Co.	J. Mansergh, 5, Victoria-street, S.W.
May 1	New Cross and Waterford—Railways	City Council	M. F. Keogh, Secretary, Westland-row Station, Dublin.
" 2	Perth, Western Australia—Electric Lighting Concession	Poplar Union	Agent-Generals for Western Australia, 15, Victoria-street, Westminster, S.W.
" 17	London, E.—Construction of Wells, &c.	Municipal Council	E. J. W. Stevens, 34, Victoria-street, S.W.
June 30	Shanghai—Tramway Concession	Municipality	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
No date	Nikolaiev, Russia—Waterworks		Commercial Department, Foreign Office, S.W.
<b>IRON AND STEEL—</b>			
April 3	Dunkeld, Perthshire—Pipes, &c.	County Council	Thomson and Wright, 22, Rutland-square, Edinburgh.
" 3	Manchester—Railway Stores	Lancs. and Yorks. Railway Co.	Stores Department, Osborn-street, Manchester.
" 5	Watford—Wrought Iron Fencing, &c.	Urban District Council	D. Waterhouse, 14, High-street, Watford, Herts.
" 6	Valletta, Malta—Wrought-iron Pipes, &c.	Crown Agents	Crown Agents for the Colonies, Downing-street, London.
" 11	Christiania—Tools, &c.	Otosen State Railways, Narvik	Commercial Department, Foreign Office, S.W.
" 12	Hull—Ornamental Wrought Iron Gates	Corporation	A. E. White, City Engineer, Town Hall, Hull.
" 12	Madras—Cast-iron Pipes	Municipal Commission	H. S. King, and Co., 65, Cornhill, London.
<b>PAINTING AND PLUMBING—</b>			
March 31	Blaenconin, Pembrokeshire—Painting &c., Chapel	Bethnal Green Guardians	J. Morris, Stafford House, Llandissilio, Clynderwen.
April 4	London, E.—Painting, Repairs, &c., at Schools	Sanitary Authority	Holmen and Goodham, 109, Bow-road, E.
" 5	Ipswich—Paints, Oils, &c.	Corporation	E. Buckham, Borough Surveyor, Town Hall, Ipswich.
" 10	Stafford—Painting Carts, &c.		W. Blackshaw, Borough Engineer, Borough Hall, Stafford.
<b>ROADS AND CARTAGE—</b>			
March 31	Barton Regis—Stone, &c.	Rural District Council	J. A. Henderson, Surveyor, Winterbourne.
" 31	Congleton—Granite and Drain Pipes	County Council	R. Burslam, Borough Surveyor, Market-square, Congleton.
" 31	Aylesbury—Granite	Urban District Council	E. J. Thomas, County Surveyor, County Hall, Aylesbury.
April 3	Carriekfergus—Square Setting	Urban District Council	J. Boyd, Clerk, Town Hall, Carriekfergus.
" 3	Selby—Whinstone	Urban District Council	B. McG. Gray, Town Surveyor, Town Hall, Selby.
" 4	Newburn-on-Tyne—Materials	Urban District Council	T. Gregory, Surveyor, Urban District Council Offices, Newburn-on-Tyne.
" 4	Oban, Argyll, N.B.—Road Repair, &c.	County Council	K. Macrae, 5, Argyll-street, Oban.
" 4	London, S.W.—Cartage and Materials	Middlesex County Council	H. T. Wakelam, County Surveyor, Guildhall, Westminster.
" 4	Bromley, Kent—Materials	Urban District Council	F. H. Norman, Clerk, Council Offices, Bromley.
" 4	Cannock, Staffs.—Materials and Carting	Rural District Council	H. M. Whitehead, District Surveyor, Brewod, Stafford.
" 4	West Bridgford—Tar Paving Works	Urban District Council	W. Fare, Engineer, George-road, West Bridgford.
" 5	Twickenham—Street Watering Vans, &c.	Urban District Council	F. W. Pearce, Council's Surveyor, Town Hall, Twickenham.
" 5	Barry Docks, near Cardiff—Road	Urban District Council	J. C. Pardoe, 50, Holton-road, Barry Docks.
" 5	Houghton-le-Spring—Road Materials	Rural District Council	D. Balfour, Surveyor to Council, Houghton-le-Spring, R.S.O.
" 5	Middleton, Lancs.—Materials, Paving, &c.	Corporation	W. Welburn, Borough Surveyor, Town Hall, Middleton.
" 5	Southend-on-Sea—Road	Corporation	A. Fidler, Borough Surveyor, Southend.
" 6	Westminster, S.W.—Asphalt Paving Works	Vestry	G. B. W. Wheeler, Town Hall, Caxton-st., Westminster.
" 6	Lutterworth—Materials	Monks Kirby Rural District Council	J. C. Coates, District Surveyor, Bitteswell, Lutterworth.
" 7	Stamford—Roads, &c.	Urban Sanitary Authority	T. J. Ward, Surveyor, Stamford.
" 10	London, N.W.—Wood Paving Blocks	St. Pancras Vestry	W. N. Blair, Surveyor, Vestry Hall, Pancras-road, N.W.
" 12	London, N.—Granite Setts	Islington Vestry	J. P. Barber, Vestry Hall, Upper-street, N.
" 18	Gloucester—Stone and Haulage	Highway Board	— Weaver, Surveyor, Denmark-road, Gloucester.
<b>SANITARY—</b>			
March 31	Stoke-upon-Trent—Sewerage Scheme	Rural District Council	L. Sugden, 20, Cheapside, Hanley.
April 3	Northallerton—Sewer, &c.	Rural District Council	W. Fowle, Clerk, Northallerton.
" 4	Stoke-upon-Trent—Removal of Refuse, &c.	Rural District Council	G. McHarg, Inspector of Nuisances, Bucknall.
" 4	Harlesowen—Sewerage Works	Rural District Council	W. Fiddian, Engineer, Town Hall, Stourbridge.
" 4	Egremont, Cumberland—Sewers, &c.	Urban District Council	Surveyor, Town Hall, Egremont.
" 4	E. Donyland & Denham, Essex—Removal of House Refuse	Rural District Council	Chas. H. Tompson, Victoria-chambers, Colchester.
" 4	King's Lynn—Sewers	Corporation	E. J. Silcock, Engineer, 10, Park-row, Leeds.
" 5	Birmingham—Drain Pipes	District Drainage Board	J. Knight, Council House, Birmingham.
" 5	Exeter—Stoneware Pipes, and Concrete Tubes	City Council	D. Cameron, 18, Bedford-circus, Exeter.
" 5	Hove, Sussex—Drain Pipes, &c.	Council	H. H. Scott, Borough Surveyor, Town Hall, Hove.
" 6	London, E.—Drain Pipes	Bethnal Green Vestry	F. W. Barratt, Vestry Hall, Church-row, Bethnal Green, E.
" 7	Andover—Sewerage Works	Town Council	A. Purkess, Borough Surveyor, Andover.
" 12	Brightlingsea, Essex—Sewerage Works	Urban District Council	J. J. Taylor, 1, Victoria-street, Westminster, S.W.
" 12	Westbury-upon-Tyrm—Sewerage Works	Barton Regis Rural District Council	A. P. J. Cotterill, 7, Baldwin-street, Bristol.
" 20	Bexhill—Sewerage Works	Urban District Council	G. Ball, Surveyor, Town Hall, Bexhill.
May 12	Johannesburg—Sewerage Scheme		Town Engineer, Johannesburg.

## COMPETITIONS.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
March 31	Forfar—Isolation Hospital	£31 10s., £21, £15 15s.	Dundee and Forfar District Committees.
" 31	Swindon—Additional Fever Pavilion		W. H. Kinner, Clerk to Hospital Board, High-st., Swindon.
April 14	Bradford—Cartwright Memorial Hall and Art Gallery	£150, £100, £50	City Surveyor, Bradford.
" 18	Fleetwood—Schools	£10 10s.	Clerk, School Board, Fleetwood.
" 30	Ramsgate—Concert Hall, Reading Room, Lavatories, &c.	£50, £20, £10	T. G. Taylor, Surveyor, Broad-street, Ramsgate.
May 1	Stockton-on-Tees—Market Hall	£25, £15, £10	Corporation.
June 1	Leeds—Market Hall and Shops	£150, £100, £50	Corporation.
" 3	Harrogate—Kursaal	£150, £100, £75	Corporation.
No date	Ballyshannon, Ireland—Rectory		Rev. W. Baillie, M.A., Laputa, Ballyshannon.



## Property and Land Sales.

To Builders, Contractors, and others.

**MESSRS. FULLER, HORSEY, SONS, AND CASSELL** are instructed to **SELL** by **AUCTION**, in lots, at South Wharf, Lowestoft, on **TUESDAY, APRIL 18th** at half-past 12 precisely, **SAW-MILL PLANT AND MACHINERY**,

including vertical timber frame, two double deal frames, two circular saw benches, two moulding machines, panel planer, two general joiners, trying-up machine, two fret saw machines, tenoning machine, Richard's patent mortising and boring machine, 6 foot-power mortising machines, dovetailing, treenail, sand-papery, and painting machines, wood-turning lathe, two mitre cutters, moulding iron grinder, water of Ayr stone, eight glue-heating stoves, 118 joiners' benches, frame and circular saws, cutters, chisels, carpenters' and joiners' tools, planing machine, drilling machine, two lathes, engineers' and smiths' tools, two Cornish boilers, 30 h.-p. condensing beam engine, 20 h.-p. horizontal condensing engine, table engine, shafting and gearing, leather lands; also

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of the Saw Mills and other buildings, comprising about two tons lead on roofs, 250 squares slates, 150 squares tiles, 250 squares slate boarding, 600 squares flooring, 600 squares rough and weather boarding, about 100 loads timber in roofs, girders and uprights, sashes and doors, 60 rods brickwork, quantity bricks, tiles, stone, drain pipes, old lead and iron and builders' materials, water-cart, three tumbrel and spring carts, nine trolleys and wagons, two timber whims, and other effects.

May be viewed the day preceding sale, and catalogues had on the premises; and of Messrs. FULLER, HORSEY, SONS, and CASSELL, 11, Billiter-square, London, E.C.

## Auctions for the Year 1899.

**MESSRS. TROLLOPE'S SALES OF FREE-HOLD AND LEASEHOLD ESTATES, HOUSES, GROUND-RENTS, &c.**, will take place at the Mart, E.C., as follows:—

Thursday, April 20th	Thursday, August 3rd
Thursday, May 18th	Thursday, October 19th
Thursday, June 8th	Thursday, November 23rd
Thursday, July 13th	Thursday, December 14th

Sales will be held on other dates as required. In all cases Messrs. Trollope will be glad to have as long notice as possible respecting any property they may be instructed to offer by auction.

## Forthcoming Sales for the Year 1899.

**MESSRS. E. and H. LUMLEY (Lumleys,** of St. James's House, 22, St. James's-street, London, S.W.) beg to announce the following days of **SALE by AUCTION**, for the forthcoming year, at the Mart, Tokenhouse-yard, E.C.; but, in addition, other dates can be arranged for special sales. Terms on application.

Tuesday, April 25th	Tuesday, Aug. 15th
Tuesday, May 23rd	Tuesday, Sept. 12th
Tuesday, June 6th	Tuesday, Oct. 17th
Tuesday, June 20th	Tuesday, Nov. 14th
Tuesday, July 4th	Tuesday, Nov. 23rd
Tuesday, July 18th	Tuesday, Dec. 12th

Messrs. E. and H. Lumley announce in the advertisement columns of the "The Times" on Saturdays a complete list of their sales, which will include estates in England, Ireland, and Scotland, town and country properties, ground-rents, reversions, gas and water shares, stocks, &c. In cases where property is to be included ample notice should be given in order to insure due publicity.—St. James's-house, No. 22, St. James's-street, S.W.

## Dates of Sales for 1899.

**MESSRS. EDWIN FOX and BOUSFIELD** announce, for the convenience of their employers, that their **SALES by AUCTION OF LANDED and HOUSE PROPERTY**, Ground and Improved Rents, Reversions, Policies of Assurance, Shares, and other Securities, will take place during the year 1899, at the Auction Mart, Tokenhouse-yard, Bank of England, on the following Wednesdays in each month:—

April 12th	June 21st	October 18th
April 19th	June 23rd	October 25th
April 26th	July 5th	November 1st
May 3rd	July 12th	November 8th
May 10th	July 19th	November 15th
May 17th	July 26th	November 22nd
May 24th	August 2nd	November 29th
May 31st	September 20th	December 6th
June 7th	October 11th	December 13th
June 14th		

The prices realised at these auctions are not included in the official reports, such quotations being often injurious, and never beneficial, to the only parties concerned—buyer and seller.

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Particulars at the Mart; at Messrs. EDWIN FOX and BOUSFIELD's Office, 99, Gresham-street, Bank, E.C.; and of the

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**ANSELL and MALLOWS, Architectural** Draughtsmen and Quantity Surveyors, 21, Buckingham-street, Strand, W.C. 1

**R. I. B. A. EXAMS. PREPARATION,** personally or by correspondence, in three, six, nine, or twelve months' courses. Architectural Lending Library. Special three months' finishing courses.—For full particulars apply to Messrs. HOWGATE and BOND, Associates R.I.B.A., Perchard House, 70, Gower-street, W.C. (close to the British Museum)

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The charge for Advertisements under this heading is 1s. 6d. per insertion not exceeding four lines, and 6d. per line afterwards, prepaid. Three insertions may be had for the price of two.

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APRIL 5, 1899.

No. CCXVII.

## An Architectural Causerie.

### The Complaint of the Student.

THERE is something in the nature of a plaint, which makes it peculiarly

offensive to the average prosperous Englishman. He does not pause to examine it from any unbiased standpoint, nor indeed does he deign to look into it at all, but with quite refreshing vigour and emphasis he condemns it utterly. There is absolutely no reason in his condemnation, that would be too great a demand upon his British intellect; for he dislikes equally a plaint with point in it, or a plaint without. I do not therefore expect the smallest sympathy from the "Powers that be," but I rely on our friends—the suffering students themselves—to support us through the coming trouble. Yet I am fully aware that the majority of students bear their sorrows with equanimity, and suffer in silence. The reason for this is that so many of them are themselves unaware of the viciousness of the system under which they work. Doubtless, if we searched, we might find a plentitude of extenuating circumstance, wherewith to defend the Department; to find these, however, is not my present purpose. I will describe my own personal experience at an institution of reputation which draws its yearly grants with becoming regularity. One of the subjects I was engaged in studying was "Design," a sufficiently comprehensive title, and enough to satisfy the most demanding of students. This was the manner of the class procedure: We gathered one evening a week, and in no way was that evening dull. Our examination of the subject was, to say the least, ambitious; we disdained no branch of design; no period of its history was without our ken, cursory enough, it is true, but little escaped our passing consideration. We had a truly admirable man as instructor, genuine and sincere, he was prepared to work with one and all in any way whatsoever, but as a teacher of design—well I would prefer to leave unexpressed my opinion. He slaved away at the hardly-used blackboard with unwearying arm; coloured chalks he used to heighten his effects, but the effect of all this on a student striving to gain an insight into the real principles of design must have been disastrous in the extreme. A word would lead him lightly from a discussion on Saracenic art, to one on Doulton's pottery. He would describe with equal enthusiasm—with a truth that I sometimes doubted—the principles of English art candlestick making, and the aim of the Dutch painters of the fifteenth century. The art of the Venetian glassworkers had as much interest for him, and consequently for us, as the most crudely mediocre of "sky signs." It would be no light work to give a list of the subjects we touched upon in that weird course of lectures. Tapestry, book-binding, enamelled iron signs, carving, wall-papers, and black and white work passed in a whirl before our astonished eyes. Even the composition of a picture came within our scope, and we saw ourselves by the light of his enthusiasm already leading stars in

artistic expression. But alas! We awoke, one and all, to find that our design was *nil*, and our knowledge from this course of lectures a minus quantity. In all probability the same thing is going on at this moment, instructor and students working for absolutely nothing; all their efforts ending in futility and confusion. Yet while this state of things was in progress, a representative of the Technical Education Board of the London County Council, a man I knew well by his excellent work and thorough knowledge, came in for a few minutes, and after standing modestly by the door, departed like a shadow, and the result of his visit was as if he had indeed been one. Of course it can be argued that even this system has brought forth its successful men and genuine Art workers, but I maintain that the result of their progress was in no way due to their work at such schools. In my personal experience I may be quoting an extreme case, yet it is apparent that the school's extremity of bad teaching has not endangered its grant, nor brought down criticism upon its hoary conservative head from outsiders, nor from the Technical Education Board. On my describing this to a friend,

touch for long-sweeping curves. He dilates on what "style" he considers the examiners will like, and what executive power is necessary to pass the test, but on the beauty of line or combination of lines he is silent. Of a truth he knows nothing of this, and so the essential principle is ignored, discarded as impossible to teach. I have known many who have followed the art schools for years to no purpose, except for a certain mechanical skill, but their artistic judgment was still uneducated and even uncouth. You could not trust their appreciation with certainty in any particular; they were uneducated artistically, and this as a result of years of South Kensington! The resulting tendency of genuine art teaching, should be an intense desire for original creative effort, or the formation of a true critical appreciation. This can be managed quite independently of historic art, although a discreet knowledge of it in its best examples should add materially to the creative outburst, as it most certainly would to the critical appreciation. Yet, granting it possible under the present conditions of art teaching that a desire for creative effort could be developed, we find here also the arrangement wholly inadequate. The



THE OLD BUILDING OF THE ROYAL UNITED SERVICE INSTITUTION IN PARLIAMENT STREET.  
(This building is now demolished, and its site is to be occupied by the new War Office.)

an upholder of the present pernicious system, I found his contention curiously illogical. He maintained that the particular evil of the class I had attended was in the attempt to cover the "whole ground," as he called it. "You cannot take every branch of design at once," said he, "but must, like an army corps, advance by sections." This is an ingenious theory, but a totally fallacious one, for the principle which underlines design will permit of no disintegration by "sections." The mistake which both the instructor and my friend made was in thinking that design could be taught by a knowledge of examples of historic design. But design is an art which is independent of its history, and is either gently instilled with infinite care, or is a purely natural growth. Another great reason for expressing a conviction as to the inadequacy of the art teaching in our schools is the essential detachment of subjects which is enforced and accepted as necessary and expedient. For instance, you may go to a school and take out of many sections or subjects the one, let us say, of second grade freehand drawing. The class is presided over by a master with a happy

strongest upholder of the present system could not maintain that they even do this, and here alone we have an indictment sufficiently severe, but it is not all. Granting the creative feeling is firmly established, no provision has been made in the smallest degree to supply a knowledge of the various mediums of Art workers in order to encourage its exercise. They will let you design for leather, wood, iron, silver, gold, glass, tapestry, or any other medium, but they will supply no knowledge of the nature of any of them. The teaching does not extend to practical demonstration; the line of demarcation is firmly drawn here, and except in the case of the easily accessible clay modelling and woodcarving class, there is no practical exercise given to the student. It is a surprising fact, such being the case, that so many of the arts associated intimately with the less accessible mediums, should flourish practically unfed by the schools around them. But the professed aim of the schools is to feed them, and as we see, it is quite unaccomplished. Were the students aware of the vicious system under which they work, few would be prepared to give their time for so small a return.

F. B.



## On Reflection.

### Instructions to Architects!

THE Markets Committee of the Leeds Corporation has lately invited designs for a New Market Hall, "of first-class quality and ornate character," but the language in which these "conditions" have been drawn up is not such as can be expected to encourage, much less attract, possible competitors. The members of the committee have been careful to make quite clear that they desire "geometrical drawings of the basement and each floor," and "geometrical sections" are also expressly mentioned lest competitors should seek to lighten their labours by drawing them freehand. Particular instructions are added directing that these plans and sections shall be "coloured in the ordinary manner, and on the lines, and of the number necessary, &c." The corporation is, it seems, diametrically opposed to the common usage of excluding perspective views from competitions. Elevations it does not ask, but it must have perspectives; not merely one perspective, not two, not even three will satisfy it; it demands "four perspective drawings, two showing front elevations, and two showing internal elevations." With much point and moderation Mr. George Corson, in his professional representative capacity as president of the Leeds and Yorkshire Architectural Society, has worded a letter to the Lord Mayor of Leeds calling attention to these anomalies and to other shortcomings which appear in the "conditions," and suggesting that it would be well if the "conditions" were re-cast. This letter has been printed in the "Yorkshire Post." We are not entirely at one with Mr. Corson in advocating that the name of the assessor should be published at the outset in the conditions, for though this is certainly a guarantee which would be appreciated and would popularise the competition, it is apt to influence the style of design and principles of plan adopted by competitors. On the other hand we can strongly endorse what Mr. Corson says as to the hollow futility of appointing an assessor, and, as is proposed in this case, limiting his discretion to the selecting of six designs upon which the committee shall afterwards adjudicate to determine the actual awards. Under such a division of responsibility the most that the assessor can achieve is to secure for the best design that its chance of first place shall not be less than as one to five against. This is poor consolation to a well-meaning competitor.

**A Contrast.** In contrast to the methods of the Leeds Markets Committee may be mentioned those adopted in promotion of the competition for the erection of a Kursaal and enlargement of Spa Concert Rooms for the Town Council of Harrogate. The "conditions" are, on the whole, satisfactory, and the premiums aggregating to the sum of £325 on an estimated expenditure of £20,000 are well up to the average. What is particularly to be commended, however, is the thoroughness with which the instructions to architects have been drawn up, and the pains at which the Council has been to secure the best information upon the subject of its requirements, and the perfected form in which it has presented that information to would-be competitors. Four plans, showing alternative schemes of arrangement have been drawn up by the borough surveyor. The Corporation further appointed a deputation, to visit Continental Spas, and the report of this deputation, embodying a description of the essential characteristics of a large number of Conti-

mental watering-places, and including a plan of the Kursaal at Ostend, which meets the idea of what the Corporation desires, is included with the plans and instructions, which are sent to intending competitors on application. We hope that the enterprise and the fair and open proposals of the Corporation will result in a large number of drawings being submitted, and that the Corporation will finally secure a building which will meet all the desired ends. At the same time, we notice the usual clause relieving the promoters of responsibility to appoint the winner of the first award to carry out the work. We hope that the Corporation does not overlook the fact that it is the chance of a commission, not of a premium, which induces architects to compete. The conduct of the Corporation in a recent competition, on which we had occasion to comment, leads us to doubt whether all its members quite realise that point.

### The Beautifying of London.

THE chief item of interest in the architectural world during the past few days has been the completion and exhibition of the designs for the new Government offices. We deal elsewhere with the merits of the designs, but one or two general considerations suggest themselves as worthy of remark. In the first place, it is beyond question that the new buildings will form a real addition to the worthy architectural features of the metropolis, and will add appreciably to its outward dignity. A rather curious illustration of this is afforded by the two photographs we publish this week of the buildings, now demolished, which stood on the sites to be occupied by the new Government buildings. The demolition of the block of mean houses known as the "King Street Block"—illustrated on page 127 to make room for Mr. Brydon's new Government buildings, has made possible as fine an architectural combination as is to be found in any city in the world: Westminster Abbey with St. Margaret's Church, the Houses of Parliament, and the new Government buildings about to be erected. Hardly less striking is the improvement that is to be effected in Whitehall. No one will regret the disappearance of the old building of the Royal United Service Institution, which makes room for Mr. Young's new War Office, a building which will form a worthy companion to the adjoining Banqueting Hall of Inigo Jones. Without indulging in any exaggerated laudation we may reasonably congratulate ourselves on a scheme that, when fully carried out, will make Parliament Street and Whitehall one of the finest thoroughfares in Europe. But there is also, it seems to us, another matter for congratulation. The interest aroused by the proposed new buildings is by no means confined to architects. The daily newspapers, which form a very fair index to the subjects that are occupying the public mind, have within the past few days devoted much space to articles on the subject; from which it may fairly be inferred that the average Londoner is beginning at last to take an interest in the buildings that are to adorn his city. Nor are there wanting other signs of this awakening interest. The demand that the new Vauxhall Bridge shall have some beauty of form as well as stability; the outcry against a scheme of decoration which threatens to impair the architectural features of St. Paul's Cathedral; the formation of a society to prevent the disfigurement of our buildings by coal smoke; the protests against hideous advertisements in our streets—all are signs, small in themselves, of a growing appreciation of the beautiful, and a growing sense of civic pride that may well inspire us with hope for the London that is to be.

## A "BUILDERS' JOURNAL" COMPETITION.

UNDER the heading "An Architect Wanted," we announced last week our intention of instituting a competition for designs for a country house. As we go to press this week earlier than usual, owing to the Easter holidays, we have been unable to obtain the necessary particulars from the client on whose behalf the competition is to be held in time for publication in this number. We hope, however, to publish a detailed statement of the Conditions of Competition in our next issue.

## DECORATIONS IN RELIEF.

PLASTER relief in its many forms and variations is a very familiar form of ornament, and while relief decoration has great possibilities, it likewise has its limitations. Thus too much decoration in relief is as bad as none whatever, and the one great danger decorators have to contend against in its employment is the possibility of overdoing it, while some very neat decorative effects can be obtained by the employment of pure and simple relief work. It has somewhat become the fashion of late years to decorate ceilings and walls with fabric hangings in conjunction with relief work, this latter being employed to frame off panels of silk, damask or tapestry. The walls of many beautiful drawing-rooms have been treated in this way, while the ceiling consists of a sky decoration painted upon canvas, and set in an oval or circular panel surrounded with more or less heavy work in relief.

One method of decorating a room of this description is as follows: Let all the cracks and blisters in the ceiling and wall be thoroughly cut out and filled in with plaster. The shape of the panel on the ceiling is then laid out, after which the relief work is put on either by hand with the modelling tools, or by means of any of the papier maché or moulded plaster forms. That portion of the ceiling which is to have the canvas panel is then coated over with thick paste, consisting of white lead and varnish, of such a consistency that it can hardly be applied with a brush. The canvas must then be smoothed over with a roller and the palm of the hand, and after it has been satisfactorily smoothed and the blisters have been got rid of, the edges where they meet the relief work must be nicely trimmed off with a knife. As a rule all canvas decorations are painted before they are put up with the exception of a few finishing touches. If the decorations on the walls are to be exactly the same, the method of applying the canvas will be the same; but if the panels are to be silk, the walls are first prepared with frames of wood upon which is stretched muslin, which is put on to serve as a backing for the decorative fabric. After the silk or other material is hung, it is finished at the edge with a small wooden moulding or silk cord.

Decorations of this kind are, of course, very appropriate for drawing and reception rooms where the furniture is upholstered in costly and rich materials. Many theatre lobbies are decorated with panels upon which are painted allegorical figures upon canvas with panel mouldings in relief. Hotel dining saloons are also treated now very largely in a similar manner, with canvas panels decorated with subjects illustrating hunting and fishing scenes and similar subjects. Panels of this description are also covered with fine bevelled plate glass, which adds much to the richness of the decorations as well as preserving the paintings. Another form of relief decoration in conjunction with fabrics is one which is appropriately used on hall walls. These are first covered with overlaps, which after being covered with one coating of paint, has raised ornaments placed upon it at regular intervals, the whole afterwards being painted over. W. N. F.









THE NEW GOVERNMENT OFFICES, WESTMINSTER







LIBRARY  
OF THE  
UNIVERSITY OF ILLINOIS





THE END OF PARLIAMENT STREET BEFORE THE RECENT IMPROVEMENTS.

(The middle block of houses is the "King-street Block," now demolished, and its site is to be occupied by the New Government Offices.)

## THE NEW GOVERNMENT OFFICES.

THE general designs for the two new blocks of Government offices have been exhibited to the members of the House of Commons during the last week, and by the courtesy of the officials we have had an opportunity of examining them, and publishing a selection of the designs exhibited. The perspective view and ground plan of the Westminster block are given this week, the designs for the new War Office being held over till our next issue.

Profiting by the dismal experience gained in some former large competitions, the Cabinet Committee, which is understood to consist of Mr. Balfour, Sir Michael Hicks-Beach, Lord Lansdown, and Mr. Akers Douglas, the First Commissioner of Works, decided to avoid a public competition, and Mr. J. M. Brydon was asked to prepare a design for the Westminster site, Mr. W. Young for that at Whitehall, with the assistance, in each case, of Sir John Taylor, of the Office of Works.

The exhibition in the Tea Room of the House of Commons consists of perspective views of the two designs, together with sketch elevations of both schemes, and block plans explaining the extent of the surrounding properties which it is proposed to acquire in the course. It should, however, be understood that the designs are not to be considered as the final or complete development of the scheme, but rather as sketches to show the architects' suggestions for dealing with the two sites, in order to enable the public to form some idea of what is being done.

It is very gratifying to find the present Government dealing with the scheme in so unprejudiced a manner, and what strikes us about the plans, more especially those for the Westminster site, is the large consideration given to the adjoining buildings and to the whole character of Whitehall. The buildings have not been designed as individual blocks but rather as a complete street, and a serious attempt has been made to treat the sites with the dignity they deserve. When we see what can be done by treating these matters broadly, it is the more to be regretted that such schemes, as for example those devised by Inigo Jones in the seventeenth century, and in later times by Barry, should have been unhappily set to us. However, better late than never, it would appear that now we are about to see things managed in a different spirit at West-

minster, and a scheme commenced, of which future generations may well be proud.

In dealing with the two lines of frontage, and the general grouping of the buildings, that for the War Office block is perhaps the better, for in this case, with the exception of the Banqueting House, existing buildings have not to be taken into account. On the other hand every building on the west side of Whitehall has an independent frontage line, and accordingly, the new block will line with nothing, not even with the opposite side of Parliament Street; the front will be set back a little to give prominence to the angle of Scott's building, and at the same time to correspond with the Treasury buildings. Mr. Brydon has by means of architectural screws connected the three buildings; between the new buildings and the present Home Office, a bridge is carried on three massive arches crossing the end of Charles Street; the end of Downing Street is similarly inclosed, but in this case, the street being of less width, the treatment differs in design. The arcade connecting the new buildings is in a sense necessary, as it is intended the Local Government Offices should be situated on both sides of Charles Street. The screws are of very great assistance to the architectural group, as they serve to mask the irregularity in the line of frontage and the awkward angle formed by Scott's building and Whitehall. Mr. Young in his scheme has also provided connecting screws between the existing Banqueting House, the new War Office, and a proposed additional block of buildings designed as a replica of the Banqueting House. The setting back of the new building next the Home Office has the advantage of making a wider opening at the end of Parliament Street, and thus opening up the view of the Abbey. In the original block plan the angle of Great George Street and Parliament Street was rounded, but we are glad to note that Mr. Brydon's scheme makes this corner a right angle.

The War Office scheme in its entirety, perhaps, presents a better line of frontage to Whitehall, because in this case the sky-lines of the old Banqueting Hall, the new War Office, and the future Parliamentary Library are continuous. The awkward shape of the site presents a great contrast to the Westminster block. We hope it is not yet too late to have a re-arrangement of streets, whereby a site of more practicable shape might be obtained. Classic architecture has not much chance when bestowed upon a shapeless building which merely lines a road. Mr. Young, in his design, has treated the corners of

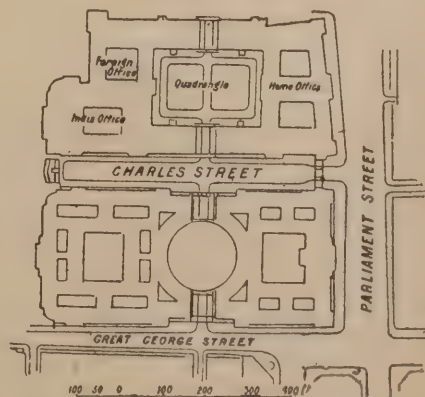
the building in a manner which, to a large extent, minimises the effect of the awkward angles, caused by the junction of the two side streets and Whitehall. He employs circular pavilions, which, whilst they serve to accentuate the two ends, also hide, to a great extent, the inequality of the angles. The front to Whitehall is boldly treated. The two lower stories are a mass of rusticated walling, and above this is introduced an Ionic order; the columns standing free give a bold effect. We feel that the central doorway would have been better if made a more prominent feature.

The general grouping of Mr. Young's building, flanked on the one side by Inigo Jones's masterpiece, and on the other side by a replica to be used as a proposed Parliamentary Library, is exceedingly imposing, the effect when the three buildings are linked together with screens would be in harmony with Mr. Brydon's scheme, and at the same time bring the whole of the War Office front into one harmonious design; the addition to the Banqueting House, made in the last century, had a very detrimental effect, and we are very glad to see the proposal made to rebuild this addition more in harmony with the lines of the older building.

The site of the War Office was doubtless an exceedingly awkward one to deal with, and Mr. Young's treatment with circular pavilions seems to be the most satisfactory way out of the difficulty that could have been devised; we only hope that the Government will erect at no very distant date a replica of the Banqueting House as suggested by this scheme, as it seems to us that no treatment of this long front can be complete without such an arrangement.

In the "Daily Chronicle," of March 20th, appeared a suggestion by the Earl of Wemyss, who proposed to adapt the centre piece of Inigo Jones's design for Whitehall Palace. At one end would be the Banqueting Hall already existing, then an archway with the centre building arising therefrom, and at the other end a replica of the banqueting hall. Apart from anything else, this, it is contended, would provide a War Office which would fittingly balance the Horse Guards, the central arches of the two buildings being on the same axial line. How his lordship proposes to deal harmoniously with the remainder of the site, we fail to see; the chief merit about the scheme is that it is central with the Horse Guards' building, which, in Mr. Young's design, does not appear to have been considered essential.

Mr. Brydon's elevation has necessarily to be in keeping with two buildings, both lacking the beautiful proportions of the Banqueting House. It is a dignified composition, consisting of two stories of plain rusticated work supporting a Corinthian order with two stories of windows between the columns; the centre piece has a slight projection from the main block; the columns are coupled and carry a pediment with sculpture, above which rises a high attic; the two pavilions at the corners of the building repeat the outline of the towers to be added to Scott's building. The flank elevation to Parliament Square is somewhat differently treated, and is one of the most successful parts of the design.



SITE OF THE NEW GOVERNMENT OFFICES.



The general arrangements of this, which is known as the Westminster block, are shown in the plan reproduced; the circular courts were probably suggested by Inigo Jones's design for Whitehall Palace. Only a part of this scheme can at present be built, but when the leases of the Great George Street property fall in, an opportunity will be presented to complete a block of buildings having three fine fronts—to Whitehall, St. James's Park, and Great George Street—which will be second to none in London; provision is made for a carriage drive through the great circular court, and in continuation of that already existing through the adjoining block of offices. The central court is 160ft. in diameter, and the side courts 100ft. square, the smaller courts being only for lighting corridors and lavatories. A great improvement in Government offices is effected by making the average height of the

## NOVELTY IN ART.

By R. S. BALFOUR.

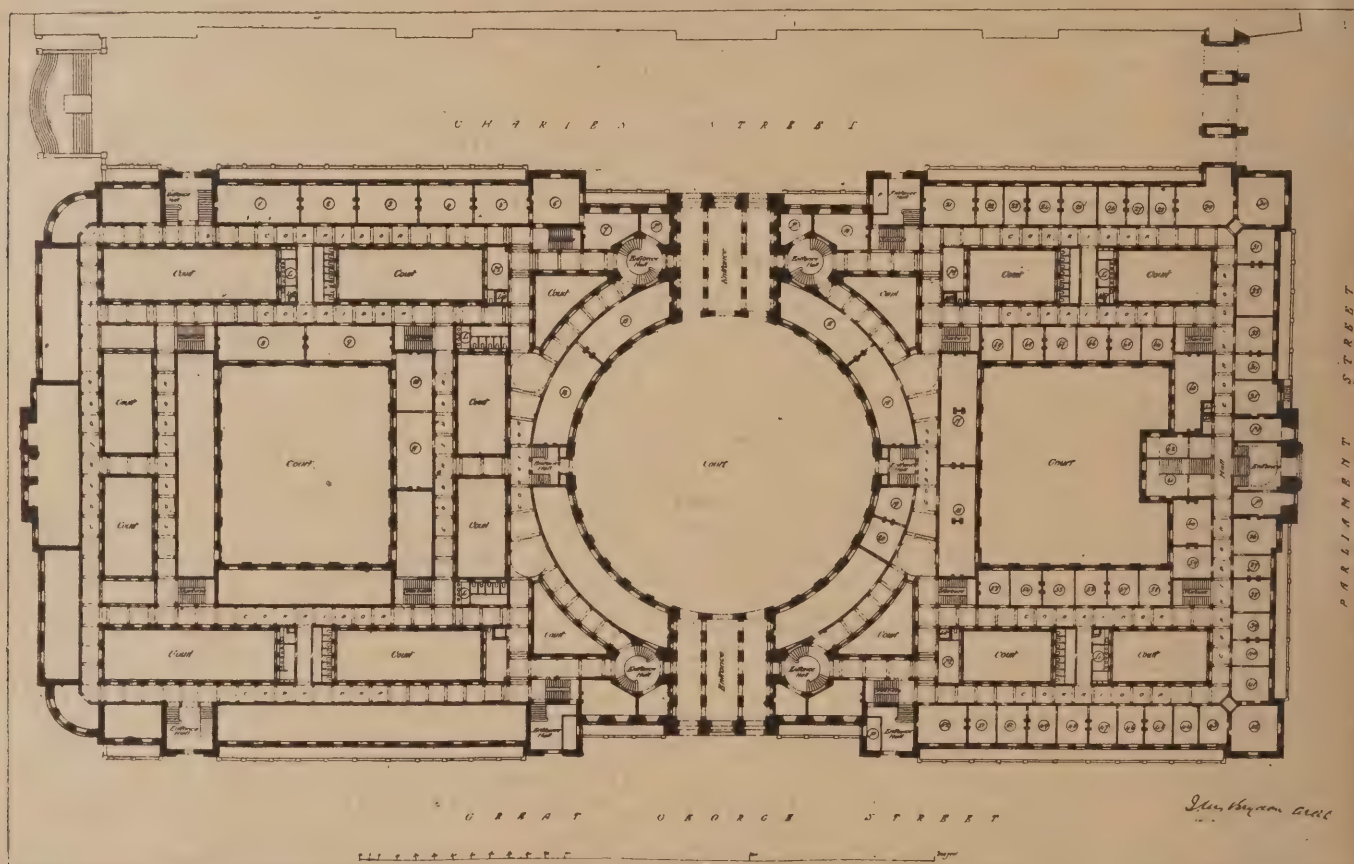
**NOVELTY IN ART**—How wide or how circumscribed are the limits within which we may apply the term. May we not argue on the one hand that since Art cannot live without progressive or retrograde movement, it must ever be novel, ever quickened by the influences of the day, and ever swaying to the rhythm of the pendulum of a social epoch—otherwise Art ceases to exist.

Or, on the other hand, it has been urged with no little acumen that never again can we hope for complete and absolute novelty in Art. Everything, it is affirmed, has been done before, and although fresh ideas and methods may be continually making their

periods when mankind lapses into complete indifference as to his own welfare, those total eclipses of intellectual capability which we call Dark Ages.

But given the new idea, our efforts do not relax, we see by experience that it may be improved to render it more convenient still, and we scheme to conceal its ruggedness in a becoming garb, which will not hide, but rather express to us its purpose. Here we have a concentration of the ethics of applied art, and in endeavouring to fulfil these ambitions it is, perhaps, natural that timid humanity should revert to forms already approved, either on account of their æsthetic qualities, or because of their adaptability to the media in which the experiments are being conducted.

How interesting it is to mark in chronological sequence the development of any new idea. The crude and ugly shape at its incep-



THE NEW PUBLIC OFFICES, WESTMINSTER: GROUND PLAN. J. M. BRYDON, F.R.I.B.A., ARCHITECT.

rooms 13ft., the too lofty appearance of so many public offices being thus avoided.

Considering the two schemes as a whole the result promises to be most satisfactory, more especially so in regard to the Westminster block, and in view of the debate which will most probably occur, the Government may perhaps see their way to modify the site of the War Office, since nothing can quite get over the unfavourable conditions at present imposed by the angular nature of the site. There is, on the part of the Government, an evident desire to carry out, or at any rate commence, a complete architectural scheme, and it would be much to be regretted should such a scheme be in any way hampered. They have been very ably seconded by the architects to whom they have entrusted the work.

**A memorial to Sir Henry Doulton** was unveiled last week in the chapel of St. Thomas's Hospital, by the Bishop of Rochester. It consists of three panels in terra-cotta from designs by Mr. G. Tinworth, representing the Incrudulity of St. Thomas, the Appearance of our Lord to St. Mary Magdalene in the Garden of the Sepulchre, and in the centre the Ascension. The panels are each 8ft. in height, and form a reredos.

appearance, subtly disguised with new names or with insignificant modifications, yet they are but the old notions which have been somnolent for years or centuries, taken down, as it were, from the shelf of oblivion, dragged forth, dusted and furbished up, and presented by their pseudo-inventors for the admiration of a new generation. This indeed, they say, is to subvert the true meaning of Novelty in Art, and only permits of the term being used in a very modified and restricted sense.

But surely this latter plea cannot be accepted when applied indiscriminately to all branches of Art. It is not by any means sufficiently inclusive, it fails to take into consideration that continual evolution of our every-day life, all the new requirements of education, all the tentative efforts at an enhanced civilisation, with the ultimate intention of improving our condition. These fresh demands, whatever they may be, constitute in themselves motives upon which one portion of a community lavishes an unrelenting care and effort to gratify, and thus are produced, or call it re-invented if you will, things differing in a greater or lesser degree from those to which we have become accustomed; each of these things in its turn tending towards fresh modifications or new demands, processes which will always alternate with those strange

tion, the gradual transformation from borrowed forms to a garb expressing its own sentient being, and the corresponding gradual kindling in our minds of an appreciation for newly revealed beauties, qualities which are no less real because they may only express to us utility of purpose.

Take any invention. Take the modern battleship. True, we lose in it the charming lines of the hull and the swelling curves of the canvas which marked the days of the wooden walls of England, but are we not gradually gaining in each fresh addition to our modern navy, compensating beauties—beauties expressive of might and power and strength, as well as of proportion and form. Or take the railway train; compare the modern car with the old stage coach form transplanted from road to rail, which marked the early days of steam locomotion. Surely there can be no hesitation as to which of these is the more suitable and expressive of its purpose. Now we are at the initial stage in designing the form of the motor car. We borrow the shapes of our existing vehicles, and how unsatisfactory is the result. Its requirements dictate something different, and the new form is bound to develop.

Novelty then in Art may be defined either as the suitable contrivance of fresh forms to





SEBORGA, FROM THE EAST. DRAWN BY WILLIAM SCOTT.

(From "Rock Villages of the Riviera.")

suit new circumstances, materials, and requirements, or the adaptation of new forms to such purposes, or else the adaptation of new forms to existing purposes for their improvement.

It is obviously futile within the prescribed limits of this article to attempt even a cursory glance of examination into the varying causes which govern the introduction of novelties among the innumerable branches into which art has divided itself; this specialisation results from emulation and the demand for supreme excellence, which causes art to be divided against itself if we accept the dictum that "there is but one Art." Before, however, we attempt to analyse the application of the title to Architecture, it is needful to demonstrate some generally applicable theories; referring with equal consistency to whatever branch of Art may be under consideration.

The most malignant influences against which novelty in Art has to contend are perhaps fashion and precedent. The effects of the former are infinitely more deleterious than those of the latter, which only tend to retard and fetter our brains by relieving us from the necessity of much thought and responsibility. Think, however, of the vandalism which is, and always will be, associated with the name of fashion, consider the enormities which are continually being practised for the sake of change. Had it been that fashion demanded real novelty as a postulate, how different its influence might have been! What progress the world would have made had we always clung to the one idea till a nobler one had legitimately usurped its place! But fashion is entirely dissociated with progress, it has no distinct advancing movement, it seems to revolve almost persistently upon its own axis—an orbit of wearisome repetitions and commonplaces for the most part. Grant fashion any object upon which it may fasten its greedy tentacles; it will draw all the life from it, and no matter how splendid and beautiful that object may be, it will be stultified by cheap imitation (how insincere in this instance is flattery), till it becomes nauseous to us, and with one accord we thrust it from us. Should something better be ready to step into the vacancy so formed, the loss would only be one of regrets; but often we are compelled by fashion's inexorable decree to accept something less worthy, and then how retrograde is such a change! It is not alone the mere backsliding which has to be taken into consideration, it is the slow, fresh re-advance which renewed gradual development brings about; that laborious creeping up the ladder of social progress to the point from which we fell. Frequently it appears as if we could not re-attain our former high-water mark; we seem to lack power and vitality to raise ourselves, and we

waste all our strength and mental energies in endeavouring to reach again as our goal that which, had it not been for our collective folly, we might have made our starting point for fresh progress.

I have said that precedent is an agency for economising thought. But if rightly used precedent should be infinitely more than this. It should also be a firm foundation from whence we might take an upward step toward our ideals. Precedents are the actual records of the success or failure of the experiments of explorers beyond the slowly extending radius of our store of knowledge. Each experiment is a base from which to start a wider research, or else it is a point of warning. It is a definite statement which indicates to all most plainly—the good and the bad—what is to be assimilated, what avoided, and therefore it should act as the greatest stimulant we have for the strengthening of our appetite for fresh commodities. But very frequently, precedent is not used in this manner. Its true significance succeeds in obtaining recognition with only a limited number of people. With the great majority, precedent is treated as a kind of stock-in-trade of a juggler with which to captivate the semi-ignorant, or as a ready-made mechanical apparatus, upon which to ring the changes with a half-awakened public. The great majority, too, use precedent as a means with which to eke out their meagre intellects, for it is a cheap way of avoiding difficulties and an easy method of acquiring a harmless reputation.

(To be continued.)

**The Retiring L.C.C. Architect.**—At last week's meeting of the London County Council a resolution was unanimously passed recording the appreciation of the Council of the services rendered by Mr. T. Blashill during the twelve years he has held the office of superintending architect of metropolitan buildings and superintending architect to the Council.

**Glass-paving.**—Since last November the Rue de la République, Lyons, has been paved with devitrified glass. This new product is obtained from broken glass heated to a temperature of 1250deg. and compressed in matrices by hydraulic force. The glass pavement is laid in the form of blocks, 8in. square, each block containing sixteen parts in the form of chequers. These blocks are so closely fitted together that water cannot pass between them. As a pavement it is said to have greater resistance than stone, it is a poor conductor of cold, and ice will not form on it readily, dirt does not accumulate upon it so easily as upon stone, and it will not retain microbes.

## ROCK VILLAGES OF THE RIVIERA.\*

BY WILLIAM SCOTT.

THIS book is of attractive appearance, with gilt top, printed on hand-made paper, and crowded with illustrations. It is true that many of these illustrations are not of the first order, and that the author seems sometimes to have difficulty in making his pen express textures satisfactorily. But when the reduction of the drawings is considerable, as in the little vignettes on pp. 100, 103, 119, 169, and 176—which are here reproduced—the effect is generally brilliant and telling. And even among the full-page plates one may note several of equal excellence, such as the drawings of Seborga facing pages 116 and 158, the first of which is a very well chosen subject; and that facing page 166, a view in Apricale, perhaps the most brilliant and picturesque drawing in the book. The author appears to have spent some considerable time at Bordighera, and to have pleasantly occupied his leisure in making excursions to the hill villages on the sides of the valleys near, making investigations into the Communal documents, the

\* "Rock Villages of the Riviera." By William Scott. London: Adam and Charles Black, 1898.



STREET IN PERINALDO. DRAWN BY WILLIAM SCOTT.



results of which are often very interesting, though his taste has not been sufficiently exacting in the choice of subjects for his pen. There are very few buildings of any architectural pretension in the district, though plenty of picturesque bits of light and shade to attract the artist, the buildings being mainly examples of traditional building without design, which should be instructive to a certain school of present-day architects. At the end of the book are two drawings which have a sad interest, those of the ruined church of Bajardo, which was thrown down by the earthquake of February 23rd, 1887, while crowded with worshippers. From among the ruins 210 dead bodies were taken, besides numbers of injured, and it is scarcely wonderful that after such a fearful catastrophe the villagers lacked spirit or funds to repair the church. It is the most ancient building drawn by the author, dating as it does from the twelfth century.

A great part of the book is taken up with details of prices of articles and payments for men's time, extracted from the communal account books which reach back to the end of the sixteenth century. From these a few interesting details may be quoted. At San Biaggio a mason's wage at that time was but 1 lira a day, while thirteen days of a woman's work cost still less proportionately, 2 lire and 12 soldi. At the same place sixty years later the secretary to the "University," as the Commune was called, was paid 4 lire for his year's work, a few years earlier another was paid 14 lire for three years help in writing, and the "uscieri" or bailiff's salary was but 12 lire a year! What the people lived on it is difficult to understand, for even allowing for the difference between the purchasing power of money then and now they must have had scarcely enough to keep body and soul together.

One gathers from the third chapter that the lot of villages under the authority of another village was not ideal, for human nature is much the same everywhere. Ventimiglia

(which was the principal place of the district) oppressed those unfortunate communes which were under its control bitterly, almost to the point of exciting revolt. The same chapter gives many other curious details concerning the franchise and the mode of government; and, further on, in the account of Vallebona, one reads of a women's revolt, in the course of which the Municipio was fired. This occurred as lately as 1844, so that the Government remained unsatisfactory for a long time. A curious custom is observed in one of the villages, against which it should be the men's turn to revolt. On Sunday mornings the women go out walking together and to mass, while the men stay at home to look after the babies! But old customs die hard in such a land as this, where there are still to be found people of the same family in possession of land which their forefathers held as long ago as 1471—as is the case at Bordighera, while at Seborga the name of a farm on the south side of the village is still the same as it was in the thirteenth century. Those who have sojourned at San Remo or Bordighera in these peaceful times can scarcely realise that but little more than 100 years ago the Barbary pirates were a real danger to the inhabitants of the littoral. The forts, which were armed to protect them from such incursions, occasionally fired at the wrong people under the influence of panic, as in 1811, when a small English ship suffered. The jubilation of the inhabitants was short lived, for five days later two English men-of-war appeared to exact compensation—according to one account looting the houses surrounding the piazza. Here one may buy in the market those small black figs which are a speciality of the district from twenty to thirty for a penny in the right season. The Riviera is changing rapidly, and much of interest is being swept away. The appearance, therefore, of such books as this, which seek to record the aspects and surroundings of a life which is so quickly disappearing, should be widely welcomed.

S. S. G.



STREET IN VALLEBONA. DRAWN BY WILLIAM SCOTT.

## THE PACCA EDICT.

HOW THE ROMAN STATE  
HARASSES ARTISTS AND RE-  
STRICTS ARTISTIC ENTERPRISE.

BY ALFREDO MELANI.

**A**LTHOUGH the Italian nation has since the time of its consolidation, solved many legislative problems, it has not yet succeeded in solving that one regarding the commerce in works of Art.

Each region in Italy has its own laws; for instance, acts are permitted in Piedmont which are forbidden in Sicily, that which is done in Venice is not allowed in Florence and Rome, and so forth.

The region in which this legislative abnormality is most in prominence is Laziale, that is to say Rome and the Pontifical State, where exists the Pacca Edict, or a law demanding 20 per cent. duty on all objects of Art which leave the State for places abroad, among which are included, not only Paris, London, and Berlin, but curiously enough, Florence, Venice, and Milan. It is well-known that when Rome was united to Italy in 1870, the laws anterior to that date were substantially modified, with the exception however of that regarding the export of objects of Art, this was one of the laws of the old Roman State; and at Rome, the artists, the collectors, and the merchants of artistic goods are Italians, and they are all subject to this papal law.

It would be less unreasonable if the law were not unjust. At any rate, the case is typical, and as we are, above all, convinced of many irregularities, we will give a few extracts from the Edict, and from concise and irrefutable information. Having said, then, that the Pacca Edict, though a law, is a formidable tyranny the like of which does not exist in any other country, let us consider the text of Art. XII., which is the most monstrous. It reads thus:

"Any article or object of fine Art which it is desired to export from the Provinces of the State, and from this city of Rome to the Provinces, or other countries, shall be submitted to the most rigorous inspection, reserving to ourselves the right to permit its relative extradition, and consequently annulling by the express command of his Holiness every order or custom to the contrary."



STREET IN APRICALE. DRAWN BY WILLIAM SCOTT.

(From "Rock Villages of the Riviera.")



Evidently then, to possess an object of Art in Rome is undoubtedly a misfortune, and especially so if the possessor thereof desires to move from one place to another. Hence his ownership of an object of Art in the Pontifical State may at any time be challenged, or, which is little better, the article itself is reduced to almost one-fourth of its real value. For, in substance, what is signified in the legitimate possession of an object? most assuredly the possibility of selling it or of conveying it from one place to another without let or hindrance. Hence, from the Pacca Edict results this strange anomaly: that a work of Art is not the property of who so possesses it in his own house, because he cannot sell it. Nevertheless, it is the property of none other, for no one may move it from the place it occupies. Let us take an example. Suppose a family which by division, abundance of children, or breaking up even, has fallen into a less flourishing condition, and happens to have in its possession a picture or a statue of high artistic value. They find that by selling the picture or statue, as the case may be, they can greatly improve their financial conditions.

But here the Government steps in as it often does and demands the indefinite postponement of the sale; the would-be buyer

caused by the Pacca laws to the artists of Rome and of the old Pontifical State. Truly Cardinal Pacca sought to parry the monstrous contradictions with logic, and with common right, because in his Edict and particularly in Art. IX he declares that the measures prohibiting the export of objects of Art, were imposed with the express object of favouring the collections of the Pontifical State. The good prelate therefore runs away with the supposition—decidedly a bold one for his time—that the Government could prevent anyone from sending his goods for sale abroad in order to reserve for itself the right of buying them. It is, however, necessary to remember that when the Edict became law (it bears the date April 7th, 1720) his idea was totally different from that which obtains to-day with regard to the rights of the citizens. Hence this unjust application of the Pacca Edict is more injurious to its supporters than they themselves imagine. At the time of its introduction even, this decree was, to say the least, unreasonable, but to-day it is directly imprudent and tyrannical. I speak thus because at the time of its introduction there existed in Rome, and its Pontifical provinces, a state of great prosperity, not only constitutionally but also individually; hence both the government and the people were well able to afford the precious antiquities which were then for sale. But to-day this is not so. And so corrupt was this Edict considered by the Parliament of 1871 that they separated it from the national laws and limited its application solely to the province in which it is now in force, namely, the Pontifical State. Therefore, with the acceptance by our legislators of this Edict, there is created a special condition which concerns all those who possess objects of Art, and also those who trade in them. This state of affairs is decidedly offensive to the political and national sentiment, which issued forth triumphant from the local revolutions which formed the kingdom of Italy. This fact has also been the cause of repeated agitations in which the public institutions have taken part. The Chamber of Commerce of Rome made representations in 1891 to the government with regard to the abolition of this famous Edict.

The Papal Government checked the export of objects of Art from Rome and from its provinces, and often acquired for themselves those articles which would otherwise have been sent out of the country. The Italian government also checked the export of those objects of Art, but not with idea of acquiring them for itself. Of course, it is quite admissible that the State should have the preference in the sale of a work of Art, but on the other hand the State should not make capital in the exercise of that right; it is not just that it should form such vexatious laws against the wish and contrary to the interests of the people. And again, how odious is the manner in which this law is enforced; so odious is it that one is almost inclined to believe that in point of freedom our own Government is behind the Pontifical Government which would always, in cases of probable sales, grant a suspension of the Edict, whereas our own Government would not admit of any transaction. Here is an instance: a short time ago a gentleman was about to sell a piece of sculpture to some one in either London or Paris—I do not recollect which—but he found that it would be necessary to send it to the buyers, and was of course quite prepared to pay the duty of 20 per cent. to export the sculpture. But the Italian Government, basing themselves on the Pacca Edict, would not hear of it. The owner, however, declared himself quite ready to pay the duty, but the officials were so jealous of the aforesaid interests of the State, that the sculpture remained in Rome.

It is incredible that such a monstrous measure has not or has not had enemies among the members of the Government; there have been proposals made for the conservation of the monuments with the object of annulling the decrees and Edicts which were instituted in times when there prevailed exaggerated notions of the power of the populace. But up to the present these proposals have either been wrecked on the occasion



PORTA DEL CAPO, BORDIGHERA. DRAWN BY WILLIAM SCOTT.

of their discussion by the two chambers, or else they have not been discussed at all. And, in fact, with regard to her legislation in matters of Art, Italy to-day finds herself in a position not merely illogical but ridiculous.

That which the legislators of the two chambers have, up to the present, been unable to give to the country, Italy has reaped for herself by the good sense of her tribunals. Here is only recently an important decision touching the application of the Pacca Edict. It arose in the Court of Appeal of Rome, in which it was established that the Pacca Edict should be applied to the rare and precious only, and not to every object of Art.

Conclusion: it is right that things artistic should of necessity be confined to their own country, and if the State cannot buy them, it should not hinder others from doing so.

At the same time we wish to exercise a little reserve—as the Court of Appeal of Rome has done—when considering works either artistic or historical which are of recognised and undoubted value—a painting by Raphael, or a piece of sculpture by Michel Angelo, or a bronze by Cellini; but as regards the rest—absolute liberty.

Exaggerative, restrictive, fiscal laws made harsh by tyrannical application will serve no other purpose to-day than the encouragement of contrabandism and immorality.



STREET IN SOLDANO. DRAWN BY WILLIAM SCOTT.



STREET IN BORDIGHERA (VIA DEI BASTIONI). DRAWN BY WILLIAM SCOTT.

goes away, and thus the family is left in its embarrassment.

Again, let us suppose that I am by profession an antiquary, and am carrying on business in Rome, and perceiving that Florence is as much a part of Italy as Rome, I find it advantageous to abandon the "Caput-Mundi," and to move my business to the country of Dante and Michel Angelo. I decide to go, and, being a good and honest citizen, I see no reason why I should not be able to carry into effect my decision. When, behold! a good and honest state official, a connoisseur in the matter of Fine Arts, informs me that I shall have to pay 20 per cent. duty on every article of my stock, as valued by himself. In case I had not the funds wherewith to pay the sum demanded, the Pacca Edict is enforced, and I am obliged to remain in Rome, which place I was leaving, perhaps, on the score of ill-health, probably on account of the malarial fevers which afflict thousands of this capital of Italy. And this is liberty! Or is it not rather an offence to every elementary civic right?

Again, the Pacca Edict does not affect only the ancient works of Art. This Imperial decree affects the works of modern Art ten years after the death of the authors thereof. Who knows the affairs of our Italian artists? and who knows how many of their works they sell in other countries?

It is not necessary to say very much in order to convince anyone of the damage which is



## A CHAT ON DECORATIVE AND ORNAMENTAL IRONWORK.

By W. N. BROWN.

IN the course of the following lines I purpose making a few remarks on architectural, decorative, and ornamental ironwork which may be of use and interest to my readers, especially the younger ones among them. At the outset I may mention that ornamental ironwork, as employed in buildings, is of greater antiquity than the same metal employed structurally, the former being of wrought iron, forged by the blacksmith, and consisting of necessary fittings to an edifice to which a certain ornamental or decorative character had been imparted.

Amongst these members may be enumerated hinges, locks, bolts, handles, knockers, grilles, screens, and other forms of internal railings; palisades, and other external railings, vanes, terminals, and finials, gates, and lattices, and torch-holders, extinguishers, and ironwork for coffers and chests. The clever smith of the Middle Ages found great scope for his ingenuity and taste in the fabrication of hinges for the external doors of cathedral churches and baronial castles; the hinges to the doors of modern dwellings are made as small and inconspicuous as possible, but the ancient wrought iron hinges were expanded into a wealth of scroll work, which extended over the greater part of the door to which they were attached. Such hinges, of which a few are still in existence, are verily marvels of true ironwork. It must also be borne in mind that the amount of manipulative skill required to produce really artistic ornamental forgings is very great. Cast iron decorative work, however elaborate, may be produced with facility. A carefully constructed wooden model or "pattern" is put into the iron founder's hand, and it is an easy task to "mould" this in his wet sand, and to produce a perfect copy in cast iron. But the smith perhaps simply works from a sketch, a chalk drawing on the back of the smithy door, and all the forming of the iron into curves, or other decorative shapes, must be done while the metal is red hot, and all joinings required effected by welding the parts together while they are at white heat. Thus it is obvious that when the smith becomes an art worker he labours at a greater disadvantage than does any other artisan. He has no opportunity to give prolonged consideration to his work while it is in progress, but must veritably "strike while the iron is hot." Another disadvantage under which he labours is that, unlike other workers, he is not expected to avail himself of any means, other than welding, of forming joints. The carpenter, joiner, and cabinet-maker have multifarious means of joining their material—wood—from which to select, uniting by mortice, by tenon joints, by dovetails, by dowels, with the aid of pins, nails, screws, spikes and glue. But the smith has only his own expedients of uniting the two pieces which he desires to join, by hammering them energetically while they remain in a state of white heat. Moreover, he is extremely restricted as to tools. The wood worker has the whole and varied contents of his tool chest to fall back upon. But a good smith is only expected to use such tools as he can use while the iron is hot, i.e., hammer, anvil, punch, and, perhaps, swages and chisel. But after his work is cold he must not touch it up with the file or other implement. It is *de rigueur* in good smiths' work that all the forming should be done at the anvil while the work is heated.

As an exemplification of the manner in which the smiths would go to work to produce a good piece of Ecclesiastical ironwork, let me take a fine example of Middle Age ironwork from the door of the church of Neury Saint Sepulchre in France, which is to be found engraved in the late M. Viollet-le-Duc's treatise. This is early twelfth century work, and the most superficial glance at it cannot fail to convince the observer that the smith who made it was an adept in

the use of the hammer, and especially in neat and masterly welding. When it only concerns uniting small branches to a central stem, the business presents no difficulty to a fairly expert smith. But to unite branches into a kind of central enlacement, or union, requires a very skilful hand. These "sham" hinges, for such they are, for the French church door present unquestionably very real difficulties. In order to get the welds made, the smith, unless extremely adroit, would risk burning his iron, for he is under the necessity of making several fresh heats at the same point. The smith would here commence by forging the centre piece with the four left runs. He would then hammer out the scrolled branches forming the bulbous extremities into an eye, through which the shank of a square headed nail can be driven to affix the ironwork to the door. Lastly, these arms or branlies will be scarfed or welded to the central parts, an operation which is not without difficulty in performing perfectly. Another French hinge, also adduced by M. le Duc, is from a door of the Church of St. Saturnin, at Moulis, in the Department of the Gironde. Here we have shown the bar of iron for the branch, which the smith has first slotted at the side to get the piece from which to make both the two large end volutes or scrolls, and also the small curves along the outer curve. This is, of course, a much simpler example than the preceding one, and, much easier to execute, as there is but little welding of joints, and these not difficult. Another example is the half of a piece of elaborate hammered ironwork from a door of the celebrated Cathedral of Notre Dame, at Paris, the whole of which is to be found figured in the work entitled "Statistique Monumentale de Paris." In this, the smith fixing up his design on the wall beside him, would commence operations by forging each of the branches separately. As a necessary preparatory step to this he would have to make "top and bottom tools," or "swages" for each of the leafy designs which terminate the branches, and which are all different. He would scoop the other end of each piece forged to a suitable taper for welding on to the central stem. The latter having been made of smaller size than the desired final dimensions and its terminal swaged out, several heats would necessarily have to be taken to get all the branches neatly and soundly welded on.

The preceding examples were French work; now I will cite a specimen of English work, which is a beautiful wrought iron hinge of the thirteenth century work from Leighton Buzzard, and as in the preceding lines I will endeavour to give some particulars as regards the method in which this piece of iron work is constructed. I will suppose that a small drawing of the proposed hinge is put into the hands of the smith by the designer. The first step made by the smith would be to enlarge the sketch to the full size of the hinge desired. This he would probably do in chalk on the wall or door of the smithy, so that he could verify the correctness of his work by applying the actual iron pieces to the drawing. Most likely he would next make "templates" (or accurate patterns) of all the flowers and terminal scrolls of the leaves out of sheet iron or zinc. He would then "scribe" or mark, around these templates on a piece of iron of the desired thickness until he had done a sufficient number, when he would cut them out with the cold chisel and hammer. In the meantime his assistant would have been forging a piece of stouter iron to the rude rough shape of the central stem and the rudiments of the projecting branches. The smith having cut out a sufficient number of pieces of iron to the shape of the templates would next proceed to boss them out of the hollow form. For this purpose he would use a pair of tools known as "top and bottom tools," which are really swages, one being convex or in relief, and the other concave or hollowed out. When the smith had made a pair of these tools he would put the shank of the bottom tool in the hole at the end of the anvil, so that the upper part of the tool rested on the anvil

itself. Next he would heat the leaf already cut to shape, place it in this concave bottom tool, and hold the top tool upon it by the withy, or reed handle. An assistant would then strike the end of the top tool strongly with a heavy sledge hammer. It would probably require two or three beats to knock and boss the leaf into its proper form. Having made a sufficiency of these leaves the operator would chase them up a bit, scarfe the ends ready for welding on, and put them aside. Next the smith would most likely go on with the scrolls. He would first take a bit of twine and bend it around one of the full-rigged scrolls in his sketch. This would give him the exact length required, to which he would cut a piece of iron of the proper width accordingly. He would then proceed to make some swells at the right distances, so as to leave plenty of metal from which he could forge the bays or semi-circular swells that are found at different intervals upon the scrolls. When he had finished this he would probably set about bending the scrolls to the required curves. He would not be able to do this in one heat, but would have to bend part of the scroll at a time. He would make his iron hot, and with the scroll wrench and fork form part of the scroll. The smith would then continue until he had, after repeated references to his sketch, obtained the correct scroll.

Having gone so far, he would have to make top and bottom tools the exact sweep of his scrolls, so as to bump out the iron into the proper section. He would then, with various heats, and the help of his assistant with the sledge, follow the scrolls around until he had everywhere given them the required section. He would also have to make special top and bottom tools for the scrolls, for which, as I have previously said, he would have taken the precaution to leave a sufficiency of metal. He would then, in the same manner, complete the rest of the scrolls, and, after scarfing the ends to prepare them for welding; would set them on one side with the leaves and flowers, while he got on with the stem or main centre part. This, already roughed out by the assistant, would be of thicker and heavier metal than the scrolls. A pair of larger top and bottom tools would have to be made to aid in bringing this to the proper section. Having now, I will suppose, completed all the parts of the top of the hinge, the smith would probably commence with the small work, and "shoot" or weld all the leaves and flowers on in their proper places. When he had done this, he would join the smaller scrolls to each other, and then finally shoot them altogether on to the main stem. And after, with his top and bottom tools, having brought all the edges of his junctions into proper form and shape, and arranged the whole concern in conformity with his drawing, he would set about putting the finishing stroke to the job by making the clips or collars. These collars very often serve the purpose of hiding the joints and junctures of the scrolls, but in the example which I am considering, they certainly would not be employed for this purpose, and are evidently only applied for the sake of appearance. After these collars had been forged into their proper shape to overlay the scrolls and stems, they would be rivetted either with rivets from behind or from the front, and have their heads burred over, and the ragged ends effaced with file and chisel. The cable-like design on the collars on the main stem would probably be chased with a hammer and chisel when the work was cold.

**A New Wing** has been added to the Rawdon Friends' School. It includes a workshop, chemical laboratory, and lecture room.

**A memorial window** to the late Ven. Melville H. Scott, M.A., was dedicated in Ockbrook Church, last week. The window has cost about £80, and the subject represented is "The Good Shepherd."

**Reconstruction of Dunscore Free Church.**—The old Disruption Free Church of Dunscore has been reopened after architectural alterations and reconstruction. The total cost of the reconstruction is about £900.



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## Correspondence.

### SANITARY SAFETY.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—Numberless and varied are the efforts made to obtain this nowadays. Houses are surveyed, inspected, and tested over and over again, until the owners must really begin to look upon this supervision as a weariness to the flesh. It would be amusing, were it not too serious a matter, to consider how much of this testing is more misleading than really useful, even when carefully done by trained and qualified men. The so-called testing performed by inexperienced and interested people is, of course, unworthy of serious consideration.

It is curious how difficult it seems for some people to grasp the fact that it is foul air we are fighting. Nothing is more common than to see a beautifully finished plan with all the sewage drains coloured red and all the R.W. drains in direct communication with them coloured blue, the designer failing to realise that it is not so much what passes down as what comes up a drain (in the shape of foul air) that is the insidious foe. Often I have found the actual drains quite sound, while no attempt had been made at all to render the access-chambers—an integral part of the drainage—air or even water-tight.

As the Indians say, "Water never sleeps." There is something honest and searching about water, and the hydraulic test is positive and excellent so far as it goes. But it does not test manhole covers when fixed in place, nor in any occupied house does it test any higher than the lowest connection to a vertical soil pipe.

Then again smoke, and all smell-tests, simply give negative results, and the engineer reporting after their use, generally employs some such words as "No leakage was detected," which may or may not be satisfactory! The only positive test which enables us to say at once, "The sanitary system of this occupied house is air-tight from disconnecting-chamber to the tops of the ventilating-pipes, including every joint and connection," is the pneumatic test. It shows instantly air-leakages which water only shows very slowly, if at all, air passing freely and at once through tiny interstices, practically impervious to the passage of water.

I have quite come to the conclusion, after very many years practical testing, that a sanitary survey without this test is unworthy of the name, and, in short, not worth paying much for!

CHAS. E. GRITTON, A.M.Inst.C.E.

### MOISTURE DURING FROST.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—The "Writer of the Answer" on the above subject, in your issue of March 1st, has now, in yours of March 22nd, sought to justify his answer by doubting the equilibrating property of heat, and in doing so, asks the meaning of certain phenomena in three illustrations, which he gives; but not one of which is, unfortunately for him, applicable to the case it is intended to serve. If this gentleman cannot agree with me, why does he weaken his case by stating that there is "much difference of opinion," and then (in the seventh line), by giving his case away altogether. Where is this difference of opinion? Surely not among experts on so simple a matter. Then after admitting that different materials will eventually attain the same temperature under similar heat influences, why write such a long letter to deny it? But "Writer" may say that he has qualified his admission by the word "eventually"; that is to say, that during the mere process of acquiring or losing temperature, there will be found a difference of temperature in substances of different conducting power. What else can be made of the illustration which he gives of the pieces of wood and iron exposed to zero, &c., for fifteen minutes? The youngest of your readers must see that he is catching at a straw. What happens? A piece of iron, at any ordinary temperature, placed in a tem-

perature of zero, will quickly acquire the temperature of its surroundings, and a piece of wood similarly situated will follow a little less rapidly, but it will "get there" all the same. During the few minutes that this process takes there will of course be a difference of temperature, and it is upon this that he will "guarantee that it won't need a thermometer to differentiate between the temperature of either."

I would remind "Writer" that in the last sentence of my criticism I distinctly pointed out that there were circumstances under which the better conductor would be colder under cooling influences, simply because it was a better conductor. One of these "circumstances" would be where, for example, an iron girder, partly inside a heated room and partly exposed to a cold external atmosphere, would continue to conduct heat rapidly from the interior to the exterior as long as the supply of heat lasted and the uneven balance existed; and the temperature of this girder would be something less than that of the room, and something less than that of a wood beam similarly placed. Here, perhaps, we agree. But it should be remembered that this, like our friend's illustration, is only during the process of establishing an equilibrium (although in this case, from its situation, it takes a long time) and the rule holds good, that when the balance is established, the temperature remains uniform for all materials until again disturbed. But paper and paint are entirely inside the house and will not differ.

Regarding the remaining two illustrations which "The Writer" gave. The first was that "a thermometer placed upon the grass during a cold night will register differently from a similar instrument suspended a foot from the ground," which is intended to show that two different temperatures can exist under the same conditions in dissimilar substances—presumably the grass and the air—in consequence of the greater conductivity of one of them. I need hardly remind your readers that the difference of temperature in the case referred to is the product of radiation in a diathermal atmosphere, whence comes dew and hoar-frost, and conductivity has practically nothing to do with it.

The next illustration is equally surprising. He asks why, in two similar thermometers—one with a wet bulb and the other a dry—will there be recorded a difference of temperature? It should hardly be necessary to answer this question, but as "The Writer" asks it, I may say that the wet bulb is kept colder than the dry bulb by reason of the absorption of the heat necessary to the formation of vapour, which heat is gathered from the surrounding air and from the mercury itself; and, according to the demand (i.e., the dryness) of the air, so is the vaporization, and so the difference of temperature. But this difference of temperature is the result of a special exciting cause—as in a freezing machine—and in no sense can be taken as any proof of "The Writer's" theory.

The point at issue was whether or not wall paper is warmer than paint. "The Writer" argues—both at the middle and end of his letter—that because a painted wall will show more moisture than a papered wall it must therefore be colder. I have already shown, that both being inside and other things equal, the temperature must be the same. I now have to explain why the one shows more moisture. Wall paper, itself porous, is usually hung on porous lime plastering, the absorbing power of which is very great, and as fast as vapour is condensed thereon it passes into the material (I could give abundance of evidence of the excessive greediness of dry and nearly dry plastering for moisture), therefore nothing shows on the surface. But with an impervious covering, as paint, it accumulates on and trickles down the surface. But there are cases where paper is hung on an impervious wall. What happens then is what I have often seen—the paper gets sodden, and often peels off of its own weight. So that the alleged difference of temperature does not save it from condensation.

"The Writer's" remarks in both of his communications on moisture in the atmos-

phere also need criticism, but I am afraid that it will not be very edifying to your readers to pursue the subject further, and I have neither the time, nor, perhaps, you the space, to expend upon it.

"ENGINEER."

## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### MAKING BLUE PRINTS.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—I should be very much obliged if you could give me information as to the method of copying tracings by the blue process. 1st, How the chemicals are composed and mixed; 2nd, method of printing; 3rd, what paper is best for the purpose? 4th, can sensitised paper be had ready for use, if so where? 5th, how long should it be exposed in a good light?—Yours sincerely,

Bridlington.

"BRICKLAYER."

(1) For the production of white lines on a blue ground, the only chemical required is water, either cold or tepid. (2) Thin white or blue (not yellow) tracing paper should be used, and the lines drawn in with a perfectly black ink, washes and colours being avoided. When dry, the tracing is placed in a large specially made "printing frame," like a picture frame, having a glass front. The frame should be put on a table or floor, glass downwards, and the backing removed. Then the tracing is put in with the ink lines uppermost (away from the glass), and the sensitised paper placed on it, with the sensitised surface in contact with the tracing. The back of the frame is then replaced and tightened up, a piece of felt being often inserted between the paper and the wooden backing. All the above work should be done in a subdued light, but now the frame may be removed into bright sunshine or good diffused daylight without shadow. The back of the frame is hinged much as is that ordinarily used in printing photographs, so that the progress can be watched by occasionally turning back one half, observing what is occurring, and closing the frame again. When the margin of the paper shows a grey metallic colour, exposure has proceeded far enough; a few experiments should be made before serious work is attempted, however, as it is at this stage that mistakes are most likely to occur. The print should now be taken out of the frame again in dull light and completely immersed in a basin or trough of water for about fifteen minutes, with care to avoid and remove bubbles at once, by which time the lines should appear perfectly white. After a further rinsing in clean water, the print may be hung up to dry. (3) Ferro-Prussiate paper or cloth. Blue lines on white ground are obtainable by using Ferri-Cyanide Paper, and black lines on white ground by Ferro-Gallic Paper; but in both these instances Prussiate of Potash or Gallic Acid has to be used for development, and the process is slightly different from that described above. (4) Yes, from any photographic dealers, such as Hinton and Company, 38, Bedford Street, Strand, W. (5) In bright sunshine from fifteen to twenty minutes, and varying from this to as much as two hours in diffused light in dull weather.

G. A. T. M.

A stained-glass altar window has been placed in the Parish Church of St. Mary, Isles of Scilly.

Treasure in the Main Sewer in Thorn-gate (which had recently to be opened) was found to the extent of nineteen sovereigns, several silver coins, silver spoons, a diamond ring, and other valuables. The Urban District Council came to the conclusion that anything found in the sewers belonged to the Council.



## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,  
April 5th 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

**The St. Paul's Decorations.** THE decoration of the second of the four quarter domes has just been completed, and the effect is greatly to heighten the contrast between the somewhat gaudy brilliance of the decorated parts and the sombre dignity of the nave. In view of the controversy that Sir W. B. Richmond's work has aroused, it may be of interest to state who compose the Decoration Committee, under whose sanction the scheme is being carried out. It consists of the Dean, the four Canons, the Bishop of Bristol, Lord Lothian, Lord Brownlow, Dr. Edwin Freshfield, and Mr. Sumers Clark, the surveyor to the Cathedral. The controversy shows no signs of abating, and a question on the subject was asked a few days since in the House of Commons. Mr. Balfour replied to the effect that the matter was not one in which the Government had any power to interfere. Obviously the best course for those who are anxious to stop or modify the present scheme is to urge their views upon the Decoration Committee of the Cathedral.

### Future Plans.

WITH respect to the future course of the decorative scheme, Archdeacon Sinclair said, in the course of a recent interview, that he believed the whole of the plain stone round the dome was to be stencilled, but not below the base of the arches, and of course it was intended to fill in the other two quarter domes below the whispering gallery. The probability was that the drum of the dome all round the whispering gallery would be treated in mosaics, subjects bearing on the Conversion of St. Paul being chosen. Then it was likely that Sir W. Richmond would treat in mosaics, but in a lighter way, the north and south aisles of the choir. It is noteworthy that up to the present neither Sir W. Richmond nor any member of the Decoration Committee has made any public reply to the criticisms that have been so plentifully bestowed upon them.

### Bradford Fire Station Competition.

THE Bradford Watch Committee had before them last week the architects' protest, recently published in our columns, in regard to the award in the recent competition for plans for the new Fire Brigade Station. The committee decided that the conditions had been fully complied with, and awarded the first prize to plan No. 1 of the alternative designs sent in by Messrs. Mawson and Hudson, of Bradford. We are not much surprised at this decision. It is human to err; it is also human to refuse to admit that one has erred, and town councillors are not more willing than other people to eat humble pie. Moreover, it is quite conceivable that the committee in their ignorance, really think they have acted fairly. We can only hope that the next competition—that for the Cartwright Memorial Hall, which is now being advertised—will be conducted in a manner that will satisfy the competitors as well as the judges.

### Baptist Chapel at Sutton.

THIS building is erected in the High Street, Sutton, Surrey, and is built of undressed flints and best stone dressings. The design is an attempt to give by a simple treatment some ecclesiastical character to a building intended for congregational worship. The chapel has a single span roof, with no supports interfering with the comfort

of any sitting. Mr. H. D. Searles Wood, F.R.I.B.A., of 157, Wool Exchange, Coleman Street, was the architect; Mr. R. J. Humphries, of Sutton, was the builder.

### St. Mary's, Moorfields.

AN interesting London church, which will shortly be demolished, is the Roman Catholic church of St. Mary's, Moorfields. The present building, erected in 1820 from designs by Mr. John Newman, stands on the site of a much older building. The church contains some beautiful decorative work, including two great pictures painted by Aglio, representing the Crucifixion and the Assumption. These were originally executed in fresco, but they became so injured by the London climate that it was found necessary to repaint them in oil. The effect of the picture of the Crucifixion seen through the colonnade of the apse, with the light admitted from an invisible position, is decidedly impressive. Over a side altar in the nave is a good portrait of Sir Thomas More. The holy water stoups are held by two life-sized angels in white marble, and slabs of the same material record the memory of several bishops. There is also a memorial to Cardinal Wiseman consisting of a large slab of marble on the floor of the chancel.

### Destruction of Refuse.

ONE of the most economical and generally satisfactory ways of dealing with town refuse, is to destroy it by means of the Horsfall destructors, which are in use at Edinburgh, Bradford, Oldham, and elsewhere. A valuable report on the subject has recently been issued by Lord Kelvin and Professor Barr. Dr. Cameron, the medical officer of health for Leeds, found in recent trials that this destructor will consume daily 26½ tons of refuse per cell; but at Oldham the highest fuel value is obtained by a consumption of 10 tons, and Lord Kelvin and Professor Barr are of opinion that a low blast pressure equal only to one inch of water secures in this and other respects the best results. At such a pressure the Oldham refuse has, they find, a fuel value about one-seventh that of good steam coal; and it consists of the contents of open cottage ashpits, fish offal, and market garbage. A plant destroying 650 tons a week saves the Corporation £545 a year, and produces mortar, clinker, &c., of a value exceeding £1000 a year; while the cost of labour is about 9d. per ton—at Bradford only 6d. The refuse alone is burnt; yet the result of tests made both at Oldham and Bradford was to show that only a trace of smoke emerges from the chimneys, containing neither hydrocarbons nor carbon monoxide. "We are convinced," the report says, "that properly constructed plants, such as those inspected at Edinburgh, Bradford, and Oldham, cause no inconvenience whatever. The absence of smoke is such as is attained in exceedingly few, if in any, power plants using coal as fuel; while the complete destruction of organic matter is secured."

### Birmingham School Board and Architects.

AT a meeting of the Birmingham School Board, on March 24th, the Sites and Buildings Committee reported that they had considered the question of the employment of architects, and had come to the conclusion that it would not be in the interests of the Board or the ratepayers to make any change in the existing arrangements, by which particular architects were employed by the Board. Mr. Milward, who had originally raised the question and caused it to be referred to the Committee, said that the report did not touch in any way the points which he raised six months ago, which were that they were not enjoying the best return for their money, in not being able to contrast the plans of other architects with those whom the Board employed. There were in Birmingham at least ten architects who were constantly employed outside their native city in the erection of schools. It was an extraordinary thing that because of an old-standing resolution these gentlemen should be debarred from erecting schools in their native city. He objected strongly to the one-man system, which he



BAPTIST CHAPEL, SUTTON, SURREY. H. D. SEARLES WOOD, ARCHITECT.



considered was a gross injustice to other architects. An amendment was moved by the Bishop of Coventry, "that the report be approved, with the exception of the portion which relates to the architects." Mr. Kendrick held that the advantages of the present scheme considerably outweighed the disadvantages which usually accompanied monopolies. It was a great saving of time to the members of the Board and the committee. Open competition was very well where schools were built once in ten years, but where one was built once a year he contended it would be a serious tax on the members of the committee. The voting on the amendment was seven for and seven against. The chairman gave the casting vote against it, and the report was carried. Although this decision is very unsatisfactory, we are pleased to see such interest taken in Architecture by public bodies in Birmingham, and we wish that more was shown in London.

### Workmen's Compensation Puzzles.

We have more than once referred to the extreme uncertainty in the operation of the Workmen's Compensation Act. A grimly humorous cartoon on the subject by F.C.G. appeared in the "Westminster Gazette" a few days since. Two crippled workmen are conversing together, and part of a funeral procession is seen in the background.

"WORKMAN (*minus a leg*): What happened to me? Scaffolding gave way and I fell off the top of the house. Compensation? I didn't get a ha'porth—the lawyers said as how I didn't come within the Act, because the buildin' was only 29ft. 11in. high.

"WORKMAN (*with crippled arm*): That's bad luck. I only fell a matter of 15ft., but I got £100 at last after the lawyers had tried it three times. How was that? Well, they found out the buildin' was just 30ft. 6in. high, and that brought me inside the Act, so they said. It's a rum Act, ain't it? There's poor Jack Hodge bein' buried to-day. He was killed on Mr. Smith's farm and his widow don't get a farthing'!

"How's that?"

"Well, you see, he was only an agricultural labourer, and they don't count accordin' to the Act."

It will be remembered that one of the great recommendations of the Bill before it became an Act was that it would make litigation unnecessary.

### Art Exhibitions Abroad.

An interesting and instructive commentary upon our national scheme of art education has recently been made in connection with the exhibition on the Continent of works done by students in the schools of art of the United Kingdom. M. Radisics de Kutas, director of the Royal Hungarian Industrial Art Museum at Budapest, visited at South Kensington the exhibition of art school work which had obtained prizes in the annual competition for 1898. He was favourably impressed with the excellence of the work, and his report on it to the Hungarian authorities resulted in a request from Hungary for the loan of a number of the works for special exhibition in Budapest. The consent of the students having been obtained, the works were sent to Budapest. Many of the leading Hungarian newspapers have commented very favourably on the drawings, and the Hungarian authorities have given a very practical exhibition of their estimation of them by purchasing thirty.

### The Value of Art Exhibitions.

At the opening of the Fifth Annual Free Picture Exhibition at the Public Hall, Canning Town, Mr. Val Prinsep, R.A., made some very interesting remarks on the value of art exhibitions. He said it was the privilege of many towns in England to have public libraries where facilities were given to the public for reading the best works of the masters of literature. But in an exhibition such as that now opened, the public had a far better thing than public libraries, for in it all people could read the open book of the artist,

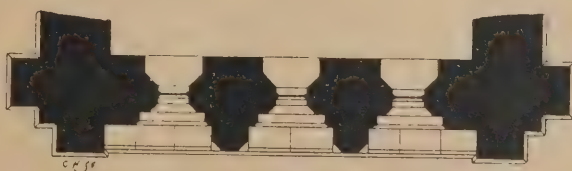
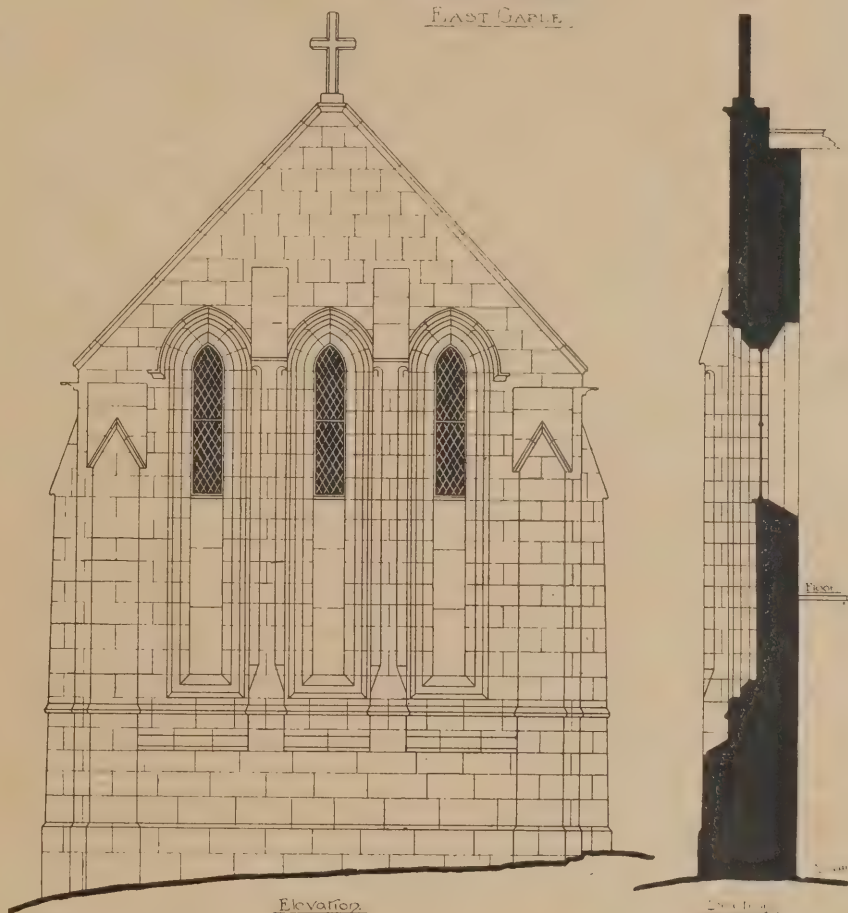
and could learn that there was a life above the life in which they were engaged daily, and see what the great artist of the past and present had provided for them. Art taught that there was something of beauty all around, and such pictures as those hung in that gallery were excellent examples of the old words, "Whatever thy hand findeth to do, do it with all thy might."

conference with the recently formed Coal Smoke Abatement Society, and medals, specially designed by Sir W. B. Richmond, R.A. will be awarded by the society for the three best domestic coal smoke appliances. We have previously referred to the aims and methods of this useful society, but we make no apology for reverting to a subject which must interest all who desire a cleaner and a healthier London.

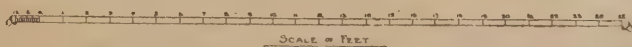
## PRESTON CHURCH.

HADDINGTONSHIRE.

EAST GABLE.



Plan



SCALE OF FEET

### Preston Church, Haddingtonshire.

This quaint church is situated in the out-of-the-way village of Prestonkirk, East Linton, Haddingtonshire. It was built in 1770, enlarged in 1824, and some internal alterations were made in 1892. A panelled and carved screen was then erected, and the wall between the church and the vestry beyond, was removed. The church stands on a slight eminence, and the east gable, seen from the road, has a very pleasing effect, being partly covered with ivy. The rest of the church is rather bald in appearance. It has a square tower with an ogee-shaped roof. The measured drawings of the gable which are reproduced on this page were made by Mr. W. H. Mason.

### Coal Smoke Abatement.

ONE of the most interesting sections of the forthcoming Building Trades' Exhibition will be that devoted to coal smoke abatement appliances. The project is the outcome of a

The Society is moving along practical lines towards a goal which is not only desirable but attainable. It has some very powerful supporters; but its success will, of course, depend greatly on numbers, and also on the funds at its command. Wherefore it may not be out of place to point out that the hon. treasurer is Dr. H. A. des Vœux, of 8, James Street, Buckingham-gate, S.W.

**Cottage Homes for Chard** are to be erected in commemoration of the Diamond Jubilee. Messrs. Symes and Madge, of Chard, are the architects.

**A motor-car factory** is to be erected at Coventry, on the Radford Fields Estate, at an estimated cost of £10,000, from plans by Messrs. Harrison and Hattrell, of Coventry.

**A new church** has been built by the Kirkcaldy Unitarian Congregation in Hunter Street, and the architect is Mr. A. S. Taylor, A.R.I.B.A. The cost of the building, including the site, was about £1100.



## Views and Reviews.

### GLOUCESTER CATHEDRAL.

Gloucester possesses one of the most interesting of English cathedrals, interesting alike to the artist and to the archaeologist. The beautiful cloisters, the choir and lady chapel, and the tower, are a continual joy to the form; while to the latter, the curious way in which the old Norman work has received a later facing is a study of abounding interest. Some drawings by Mr F. S. Waller, the cathedral architect, showing how the choir was cased by Abbot Staunton, 1337-1351, and what is now left of the church of the twelfth century, explain this very clearly. The photographic illustrations, as is usual in this series, are of a high order of merit, although some of them have perhaps suffered somewhat in the printing. That of the S.E. chapel in the Crypt is particularly good. There are also a few black and white drawings, by Mr. E. J. Burrow, of features in the precincts and of various bits of old Gloucester. The author of this volume, Mr. H. J. L. J. Massé, M.A., writes with much enthusiasm, and gives a clear and pleasant account of the history and the features of the fabric, and his labour has produced a very valuable addition to the cathedral series.

The Cathedral Church of Gloucester. By H. J. L. J. Massé, M.A. London: Geo. Bell and Sons, 1898.

### A USEFUL BOOK.

A fifth enlarged and revised edition of Professor Banister Fletcher's well-known book on *Dilapidations* will be a useful addition to this year's output of works relating to the practice and business of Architecture. It is essential to the full utility of a book which assumes, as does this one, to be at once a text book, a handbook, and an epitome of the Acts and law decisions relating to dilapidations, that it should be kept closely up to date, and held abreast of those constant modifications in the law, resultant from the decisions of the courts from time to time. It is therefore satisfactory to know that the demand for the Professor's book has justified yet another edition. In this reprint the author, beside carefully revising the work, omitting all matter which has become obsolete, and adding the results of late cases, has further added the sections of the Ecclesiastical Dilapidations Act (1871), and has considerably extended the series of questions and answers upon points of practice, which has hitherto formed a useful adjunct to the main bulk of the volume. The usefulness of the work as a book of reference for the practitioner, is further augmented by a comprehensive index and a reference table to law cases cited in the text. Mr. Edward Uttermare Bullen, Barrister-at-Law, has again assisted, and has revised the legal portion of the last edition. The book is, we think, a valuable and a useful book and is, no doubt, as the author says, the result of much labour, and will save the reader from reading through many volumes; but we have to complain that with all the care that has been taken to tabulate and epitomise the information which the book contains, Professor Banister Fletcher has yet many pages, which not only do no service to any question at issue, but are a positive annoyance to those who turn to the book for the purposes of reference or study which it is designed to fill. The recondite quotation from one of Shakespeare's plays, which appears on the title page, strikes the key-note of a certain spirit of irrelevancy which pervades the book. The trite reference to Vitruvius and the wagish picture of the "young architect," which appear in the first page of the introductory chapter, serve no purpose and are tiresome and prejudicial to the volume. The stories told at intervals throughout the book, although they may have gratified the author in the telling, detract from the dignity proper to the subject, and are quite unjustified as illustrations. It is also quite irrelevant, to say the least, to recommend the reader to avoid a certain line of action, for the reason, among others, that it

is "not gentlemanly." This is gratuitous and offensive. The book is further marred by an inclination on the part of the author to break out in places into what we believe to be known as "fine writing." Whether the writing in this case is fine or not we do not pretend to decide, but such passages are quite outside the scope of a practical guide on the subject of Dilapidations, even without the quoted verses which the Professor interpolates. These passages not only gravely detract from the usefulness of the book, but in our opinion are ludicrous. They should be treated with liberal blue pencil when the sixth edition is under revision.

"Dilapidations." By Banister Fletcher. 5th edition. Price 6s. 6d. Published by B. T. Batsford.

### DECORATIONS FOR THE EAST WALL OF KIRKLY CHURCH.

Mr. Henry Holiday has been lately showing in his studio an important piece of decorative work which has been in hand since last May. It is to be placed at the east end of Kirkly Church, near Liverpool, and consists of a central panel in mosaic, which is to come above the altar, and is surrounded by a framing of alabaster, separating it from the filling of "opus sectile" which flanks it on each side, and extends to the north and south walls. For the benefit of those to whom the phrase is expressionless, it may be stated that "opus sectile" is a middle term between tiles, glass painting, and mosaic. It is made of a kind of vitreous paste, somewhat similar to that from which the tesserae of mosaic are cut, but having a granulated surface, and the material is shaped into largish pieces, very much in the way in which glass is cut for a stained glass window. Upon these pieces the lines of the design are printed, the firing subsequently making them indelible. The range of colour obtainable is considerable, but principally among delicate colours, dark and rich tones being, one supposes, more difficult to obtain. It is quite easy to produce by this means an absolutely permanent decoration which is practically part of the wall to which it is affixed, and which gets over the difficulty attending the use of mosaic for small details of drawing. To return to Mr. Holiday's work: Above the mosaic is a frieze of winged genii, also in "opus sectile," and the lateral compositions consist of standing symbolic figures of virtues, two on each side, between each pair of which an angel floats with wings extended on a higher level. The effect of the "opus sectile" in itself is excellent, further variety of material giving colour and texture having been obtained by the ingenious use of the thick, opalescent American glass with which the public eye is familiar in the highly decorated taverns so frequent nowadays. Used as Mr. Holiday has used it, it suggests precious and rare marbles, distinctly and specially suggesting some of the older marble on the exterior of St. Mark's, Venice. The central mosaic, representing the Last Supper, is a repetition, with improvements, of that which was shown at the Arts and Crafts Exhibition some years ago, and the designs of some of the other figures are also familiar. When an artist has thought out a conception of any particular virtue or quality, and has made it as expansive as he knows how, he no doubt feels that a departure from that type will be no improvement and that variety must be sought in different combinations of the same figures, in the case when the same qualities or symbolical figures are demanded. Yet such a practice has its commercial side!

It is always a difficult thing to successfully combine mosaic with other forms of decoration, particularly when, as in this case, the tesserae are small; and the two materials do not enhance each other's beauty. The mistake lies in using mosaic at all for positions nearer the eye than a distance of about 40ft. At that distance the tesserae and the ground blend together with a softness and sparkle of colour very pleasing to the eye, but a less distance tempts to greater minuteness of detail than the material will well bear, the end of which is such work as is produced in the Papal Manufactory at the Vatican to the great admiration of the ignorant. A. W.

## INSTITUTE OF DECORATORS.

THE recently incorporated Institute of British Decorators held their first annual general meeting at Painters' Hall, Little Trinity Lane, London, E.C., on Thursday, March 23rd, 1899. Members from all parts of Great Britain and Ireland attended this meeting, the primary object of which was to formally elect the general council, in which is vested the management of the business and affairs of the Institute.

Mr. J. D. Crace of Wigmore Street, London, was duly elected president of the Institute; Messrs. Thomas Bonnar of Edinburgh, George G. Laidler of Newcastle, Alexander G. White of Liverpool, J. C. M. Vaughan of Hereford, Robert J. Bennett of Glasgow, and Henry Gibson of Dublin, were appointed vice-presidents of the Institute; and Messrs. William Allon of South Shields, William Brown of Dundee, Charles Carlton of Glasgow, James Clark of Edinburgh, M. Cowtan Cowtan of London, M. E. Dockrell of Dublin, Isaac H. Donaldson of London, David Laing of London, John McIntyre of Dublin, Thomas Preston of Burnley, John Ratcliffe of Bolton, John Scott of Glasgow, James Sibthorpe of Dublin, John Smith of Sheffield, William G. Sutherland of Manchester, John Taylor of Birmingham, and John Whyte of Aberdeen, were appointed members of the general council.

Mr. I. Hunter Donaldson, the present Master of the Worshipful Company of Painter-Stainers, in whose Hall, in Little Trinity Lane, the Institute have their headquarters for the time being, at the opening of the proceedings addressed, in the name of the Painters' Company, a few words of cordial and sincere welcome to the members of the Institute, wishing them a full realisation of the hopes on which they had constituted the Institute.

Mr. John D. Crace, the president, then addressed the meeting as to the progress made by the Institute since the meeting of the Provincial Council in February last, and it was stated that 174 decorators had become members of the Institute, and that in addition upwards of sixty applications for membership had been received by the secretary, and would be brought up for consideration and election at the meeting of the General Council to be held at the close of the annual general meeting. Several matters of interest were brought to the notice of the meeting by the president, including the question of the admission of women, if duly qualified, as members of the Institute; and it was the general opinion of the meeting that, if qualified, they ought to be admitted. A further question of subdividing the Institute into a larger number of districts than at present was also considered, but it was thought that further inquiry should be made, and reports were invited from the various local associations.

The president then invited the members present to express their views as to the expediency of compelling applicants for admission as members of the Institute to submit to an examination before being admitted to membership, and pointed out that, in his opinion, to insist upon such a test, would be to kill the Institute at the very start, for it was obvious that men who had been in business for many years, and who were of established reputation, would not submit themselves to examination as a condition of admittance to an Institute only in its infancy. The president further stated that all applications for admission to membership of the Institute would have to come before the General Council for election, and every applicant would have to be nominated by two existing Fellows of the Institute. Every care would be taken, he said, both by the General Council and by the Fellows nominating, that no unsuitable persons should be elected; and that, at any rate for the present, this should afford the Institute a sufficient protection against the admission of unsuitable members. Several members present expressed themselves as to this view.

At a meeting of the General Council which was subsequently held, new members were elected to the number of fifty-six.



## Professional Practice.

**Aberchirder.**—A new mission hall has been erected at a cost of about £1000. The principal entrance, which takes the form of a porch built out from the main building, faces Main Street. The inside of the building is lined to a height of about 4ft. with narrow pitch-pine linings, the front of the gallery being finished with the same material. The rear portion of the building contains a classroom, a vestry, and a cloak room. On the east side of the back building, under the classroom, there is a heating chamber. The masonry in the front gable is of broken ashlar, with dressed corners, while the side walls are of plain rubble. All the material used is grey granite from the local Knockorth Quarry. The architects for the hall were Messrs. Duncan, Turriff, while Mr. Alexander M'Hardy, Aberchirder, contracted for the whole building and fittings. A new organ, by Story and Clark, Chicago, has been obtained for the hall.

**Bristol.**—A new adult school building has recently been opened at Barton Hill. The building consists of a large hall, which can be turned into a gymnasium, and three smaller rooms. The hall will hold about 450 people, and the entire building will accommodate about 1000 people. Messrs. Cotterell and Thorpe supplied the plans, and the building was constructed by Mr. W. Church. The entire cost of the building was £2600.

**Doncaster.**—A new theatre, erected at Doncaster by Mr. J. W. Chapman, was opened last Tuesday week. The old theatre in the Market Place, which was built in 1776, had become out of date, and the Corporation, who are the owners, intimated their intention of pulling it down for street improvements. The new building will seat 1500 persons. It is fitted up with modern appliances, the staircases are fireproof, and the building is supplied with Grinnell sprinklers. The stage is on the street level, and can be driven upon therefrom. It is 75ft. wide by 32ft. deep. Mr. Chapman, the manager, drew the plans, and Mr. P. Briggs, of Arundel Street, London, was consulting architect. The builders and contractors were Messrs. H. Arnold and Son, of Doncaster. The seating and decorations were by Messrs. Deans, of Birmingham; the electric installation by Messrs. Fisher and Allison, of Doncaster; Messrs. E. Oldroyd and Co., of Leeds, fixed the heating apparatus and fireproof curtain; and the fire hydrants and Grinnell sprinkler installation were fixed by Messrs. Dowson, Taylor and Co., of Leeds and Manchester.

**Inverness.**—Skibo Castle is about to be extended at a cost of £25,000. The present main part of the castle forms the east front, and the new additions will form the south and west fronts. There is to be a basement throughout the whole of the extensions, and, owing to the configuration of the ground on the west, the gunroom, 21ft. by 25ft. 6in., will be placed under the billiard-room. There are also to be in the basement an electric-room and furnace-room, wine cellars, workshop, and stores. On the ground floor there will be arranged the drawing-room, boudoir, library, private room, secretary's room, writing and smoking-room, and billiard-room. The drawing-room, which will open directly off the grand hall by wide folding-doors, will measure 36ft. 4in. by 24ft. 6in.; while the library will be 38ft. 4in. by 22ft. 4in. Off the hall there will run a main corridor, extending to the garden entrance in the west, and off this corridor will be the private apartments. The lower part of the west wall of the hall is to be removed, and three arches with marble columns will be formed. These will open into the new grand staircase, which is to be of white Sicilian marble, and lighted by three stained glass windows; while the ceiling is to be panelled. The first floor will consist of twelve rooms. The second floor will provide twelve guests' bedrooms and dressing-rooms with bathroom and lavatory accommodation. On the third floor are to be

situated seven servants' bedrooms. The central part of this floor is to be reserved for a recreation room, 63ft. long by 18ft. broad, which will also be equipped as a gymnasium. In the north-west corner of this floor there will be a tower-room, 32ft. by 21ft. From this apartment a separate staircase will lead to the roof of the tower, which will be flat, 24ft. by 35ft. 6in. The whole of the building is to be constructed upon fire-proof principles. Built of steel and concrete, the floors are to be as far as possible divided into sections, so constructed that any one section may be cut off by fire-proof doors. Electric fans are to be used for ventilation purposes, and electric light is to be installed throughout the building. The contractors are Messrs. A. and J. Smith, of Inverness, and the architects are Messrs. Ross and Macbeth, of Queen's Gate, Inverness.

**Leicester.**—A new isolation hospital is being erected about a mile and a half from Leicester, from the plans of Messrs. Blackwell and Thomson, of Leicester, and the foundation-stone was laid last week. The hospital, when completed, will consist of four separate one-storeyed pavilions for the treatment of scarlet fever, one pavilion for typhoid fever, and two isolation pavilions. The other buildings comprise an administration block, discharging block, and mortuary. The several buildings are connected by macadam roads. The facings of the buildings are of Ellistown brick, with stone dressings, and the roofs are covered with green slates.

**London, S.W.**—Wandsworth is to be provided with public baths. The buildings have been designed by Messrs. Spalding and Cross, and will cost about £20,000. The style is to be English Renaissance, and the front will be built of red bricks with Portland stone dressings. The building will have a frontage of 75ft., and an average depth of 246ft. A first-class swimming bath, 100ft. by 30ft., and a second-class bath, 85ft. by 30ft., are to be provided. There are to be six men's first-class slipper baths, thirty second-class, and four first and eight second-class ladies' baths. The baths will be able to be floored over for a gymnasium or public entertainments.

**Oldham.**—A new Sunday School in connection with Middleton Road Primitive Methodist Chapel was opened on March 22nd. It consists of a large hall with a balcony projecting over almost one half. On the balcony and beneath it are three class-rooms, which can be divided from the main room by folding doors, or thrown open to form one room to accommodate about 800 people. Messrs. Wild, Collins, and Wild, of Oldham, are the architects.

**Southampton.**—A monument has been erected in the Southampton Cemetery to the memory of the late Mr. A. J. Dyer, J.P. It is 8ft. in height, the plinth is 3ft. 6in. wide, is of grey Yorkshire stone, and from it rises a moulded base and pedestal of Portland stone. The whole is surmounted by a canopy supported by red Peterhead granite columns with moulded bases and carved capitals. The work was designed and executed by Messrs. Garrett and Haysom, of Southampton.

The new buildings for Taunton's Trade School in New Road and Trinity Road were recently opened. The buildings are of red bricks. The dining-room is 20ft. by 14ft., has a wood-block floor, and is capable of accommodating forty boys at dinner. To the left is the technical instruction room, which also has a floor of wood blocks, and measures 26ft. 10in. by 26ft., with working space for thirty boys. A wide staircase leads to the first floor, providing hat and cloak lobbies and assembly-room; this room is 44ft. by 26ft., and is lighted by four windows on the north side. On the side opposite the windows is a bay with raised platform, which can be reached by a separate entrance from the cloak-room; another flight of steps leads to the second floor, containing three class-rooms. The woodwork throughout the interior of the building is stained oak. The old offices have been pulled down, and new offices,

with automatic flushing, erected on the south-east of the triangular plot on which the building stands. The cost is estimated at £2300 (exclusive of site), which works out at £10 per head. The builders are Messrs. Brinton and Bone, of Southampton; and the architects, Messrs. Mitchell, Son, and Gutteridge, of the same town.

## JERRY-BUILDING IN ABERDEEN.

A PUBLIC meeting was held on March 28th, in the Trades' Hall, Aberdeen, under the auspices of the Operative Masons' and Granite Cutters' Union, for the purpose of drawing attention to the prevalence of jerry-building in Aberdeen. Mr. John Anderson, president of the union, occupied the chair.

The chairman said that the question of jerry-building had been under their consideration for some time, and a meeting such as was being held would perhaps go far to make it plain that something might be done to improve on the present condition of affairs. Resolutions would be submitted by operatives, and he thought that evidence would be given showing that the operations of jerry-builders were not in the best interests of the community. Many letters were read from associations who had not been able to send their representatives, expressing their sympathy with the object of the meeting, and admitting the existence of the evil.

The first resolution, moved by Mr. John Elric, was as follows:—"In view of recent experiences in the building trade, this meeting of citizens protests against the operations of the jerry-builder, on the ground that such operations are dangerous to workmen and detrimental to the interests of the community, in so far as dwellings are not erected with a view to the comfort and convenience of the occupants, but solely in the interest of the speculator." The resolution was duly seconded and carried. Mr. A. Robertson put forward the following proposition:—"That this meeting agrees to urge the Town Council to take steps to safeguard the workmen as well as the interests of the community by having fully-qualified inspectors or architects to supervise all work to which its Plans Committee gives sanction." This was carried unanimously.

Mr. James Souttar, architect, who was invited by the chairman to speak, said it was to be regretted that there was not time for conference, so that the Federation Council, the Architects' Council, and the operatives might have had opportunity to discuss this important question, so that they could have stood shoulder to shoulder that night. As it was, however, he felt that it had been a good thing that the operatives, feeling this matter as they did, and being, if possible, more deeply interested than any other person, had come forward themselves and expressed their own ideas as to the evil prevalent, and its remedy. If they had not had help from the masters or co-operation from the architects, it gave all the more weight and importance to their own action. His view was that the Dean of Guild Court should pass no plans that did not come up to a certain "Building Act" which it should frame or adopt, and that at least one qualified architect should be on that Court to see that the plans are according to the regulations. He also held that no plans should be looked to that are not submitted by qualified architects, who should undertake the supervision of the works to the end. In this way they would have a Building Act, a Dean of Guild Court, and guaranteed supervision.

The chairman said they would see that the last resolution was forwarded to the local authority. He remembered that resolution was passed in the Trades Council on this very subject, and it was discussed in committee of the Council. If he was rightly informed, one of the building employers was the greatest opponent of that resolution, but, fortunately for them, and he supposed the community would suffer no harm, that gentleman was no longer in the Council. They would be on their guard to see that this resolution was attended to.



## Keystones.

**The New Jamaica Bridge, Glasgow,** will shortly be finished.

**A new lifeboat house** is to be erected at St. Mary's, Isles of Scilly.

**Bonnington Bridge, Edinburgh,** is to be reconstructed and widened at a cost of about £5550.

**An Academy** is to be erected in Irvine from a plan by Mr. Armour, architect, at a cost of £10,000.

**A Stained-glass Window in Durham Cathedral** was unveiled on March 28th by Canon Tristram.

**The Purchase of Spitalfields Market** freehold has been decided on by the London County Council.

**Sutton Court, Chiswick,** will shortly be demolished, as the estate has been sold for building purposes.

**Mr. Birket Foster,** the well-known water colour painter, died on March 27th, at Brae-side, Weybridge, Surrey.

**An infants' school is being erected** in Albemarle Row, Bristol. The architects are Messrs. La Trobe and Weston.

**The Diamond Jubilee Tower,** erected on Castle Hill, Huddersfield, was opened on March 25th. It has cost about £3000.

**A new free Open Air Bath** was opened in Liverpool on March 28th. It is 73ft long and 45½ft. wide, and has cost about £1000.

**The foundation stone of Ferndale Chapel** was laid last week. The chapel is to cost £3000. Mr. A. O. Evans, of Pontypridd, is the architect.

**New Washhouses in Glasgow.**—The new washhouses in Kennedy Street, Glasgow, were formally opened on March 24th. They have cost about £5000.

**The Foundation Stone was laid at Attercliffe** of a new Baptist Chapel, which is to be erected at the corner of Eleanor Street and Durnall Road.

**Ye Old Red Lion,** which will always be associated with Dickens's "David Copperfield," is to come down, because of the widening of Parliament Street.

**A New Chapel.**—Cardinal Vaughan has consented to the erection of a chapel in the new Roman Catholic Westminster Cathedral. The estimated cost is £7000.

**Worthing New Post Office** was opened on March 26th. It has been erected at a cost of nearly £4000, and stands at the corner of Market Street and Chapel Road.

**The New Unitarian Schools at Bradford** are now open. They have been erected at a cost of £1700, and were built from the plans of Messrs. Empsall and Clarkson.

**A New Board School** is to be erected at Calverley. The plans and specifications have been passed, and the Educational Department has sanctioned the borrowing of £4228.

**An Exhibition of Architectural Drawings** has been held, under the auspices of the Perth Architectural Association, in the lecture room of the Natural Science Hall, Perth.

**Railway Extension in Cornwall.**—A new section of the North Cornwall Railway, connecting Padstone with Wadebridge, has been opened. The line is five and a half miles in length.

**Fire Brigade Accommodation at Glasgow.**—The Glasgow High School building construction classes had a very successful visit to the central fire stations, old and new, first visiting the old station, where appliances were inspected, and the firemen, through Captain Paterson's courtesy, made a most efficient turn-out. The new fire station was next inspected, under the guidance of Messrs. Sharp and Drennan. The cost of the building will be £40,000; there will be men and officers' quarters, with gymnasium, &c.—all up to date. The building fronts Ingram and High Streets, with four running doors to former street. Mr. A. B. McDonald is the architect.

**St. Michael's, Bassishaw,** will shortly be demolished.

**The Widening of Lower Thames Street.**—The Improvements Committee of the London County Council have decided to recommend the Council to contribute £50,000 towards the widening of Lower Thames Street.

**Death of an Aberdeen Builder.**—A well-known builder in Aberdeen, Mr. D. Macandrew, died on March 27th. One of his erections is the Peterhead Convict Establishment, which cost some £32,000.

**British Museum Library Extension.**—The late Mr. V. S. Lean, barrister, has bequeathed £50,000 to the trustees of the British Museum for the improvement and extension of the library and reading-room.

**The Martello Towers,** erected as part of the Duke of Wellington's scheme for the protection of Southern England against Napoleon's threatened invasion, are gradually disappearing. Two of the towers near Hythe are to be blown up by the Royal Engineers.

**Inadequate Housing at Camborne.**—At a meeting of the Camborne District Council, the medical officer stated the house accommodation for the working classes is entirely inadequate for the district. The erection of an isolation hospital was also a matter for consideration.

**New Baptist Chapel at Reading.**—The foundation stone has just been laid for the new Baptist Chapel at the corner of Groveland's Road, Reading. It will provide accommodation for about 450 people. Messrs. Cooper and Howell are the architects, and Messrs. Collier and Catley the builders.

**The restoration of the Wadham transept** in Ilminster Parish Church is under the supervision of the architect to Wadham College, Oxford. In removing the plaster of one of the walls close to the tomb of Sir William Wadham, a piscina was disclosed, ornamented with the four-leaf flower pattern and other embellishments of the Early Perpendicular style.

**A Timber Drawer's Death.**—A timber drawer, named George Lowe, of Worsley Terrace, Golborne Road, Ashton, was killed on March 21st, at the Mains Colliery, Ashton, belonging to Messrs. Cross, Tetley, and Co. It appears that the deceased, along with a man named Williams, was engaged in timber drawing, when Joseph Lee, a drawer, heard a sound as if a roof were falling, and at the same time heard someone shouting for help. On going to the place he found Williams partly covered by the fall of roof, and at once got assistance. Williams was extricated, and it was found that both his legs were broken. Deceased was recovered some time afterwards, but was quite dead. An inquest was held on March 24th, at which the jury returned a verdict of "Accidental death."

**Goole Baths.**—There is a discussion going on between the School Board at Goole and the District Council concerning proposed baths. At a meeting of the Urban Council a letter was read from the School Board upon the subject of the proposed baths, and asking for observations of the Urban Council on them. The Goole School Board had a scheme for erecting baths upon the Alexandra Street School site, which the Education Department refused to sanction, and in reply to the letter the School Board wrote the Department that the Urban Council had refused to offer proper accommodation for the school children of the town, and that the baths were not central, were extravagant, and possessed other defects. They also stated that the Urban Council's baths were 1000 yards from the biggest school in the town, and inaccessible to the scholars, the Council having also refused to provide instructors or towels. To this letter the Urban Council General Purposes Committee replied, giving a categorical denial to each statement, and sending measurements which showed that the School Board figures were inaccurate, and that the site of the Council's baths was more central, and also that the scheme would only cost £6500. They denied that the School Board had asked the Council to provide instructors or towels.

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### FOR STEAM USERS.

We have received a new catalogue of Messrs. Holden and Brooke's steam users' specialities. Among these may be noticed the exhaust steam injectors, which do, by means of waste steam, what an ordinary injector or pump does by means of boiler steam, and they provide hotter water without a feed-water heater, than other systems do with one. Also all heaters increase back pressure, whereas these injectors decrease it. The system of feeding boilers with water heated and forced by waste steam is the most economical, owing to the saving of coal. By an easily controllable and neat, compact, automatic instrument, the feed is pumped into the boiler for nothing, and heated up in the process. The injector is self-starting, and in addition to feeding boilers, it may be used for supplying hot water to any part of a works, and also for the heating of buildings. The firm also undertakes the repair of injectors of any make and pattern. This catalogue gives particulars of many other specialities for steam users, including the "Sirius" pulsating pump, Brooke's patent steam dryers, Brooke's patent anti-primers, the "Sirius" steam trap, Russell's steam pipe water ejection valve, water lifters, ejectors, &c., boilers and circulators, back pressure valves, boiler feed valves, footvalves, strainers. Address: Sirius Works, West Gorton, Manchester.

### NON-FLAMMABLE WOOD.

We have received a sample of wood, treated by the special process of the British Non-Flammable Wood Company, Limited. We have tested this sample and find that the effect of fire is simply to char it. The wood is largely used by the British and Foreign Governments, for warships, and by American architects in the construction of both large and small buildings. The process consists of impregnating by hydraulic pressure the fibres of wood under vacuum with a solution of fire resisting chemicals, which when subsequently evaporated leaves minute crystals deposited in the pores of the wood, thus fireproofing it and rendering it antiseptic. This treatment is claimed to be permanent. The process increases the weight of the wood by 5 to 12 per cent., and is claimed not to injure the wood for structural purposes, but for safety the Company recommends that when used for strength in construction, as for beams, rafters, &c., the scantling should be 5 per cent. thicker. The woods treated by the process are fir, mahogany, ash, beech, birch, cedar, cherry, elm, and walnut; impregnating to a depth of two inches all round is considered sufficient for all practical purposes. It is claimed that the wood will take paint, varnish, and polish better than ordinary wood, owing to the surface pores being filled up. Soft wood articles cost about 30 per cent. more, but with the harder kinds the percentage of increase is less. The process has the effect of seasoning the wood. Most exhaustive tests have been applied to the wood, and very satisfactory results obtained. The wood is practically incombustible, and its slightly extra cost, as compared with ordinary wood, should be no drawback to its general use, in view of the immense saving from fire-waste.



## Under Discussion.

### INTERIOR ELECTRIC LIGHTING.

At the last fortnightly meeting of the Glasgow Architectural Association, Mr. Sam Mavor delivered a lecture on the "Electric Lighting of Interiors." He pointed out that it does not require a skilful craftsman to lay electric light conductors in the grooves of wood casings erected by a joiner, nor to screw to their bases manufactured switches and such apparatus. The result is that much wiring work is done by men and lads who are not tradesmen, and who are ignorant of the consequences which might arise from their inexperience or carelessness. Many defects are of a kind which cannot be discovered by ordinary tests after the completion of the work, and it is, therefore, of great importance that wiring work should be inspected during progress. Architects were strongly urged to encourage their clerks of works to qualify as inspectors of electric light wiring, as they only were in a position to give inspection of the nature required.

### ELECTRIC TRACTION.

At a recent meeting of the Society of Arts Mr. Philip Dawson read a paper on "Electric Traction and its Application to Suburban and Metropolitan Railways." He said the problem of greatest importance in which electric traction would be a principal factor was the rapid transportation of large crowds to and from their business in our cities. England was the first to introduce electric traction on railways, both underground and overhead, as instanced by the City and South London and the Liverpool Overhead Electric Railways, but to prove commercially that very much heavier traffic could be handled and much greater distances traversed, and to develop the necessary machinery, was left to America. Confining himself to a service such as that given by the Metropolitan and District Companies, with frequent stops and short runs. Mr. Dawson emphasised the importance of rapid acceleration on such lines, and showed the advantages electric traction could give in that respect. From a comparison of actual results obtained on the Chicago electric railways and the Metropolitan and District lines in London, it appeared that, whereas the *maximum* speed of twenty-five miles an hour was obtained in 10sec. with electric traction, it took 33sec. to do it with steam locomotives, and that, whilst the electrically propelled train could do the distance of 1880ft. in 66sec., with steam it would take 93sec. He proceeded to contend that from the economical standpoint of generating power, electricity was a cheaper method of operation than steam locomotives, and to that end quoted a large number of figures giving results realised in American practice. In conclusion, he mentioned a few details regarding the two large power stations now being equipped in New York and designed to operate the two large tramway systems of that city—viz., the Metropolitan and the Third Avenue

### THEORY AND TRADITION IN ARCHITECTURE.

At the last monthly meeting of the Sheffield Society of Architects and Surveyors, Mr. E. P. Warren, of Westminster, gave a lecture on "Theory, Practice, and Tradition." He said the value of theories in the training of students of Architecture was twofold. Theories provide an excellent mental exercise and incitement to study; and such of them as are of approved authenticity, logical quality, and obvious derivation from experience pass into tradition, become axiomatic, and form part of the necessary groundwork of all architectural training. They are practically statements of first principles, and should form the initial exercises of the student. The architect needs the moral compass of trained discrimination, with its needle of principle ever veering to the north point of truth; provided with this, he can afford to make a few experimental divagations—he can always recover his true direction. It is often said that the profession of an

architect is a modern one; it appears to be understood that he has evolved himself, has created his profession and its modern condition, as they stand. This, said Mr. Warren, is an impossible view; the evolution was gradual, and very clearly traceable from the mediæval master builder upwards. The Renaissance brought new and foreign ideas and forms, and with them the need of a trained interpreter, a man of education. Inigo Jones, Wren, and Chambers all were interpreters. The architect has to supply the imaginative element that makes building Architecture; he is rendered necessary by the inability of the working builder to originate and organise comprehensive schemes. The difficulties of producing real Architecture under modern conditions are great and complex. Commercialism is against us; the rush and hurry of the age are against us; and perhaps our worst obstruction is the almost absolute lack of real sympathy with architectural ideals, the extreme paucity of educated taste which we meet with in our patrons, and our public traditions are broken, and have to be revived, or created afresh. The enormous help and value of strong tradition, the immense benefit of a real vernacular expression in Architecture, are abundantly apparent to those of us who carefully study the past, who read between the lines of architectural history, and who are struggling to apply true principles under exasperatingly antagonistic conditions. There is, however, hope for the future; we seem to have done with revivals, with mere copying of a dead past.

### EARLY ARCHITECTURE IN WARWICKSHIRE.

Mr. J. A. Cossins read a paper before the Archaeological Section of the Midland Institute on "Early Architecture in Warwickshire." He said that though it cannot be called a work of architecture, the great monolith, called the king's stone, at Long Compton, is the oldest erection by man in stone remaining in the county. Of Roman buildings we have nothing, or next to nothing. The oldest examples of building remaining are very probably some fragments of masonry in the wing wall which crosses the moat at Tamworth Castle, and the ground and second storeys of the central tower of Wooton Wawen Church. These are of the kind generally called Saxon; but although the well-known arches of the tower at Wooton Wawen have all the most prominent characteristics of that style, it is very probable the church was not built by the great and influential Wagen, from whom the place derives its name, but by Robert de Toner, to whom the Conqueror granted the place very soon after the Conquest, certainly not later than the eleventh century. There are some fragments of wall here and there in some of the oldest churches which may be of a date earlier than 1066, but it is by no means certain that they are so old. After the establishment of the Norman power, and during the reigns of the first three kings, cathedrals, monasteries, and churches were built in amazing numbers, but the wealth and energy of the nation during the time of Stephen were bestowed chiefly on building castles. During his reign there were founded, and either wholly or partially built, at least 1500 castles, of which 1050, it is said, were destroyed by Henry III. How all this building was accomplished in about eighty years, if the population was as small as it is generally supposed to have been, must for ever remain a mystery. There is very little doubt that the Saxons, when they built in stone, made rude copies from the already rude architectural fragments of Roman works, which must have been then very plentiful. But the earliest real Norman work was either done or superintended by masons brought over from the Continent. It was at first rude and simple, with very thick mortar joints, but very soon improved, and very noble and grand works of extraordinary richness were produced. In Bickenhill Church arcade there is an example of the ruder kind; in Polesworth an arcade as simple, but better executed; and in Beaudesert and Stoneleigh are works of extreme elaboration.

Of the 288 churches, or thereabout, in the county, about eighty-five have remains of Norman work, but there are many more that are of early foundation, of which no remains exist that can be recognised as Norman or earlier. About thirty-five are mentioned in Domesday Book as being then in existence, and it is probable that those belonging to monasteries were not included.

### SEWAGE DISPOSAL.

Mr. W. J. Dibdin delivered a lecture on March 27th to the members of the Royal Institute of Public Health in London on "Sewage Disposal." After tracing the history of the bacterial treatment, he said our authorities at the Board of Trade had still so much faith in what was known as the land treatment of sewage that they would approve no scheme unless, as a final resort, the effluent were passed over land. At first sight that system seemed admirable, even as a complete treatment. Sewage was passed over land, and it drained through the soil, and so became purified. Almost wherever tried, such a system would give satisfactory results at first, but the result did not last long. When examined, it was seen that this old system of filtration was a form of purification of the sewage by bacterial action, and it was not permanently satisfactory, owing to the fact that the liquid quickly cut channels for itself through the different layers of soil, and so was not retained long enough for the bacteria to act. It was also found that sewage deposited sludge on the surface, and in time this impregnated the atmosphere and became a nuisance. Mr. Dibdin showed by diagrams how these faults had been discovered in several cases. He also showed how the bacterial method was being carried out in various towns. Among these was Leeds, which city, he said, had been in very serious difficulty for some time as to sewage disposal, and they were now face to face with a possible expenditure of three-quarters of a million sterling in one of the alternative methods—bacterial or chemical action. They, therefore, initiated experiments to discover whether the simple process he was explaining would be useful in the case of a very complex sewage of such a manufacturing community. Those experiments he had watched, as also some at Blackburn. In the latter town there were very elaborate sewage works, which, however, were not satisfactory. By a series of elaborate diagrams Mr. Dibdin showed the weekly results of experiments, both at Leeds and Blackburn, and claimed that in both cases they had abundantly demonstrated the efficiency of the method. The resulting effluent came away somewhat opalescent, but in two days was perfectly clear and practically pure, so pure indeed that fish lived and thrived in it. As a result of this new method of sewage purification, chemical sewage works were dead. No new ones had been erected for a long time. The bacterial system, while comparatively inexpensive, was more efficient than any other. In the course of a discussion which followed, Mr. Dibdin said the effluent from the bacterial process contained valuable nitrates, which had an extraordinary effect upon some soils. At Sutton, for instance, land treated with it yielded a crop of mint which produced £24 per acre.

The Parish Church at Playden, Kent, has just been reopened, after having been restored at a cost of £900.

Additions to Eastleigh Parish Church are about to be executed from plans prepared by Sir A. W. Blomfield. The accommodation will be increased from 270 to 895 sittings, and the proposed expense is £4000.

An Underground Railway for New York.—The Rapid Transit Railroad Commission of the City of New York has accepted the proposition of the Whitney Syndicate to build an underground railroad in that city. The cost will exceed 50,000,000 dols. This will be the first underground railroad made in America.



## COMING EVENTS.

## Wednesday, April 5.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Mr. H. O. Tarbolton on "Plaster-work," with limelight illustrations. 8 p.m.

ROYAL ARCHÆOLOGICAL INSTITUTE.—(1) Mr. J. Lewis André, F.S.A., on "Ritualistic Ecclesiology of North-East Somerset." (2) Mr. J. P. Harrison, M.A., on "Influence of Eastern Art on Western Architecture in the Eleventh Century." 4 p.m.

BUILDERS' FOREMEN AND CLERKS OF WORKS' INSTITUTION.—Ordinary meeting of Members. 8 p.m.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—Dr. Fryer, M.A., on "Ancient Fonts in Gower." 8 p.m.

## Saturday, April 8.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Visit to Woodhouselee, conducted by Mr. J. W. F. Tytler.

SANITARY INSPECTORS' ASSOCIATION.—Professor B. Fletcher, F.R.I.B.A., on "The Present Position of Sanitary Building Construction."

## Monday, April 10.

SANITARY INSTITUTE.—Mr. E. T. Hall, F.R.I.B.A., on "Sanitary Building Construction." 8 p.m.

VICTORIA INSTITUTE.—Meeting at 4.30 p.m.

BRISTOL SOCIETY OF ARCHITECTS.—Mr. Herbert Singer (of Frome), on "Iron and Bronze Work."

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SOCIETY OF ARTS.—Prof. H. R. Proctor, on "Leather Manufacture." The first of a series of four lectures. 8 p.m.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—"The Application of Colour to Interior Ornament in Relief." Report by the Art Standing Committee. 8 p.m.

## Tuesday, April 11.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.—Annual Meeting. Election of officers, &c.

## Wednesday, April 12

EDINBURGH ARCHITECTURAL SOCIETY.—Mr. J. Fairweather, of the Glasgow Architectural Association, on "Minor Points in Practice." 8 p.m.

SOCIETY OF ARTS.—Ordinary Meeting at 8 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Inspection and Demonstration at Disinfecting Station, Lot's Road, Chelsea. Conducted by Dr. Louis Parkes. 3 p.m.

## Thursday, April 13.

SOCIETY OF ARTS.—Mrs. Philip H. Newman on "Some Goldsmiths and their Works," with line-light illustrations.

INSTITUTION OF ELECTRICAL ENGINEERS.—Meeting at 8 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Inspection and Demonstration at Beddington Sewage Farm. Conducted by Mr. T. Walker. 3 p.m.

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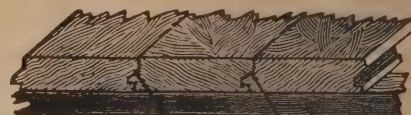
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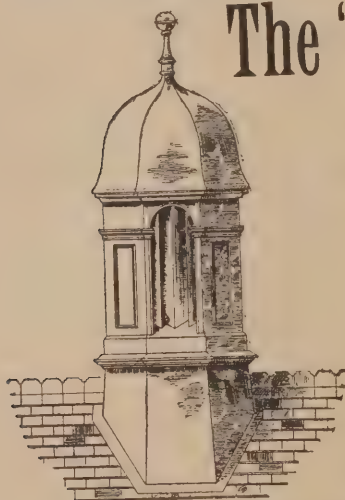
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Tallow, Town	per cwt.	1 1 6	
Tar, Stockholm	per barrel	1 6 6	
Turpentine	per cwt.	1 12 6	
Glue	per cwt.	1 19 6	2 18 6
Lead, white, ground, carbonate	per cwt.	0 19 0	
Do. red	per cwt.	0 16 9	
Soda crystals	per ton	2 15 0	
Shellac, orange	per cwt.	3 8 0	3 12 0
Do. sticklac	do.	2 2 6	2 15 0
Fumice stone,	do.	0 8 9	

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Tin, Straits	do.	109 0 0	110 0 0
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Do. do. unsorted	do.	7 5 0	8 5 0
Do. Riga	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow	do.	14 15 0	
Do. do. 2nd	do.	12 0 0	
Do. do. Unsorted	do.	8 0 0	10 10 0
Do. do. White	do.	7 15 0	9 15 0

Do. Swedish	do.	10 5 0	15 0 0
Do. White Sea	do.	10 15 0	18 0 0
Do. Quebec Pine, 1st	do.	18 5 0	
Do. do. 2nd	do.	15 5 0	16 15 0
Do. do. 3rd &c.	do.	7 0 0	7 15 0
Do. Canadian Spruce, 1st	do.	7 15 0	9 0 0
Do. do. 3rd & 2nd	do.	6 7 6	6 10 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	do.	6 15 0	8 10 0
Flooring Boards, 1 in. prepared, 1st	per square	0 11 3	
Do. 2nd	do.	0 10 9	
Do. 3rd &c.	do.	0 8 3	

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Birch, Quebec	do.	3 0 0	5 0 0
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, lin., Cuba	per ft. sup.	0 0 4	0 0 4 1/2
Do. Honduras	do.	0 0 4 9/16	
Do. Tobasco	do.	0 0 4 1/2	
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 4 15/16	
Do. African	do.	0 0 3 5/16	
Do. St. Domingo	do.	0 0 5 1/16	
Do. Tobasco	do.	0 0 3 21/32	
Oak, Dantzic and Memel	per load	3 5 0	3 15 0
Do. Quebec	do.	4 12 6	
Teak, Rangoon, Planks	do.	8 10 0	13 15 0
Waincot, Riga (Baulk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub. ft.	0 1 9	0 2 7

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## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

**BIRMINGHAM.**—Extensions to warehouse, for J. Wright and Co., Thimble Mill Lane, Birmingham. Mr. W. Hale, architect, Colmore-row, Birmingham.—  
J. Dallow... £1,735 W. Sapcote and Sons £1,606  
E. Giles... 1,732 J. W. Smith... 1,587  
T. Rowbotham... 1,728 R. Merton Hughes\* 1,421  
\* Accepted.

**BRENTFORD.**—For the extension of their market at Kew Bridge, Brentford—viz., (a) tender for building works, (b) tender for paving works and drainage—for the Brentford Urban District Council. Mr. Nowell Farr, C.E., engineer and surveyor.—  
Paving Works.  
B. Nowell & Co. £2,678 0 0 Lawrence and Mowlem and Co. 2,548 0 0 Thacker, Clapham Common\* £1,994 0 0  
C. Ford... 2,439 0 0  
J. Ball... 2,176 9 11  
\* Accepted.

Surveyor's estimate, £2,250.  
Building Works.  
C. Ford... £1,790 Ford & Son, Brentford (accepted)... £1,450  
Surveyor's estimate, £1,425.

**CARLISLE.**—For the separate works required in erection of additions to Tynesholme, Howard-place, Carlisle, for Mr. F. Robinson. Mr. Charles J. Ferguson, F.S.A., 50, English-street, Carlisle, and 42, Clairville-grove, London, S.W., architect. Accepted tenders:—

T. Creighton, Chapel-street, builder... £925 0  
J. Hodgson, Silloth-street, joiner... 372 0  
Graham & Crawford, Castle-street, plumbers 139 0  
T. Ferguson & Son, Denton-street, plasterers 140 10  
J. B. Whitfield, Station-road, Workington, slater... 53 0  
R. S. Kirk, Lonsdale-street, painter... 104 7  
Rest of Carlisle.

**HOVE.**—For alterations and additions to Nos. 9 and 11, Brunswick-place, Hove (Conversion into Shops). Mr. G. M. Nye, architect, Hove, Brighton.  
J. J. G. Saunders and J. Parsons and Sons... £5,030  
Sons... £5,100 A. Cresswell\*... 4,650  
\* Accepted.

**LONDON.**—For alterations, &c., to 19, High-street, Marylebone. Mr. W. W. Gwyther, architect:—  
J. W. Heaps (accepted)... £2,440

**LONDON.**—For works to offices at Station-road School, Highbury, for the London School Board:—  
Ashby Bros... £1,924 0 F. Gough and Co... £1,401 11  
McCormick & Sons, 1,800 0 Ashby and Horner 1,336 0  
F. Britton... 1,600 0 C. W. Killingback... 1,242 0  
G. Goodson & Sons 1,584 0 and Co... 1,242 0  
Rice and Son... 1,437 0 Martin, Wells & Co.\* 1,229 0  
\* Recommended for acceptance.

**LONDON.**—For new drainage, alterations to offices inside the building, refitting offices outside, replacing slate sinks with glazed fireclay, and alterations to washing lavatories, &c., at Upton House School, for the London School Board:—  
W. Johnson and Co., Limited... £3,228 Martin, Wells, and Co. £2,999  
F. and F. J. Wood... 3,118 Co... 2,877  
E. Lawrence & Sons... 3,097 F. Britton\*... 2,813  
Lathey Bros... 3,042  
\* Recommended for acceptance.

**LONDON, N.**—For sanitary and drainage works at St. John's-road School, Hoxton, for the London School Board:—  
J. Wilmott & Sons £2,076 0 0 Marchant & Hirst £1,927 0 0  
E. Lawrence & Sons 2,064 0 0 Ashby and Horner 1,911 0 0  
G. Foxley... 2,045 0 0 Stevens Bros.\* 1,864 0 0  
R. P. Beattie... 2,014 16 2  
\* Recommended for acceptance.

**LONDON.**—For inclosing a portion of the site of the Southern Hospital with oak park pale fencing and gates, for the Metropolitan Asylum Board:—  
F. Beadle... £2,690 Taylor and Brooker... £2,550  
J. Longley and Sons... 2,580 J. Stenning and Son... 2,534  
A. Turner and Son... 2,575 J. S. Agate... 2,515  
Rowland Bros... 2,570 R. Batcheller... 2,512  
Mulford Bros... 2,560 M. Marshall... 2,503  
B. Horton and Son (informal)... 2,552 E. C. White, Basingstoke (accepted)... 2,494  
Architect's approximate estimate, £2,100.

**LONDON.**—For special school for 60 children and manual training centre on arches at St. Dunstan's road, for the London School Board:—  
J. G. Cowell... £6,188 W. Johnson and Co., Limited... £4,952  
O. Craske... 5,161 Lathey Bros... 4,690  
Leslie & Co., Limited 5,119 McCormick & Sons... 4,554  
J. Carmichael... 5,034 E. Triggs\*... 4,495  
C. Wall... 5,025  
\* Recommended for acceptance.

**LONDON.**—For alterations to Nos. 67, 69, and 71, Southampton-row, W.C., for Messrs. Walter Hill and Co. Mr. W. H. Pertwee, architect, Clifford's Inn, E.C. Quantities by Mr. Joseph Rookwood, 47, Museum-street, Bloomsbury, W.C.:—  
Kilby and Gayford... £2,821 Snewin Bros... £2,583  
Steven Bros... 2,656 F. T. Chinchin... 2,496  
Harris and Wardrop... 2,597  
Caledonia Market, Islington, for Mr. J. Bambridge. Mr. C. Wisner, architect, Wellesley-road, Leytonstone:—  
Salt... £1,989 Britten... £1,812  
Todd... 1,976 Rowe... 1,799  
Easton... 1,855 Holmes & Annesley\* 1,672  
\* Accepted.

**RICHMOND (Surrey).**—For erection of seventy workmen's dwellings at Manor-grove. Mr. J. H. Brierley, A.M.I.C.E., borough surveyor:—  
J. Christie, 2, Richmond-road, Uxbridge-road... £19,600 0  
Speechley and Smith, Richmond... 18,793 0  
C. R. Gurr, 30, Cranbrook-road, Chiswick, W. 17,971 0  
Sooile and Son, Richmond (accepted)... 17,624 3

**UXBRIDGE.**—For drainage works (Contracts Nos. 4 and 5), for the Rural District Council. Mr. J. Anstie, C.E., 10, Marchwood-crescent, Ealing, engineer. Quantities by the engineer:—  
Contract No. 4.  
A. Kellett... £2,296 13 4 C. Ford, Harles-Kitteringham... 1,791 0 0 den (accepted) £1,415 0 0  
Contract No. 5.  
A. Kellett... £2,937 12 9 Kittingham, C. Ford... 2,377 10 0 Waltham\*... £2,070 0 0  
\* Accepted.

**VENTNOR.**—For installation of electric light, for Committee of Royal National Hospital. Mr. Theodore Saunders, F.R.I.B.A., architect:—  
W. J. Fryer and Co., Sloane-square... £1,297  
**WEST HAM.**—For alterations at South Hallsville-road, and partitions at Colegrave-road, for the West Ham School Board:—  
Alterations.  
G. J. Hosking... £2,945 0 W. J. Maddison... £2,646 0  
Reed and Son... 2,929 0 Welsh and Son... 2,377 0  
J. Noakes... 2,875 15  
Partitions.  
Hosking... £325 0 G. W. Smith... £260 0  
Reed... 317 0 Maddison... 256 0  
Gregar and Son... 294 0 Walsh... 190 0  
Noakes... 285 10

Note.—Referred to committee.  
**WESTON-SUPER-MARE.**—For the pulling down and re-building of 3, High-street, for Mr. J. Greenland. Messrs. S. J. Wilde and Fry, Boulevard-chambers, Weston-super-Mare, architects:—  
T. Allen... £1,150 Taylor and Son... £1,049  
H. A. Forre... 1,150 Keen and Keen, Locking-road (accepted)... 978  
W. M. Dublin... 1,100

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Tenders, sealed and endorsed, "Tender for Painting Works," must be sent to the undersigned not later than TWO o'clock on FRIDAY, APRIL 14th, and all parties tendering, or their authorised representatives, must attend at the Board-room at FOUR p.m. on the same day, when the Tenders will be opened.

The Guardians do not bind themselves to accept the lowest or any Tender, nor to pay any expenses incurred in the preparation of the estimates.

By order,

J. R. BROWNE,

Clerk.

Guardian Offices,  
Raine-street,  
Old Gravel-lane, E.

March 28th, 1899.

## BOARD of WORKS for the STRAND DISTRICT.

TO MASONS, PAVIORS AND OTHERS.

The Board will meet at No. 5, Tavistock-street, Covent Garden, W.C., on WEDNESDAY, APRIL 12th, 1899, at half-past six p.m., to receive TENDERS for the SUPPLY of YORKSHIRE, and other PAVINGS, GRANITE KERB CHANNELS, and DRESSED GRANITE, &c.; also for RELAYING AND REPAIRING the CARRIAGEWAYS and FOOTWAYS within the Strand District for a period to expire at Lady Day, 1902.

Printed forms with conditions of Tender, may be obtained No. 5, Tavistock-street aforesaid, between the hours of TEN and FOUR daily, where Tenders must be delivered (sealed), marked outside "Tender for Paving, &c.," and addressed to the Clerk, before TWO o'clock p.m. on the above day of meeting.

The contractor whose Tender is accepted will be required to produce testimonials as to character, and to enter into a contract and find two responsible sureties to execute a joint and several bond for the due performance thereof.

The Board does not bind itself to accept the lowest or any Tender.

By order,

FRANCIS S. ROBINSON,

Clerk to the Board.

No. 5, Tavistock-street, Covent Garden, W.C.

March 28th, 1899.

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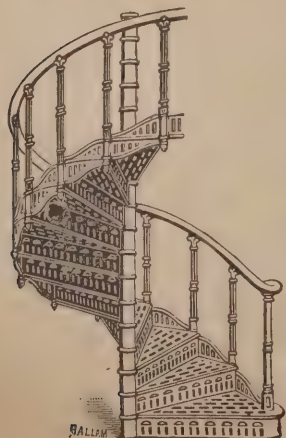
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DWELLING ACCOMMODATION IN  
LARGE CITIES.

By JOHN F. J. SYKES.

ALTHOUGH it must be granted that the evolution of the human dwelling regarded as a structure is of primary importance, yet from the point of view of the dwelling accommodation required by modern civilised beings, it may be profitable to review the subject from a social as well as a structural aspect, since usage and sanitary precautions must form the basis of structural accommodation.

With this idea in view, the functions and requirements to be provided for the individual in the modern dwelling must be first called to mind. These are in approximate order of greatest necessity: (1) sleeping, (2) food-storage, (3) cooking, (4) warming, (5) excretion, (6) ablution, (7) clothes washing, (8) deposit of refuse, (9) open space for drying clothes, &c., (10) bathing, that is not partial but total ablution of the body, (11) living, including reading, writing, work, recreation, &c., for brevity called living. The list might be continued to a considerable extent, but that some limit must be placed by restricting it to what is more necessary rather than to what would be most desired.

In the next place it is advisable to picture the possibilities, whether desirable or not, of the case of a single individual living in one room. Diogenes was contented in a tub, but such a dwelling would be promptly represented as unfit for human habitation. Nevertheless, many single persons live in one room, so let us glance at the interior of such a dwelling, the purposes it subserves, the provision made for these purposes, and the provision that would be required if separate rooms or places were provided for these purposes. In order to make this aspect clear, let us throw this into tabular form in the simplest manner.

Too strong an emphasis, cannot, therefore, be laid upon the great fact that above all things in providing dwelling accommodation healthy family life must be most encouraged and bettered, and that no amount of collective accommodation for men only or women only will touch this great question.

It is at once apparent that the differences of sex and age are the factors that render family life impossible in a single room, and that in the erection of dwellings for families single-roomed dwellings are out of consideration. We must, therefore, start with the two-roomed dwelling, the very minimum family accommodation possible, and it must be recognised that family life entirely carried on in two rooms cannot be regarded as the standard of "home" in which the bulk of the young population of the nation should be reared and trained as future citizens, however humble their walk in life.

As both of these rooms may sooner or later require to be used as bedrooms we must further consider how the second room may have removed from it such provision as may be made elsewhere. If we refer to the tabular statement we shall see at a glance that food storage, cooking and warming, ablution, and clothes washing, may be so removed to a combined kitchen, larder, scullery, and washhouse, and so we reach a three-roomed, self-contained dwelling. The possibility of installing a food cupboard, a cooking range, a draw-tap and sink, and a washing copper in the same room must be admitted.

The combination of kitchen, larder, scullery, and washhouse has this great disadvantage, that the room being applied to so many purposes it cannot well be used for any other. The separation of this into two rooms, a scullery and a kitchen, enables the kitchen to be freed from the other purposes and to be usable as a living-room, this in turn dispensing with a bedroom being so used, as must of necessity otherwise be the case. Here then we reach the four-roomed self-contained family dwelling.

During the twenty years 1871 to 1891 there was a continuous and increasing diminution in the proportion of persons living in dwellings of one room, and of five rooms and upwards, to the total number of persons living in all dwellings, this being especially marked in the case of the one-room dwellings. On the other hand, there was a steady increase in the proportion of persons living in two, three, and four-room dwellings during the twenty years; the persons living in four-room dwellings, as well as those in three-room dwellings, showing a continuous and increasing proportion, the greatest gain of all being ultimately in the three-room dwellings. But the remarkable point is that, whereas in the decennium 1871-81 the proportion of persons living in two-room dwellings increased 3·2 per cent., and the proportion in three-room 2·8, in the decennium 1881-91 the proportion in two-room dwellings only increased 2·8, whereas the proportion in three rooms rose 3·7 per cent.

Above all towers the notable fact that the proportion of persons living in one room dwellings fell between 1871 and 1891 from 30·4 to 18·0 per cent. of the total number of the population, and it is significant that the increase of proportion appears to be converging towards the three and four-roomed dwelling.

Unfortunately no such valuable comparative figures are available for England and Wales, or any English towns, Dr. J. B. Russell's method having only been adopted at the last census in 1891. At that census the table on the next page shows the percentage of population living in tenements of one, two, three, and four rooms in the whole of England and Wales, in the rural districts, in the urban districts, in St. Luke's, one of the most crowded, and in Lewisham, one of the least crowded districts in London.

Comparing the St. Luke's figures with those of Glasgow in 1891, the former had about the same proportion of population housed in three rooms, and a slightly larger proportion in four rooms, a very much larger proportion in five rooms and over, and a much smaller proportion in two rooms, but a somewhat larger proportion in one room.

Comparing Lewisham with St. Luke's, the great difference is that in Lewisham 53·8 per cent. less of the population live in one and two rooms, and 56·8 per cent. more in five or more rooms than in St. Luke's. This, no doubt, is due to the difference between the classes inhabiting a semi-rural and choice residential suburban area, as compared with a crowded central area in a large city.

The normal proportion of urban population living in several roomed dwellings it would be extremely difficult to estimate, dependent as it must be upon the size of the rooms, and the number of rooms in the houses. This applies particularly to the one-roomed and the five or more roomed tenements, since common lodging - houses, homes, boarding - houses, hotels, clubs, and other houses in which more or less associated life is led, must largely diminish the proportion of persons living in one-roomed and correspondingly increase the proportion in five or more roomed dwellings, but amongst the bulk of the population would have less effect upon the proportion living in two, three, or four rooms, that is, humble family life.

To revert again to our ideal self-contained large family dwelling of four rooms, namely, two bedrooms, a kitchen and living room, a scullery, washhouse and larder, and a w.c., with yard or balcony, is it possible to reduce the number of rooms to economise upon the rent? It is plain that if the family is very small, one bedroom may suffice, and the

Purposes.	Provision in a Single Room.	Provision in Separate Places.
1. Living .....	Table and chairs .....	Parlour.
2. Sleeping .....	Bed .....	Bed-room.
3. Food Storage .....	Cupboard (ventilated into open air).....	Larder.
4. } Cooking and }	Range.....	Kitchen.
5. } Warming }	Draw-tap and sink .....	Scullery.
9. Ablution .....	Wash-tub .....	Washhouse with Copper.
7. Clothes washing .....	Bath or tub .....	Bath-room.
8. Bathing .....	Pail .....	Bin.
9. Deposit of Refuse .....	Window cill .....	Yard or Balcony.
10. Open Space (for drying clothes, storing refuse, &c.).....	W.C. ....	W.C.
11. Excretion.....		

(The last must in any case be separately provided for.)

It will be at once apparent that it is possible to cram all these purposes and appliances into a single room *except the last*, and it is much to be regretted that in our cities and large towns endless illustrations of this condition are to be found, under which not only individuals but whole families exist, for they can scarcely be said to live in the true sense of living.

These are nothing but mere truisms; nevertheless, something is gained in setting out in detail what we have to deal with, and being able thus to picture the position. It enables us from this basis to proceed step by step to what we are aiming at—namely, to form some idea of the provision necessary to be made for those who cannot and know not how to provide for themselves.

Existence in a single room for a single man or a single woman may be possible, but for families whose children will become future citizens and form the bulk of the nation it is utterly impossible without degradation and decadence. From a social and national point of view, therefore, the celibat whose existence terminates with life becomes of infinitely little consideration beside the families that carry on the nation from generation to generation.

In this direction happily it is that progress is being made, and in proof of this some figures of Dr. J. B. Russell, the well-known Medical Officer of Health of the City of Glasgow, who has done so much good work in this direction, may here be quoted. In a digest of the "Census, 1891, Glasgow," he records the percentage proportion of the population living in dwellings of one, two, three, four, and five, or more rooms in that City, at successive census periods; to these I have added columns showing the percentage increase or decrease, and the results as set out in the following table are of extreme interest:—

Dwellings of.	Census, 1871.	Difference 1871—81.	Census, 1881.	Difference 1881—91.	Census, 1891.	Difference 1871—91.
1 Room .....	30·4	— 5·7	24·7	— 6·7	18·0	— 12·4
2 Rooms .....	41·5	+ 3·2	44·7	+ 2·8	47·5	+ 6·0
3 " .....	13·2	+ 2·8	16·0	+ 3·7	19·7	+ 6·5
4 " .....	5·8	+ 0·3	6·1	+ 1·1	7·2	+ 1·4
5 " and upwards .....	9·1	— 0·6	8·5	— 0·9	7·6	— 1·5
	100·0		100·0		100·0	



number of rooms be reduced to three, constituting what may be regarded as our ideal self-contained small family dwelling.

Now comes the question—can any further reduction be made and how? At some sacrifice of family life and independence in the construction of buildings containing numerous dwellings another room may be lopped off by setting the larder in the kitchen wall opening to the air, and constructing a scullery and washhouse for the common use of several families, and where this form of construction is adopted the w.c.'s are treated in a similar manner. In some cases the scullery is also separated from the washhouse, the scullery being placed close to the dwellings and the washhouses collected together at a distance. This class of dwellings may be better known as associated dwellings in contra-distinction to self-contained dwellings. It is important that

Dwellings of.	England and Wales.	Rural Districts.	Urban Districts.	St. Luke.	Lewisham.
1 Room ... ..	2.2	0.44	2.89	21.8	5.2
2 Rooms ... ..	8.3	5.65	9.38	29.9	6.7
3   "   ... ..	11.1	10.06	11.54	19.1	9.1
4   "   ... ..	23.5	26.26	22.42	9.3	11.0
5   "   or more ... ..	54.9	57.59	53.77	19.9	68.0
	100.0	100.0	100.0	100.0	100.0

the water-tap and the w.c. should be as nearly accessible to the dwellings they serve as possible, in every case on the same floor of the building, and that such provision should be made for every twelve occupants or less. It is almost unnecessary to add that the water supply and drainage should strictly conform with official regulations, for in buildings where the number of occupants is multiplied the danger incident to defects is proportionately increased.

We have now reached a point at which it becomes apparent that in providing family dwellings we may differentiate between two classes of houses constructed in separate dwellings or common-stair dwelling-houses, the one consisting of three and four room self-contained family dwellings, the other of two and three-room associated family dwellings. I venture to think that wading through these details is amply repaid by the clearer conception we obtain of the conditions to be provided for in new dwelling-houses in crowded cities.

1. Single or widowed individuals of the same sex (a) living and sleeping in common, or (b) living an associated life in one dwelling-house.

2. Families living in associated dwellings in one building, partly a family life, partly an associated life.

3. Families living a truer family life in self-contained dwellings in a common-stair house.

Some points with regard to perfiation and ventilation must not be overlooked here Dr. Arthur Newsholme some years ago, in a paper read before the Royal Statistical Society, showed that in London houses constructed in separate dwellings, or common-stair dwelling-houses, appeared statistically not to have any particular influence upon health except in this respect, that they produced a greater prevalence of those forms of infectious diseases for which there is no hospital provision, such as measles, whooping-cough, &c. The lesson to be learnt from these statistical researches is that the staircases and passages of such houses must be so constructed as to be fully and permanently open to outer air. This necessity is the more obvious when it is pictured that the separate dwellings all open on to the common stair and passages, and that the dwelling rooms of each dwelling are also all in direct aerial communication with each other and are not separated by a ventilated staircase-well, as in the older type of house.

The statistical researches of Dr. Tatham, Superintendent of Statistics at Somerset House, when Medical Officer of Health for Manchester, into the mortality and morbidity of back-to-back houses, furthermore point to

the necessity for having through ventilation to each dwelling; that is, that a back-to-back type must not be adopted, but that one or more of the rooms must be situated on the opposite front of the building to the other room or rooms, so as to allow of thorough perfiation when windows and doors are opened.

In this connection it need scarcely be added that no w.c. should have direct aerial communication with any room of a dwelling, and especially where the rooms are in direct aerial communication with each other, and, furthermore, that every dwelling should have close access to a modicum of open space in the form of a yard or balcony wherein to place refuse or any objectionable matters, and for other purposes. In planning this open space may be made the means of cutting off the w.c. from aerial communication with the dwelling.

As to open spaces at the front and rear of

the building it is now accepted that these should be as wide, and may be as wide again, as the height of the house.

It may be convenient to add at this stage that although occasionally large tubs and baths may be seen in use in the class of dwellings under consideration, the inconvenience of restricted dwelling space militates against them. The erection of baths in corridors and spare corners has not met with successful application, and the only provision that appears to succeed in large blocks of separate dwellings is the erection of a separate building fitted with baths and furnished with hot and cold water under the care of an attendant. To this building also may be conveniently added another containing the washhouses of associated dwellings.

Now we come to the question of cubic space, and this divides itself into (1) the cubic capacity or size of dwelling-rooms, and (2) the cubic space per head.

Although it has been necessary for the purpose of lucid description to regard a scullery and washhouse as a room, it is not a fit place for living or sleeping in, and cannot be included in the term dwelling-room.

One of the principal points governing the size of dwelling-rooms is the means of ventilation, and the smaller a room the greater the difficulty of ventilating it, so that restriction must be placed upon the reduction of size in new buildings. The standard height now generally adopted is 9ft., and the minimum area 96 square feet, say 12ft. by 8ft., or 11ft. by 9ft., or 10ft. by 10ft., a cubic capacity of something under 900 cubic feet.

The cubic space per head is the most difficult point of all to deal with in practice, and must be regarded sanitarily as the most important.

In 1851 the Common Lodging Houses Act was passed, which placed the control of common lodging houses in the hands of the police with power to make bye-laws. At this period there was no doubt some difficulty in fixing the minimum amount of cubic space per head to be enforced, and it appears to have been fixed successively at 240, 260, 280, and 300 cubic feet, at which point it stands at present. It would be interesting to know how this amount was reached, and it is a curious coincidence that if we measure a bedstead 6ft. long with a 2ft. gangway at the bottom, and 2½ft. wide with a 1½ft. gangway at the side, we arrive at an area of 8ft. by 4ft., the minimum amount of floor space in which it is possible to put an approachable bedstead, and if this be multiplied by 7½ft., the minimum height probably adopted at that period, since cellar dwellings of a less height than 7ft. were illegal, we arrive at a cubic space of 240 cubic

feet, and it requires but the addition of a few inches to each dimension to raise this space to 260, 280, and 300 cubic feet. It is highly probable, therefore, that this minimum was a purely mechanical calculation in packing, the requirement of the human subject being overlooked.

Three hundred cubic feet still remains the minimum standard of cubic space for sleeping rooms. It is true that a recent Factory and Workshop Act only provides for 250 cubic feet per head, but a person awake has more control over the condition of the air breathed than a person asleep for, perhaps, eight hours at a stretch. The Local Government Board's Model Bye-laws provide for 400 cubic feet in tenement rooms, used both for living and sleeping, and the 300 is recommended to be increased in the dormitories of common lodging-houses that may require it.

Many years ago the late Dr. Edmund Parkes showed that, calculated on a physiological basis, the human adult required 10,008 cubic feet of space, because, in order to maintain the air in a sufficient state of average purity in a dwelling-room, it was necessary to supply 3000 cubic feet of air per hour, and the air in this climate could not be changed more often than three times per hour.

We are continually bemoaning the large death-toll of consumption, or tubercular phthisis, essentially a disease spread by crowding, and the medical profession is now strongly advocating the cure and mitigation of the disease by fresh air treatment. Is it out of place to advocate even more strenuously the prevention of the disease by fresh air, by the provision of more cubic space, and especially by raising the present inadequate minimum standard?

The adoption of the maximum as a working standard is scarcely practical, but it is practicable to advance the minimum standard to 400 cubic feet at the very least in all cases, and if the lauded fresh air treatment means anything, it means a decided step in this direction.

A standard of two persons per room is adopted in schemes for re-housing, and in census returns for measuring overcrowding. With regard to the latter, it gives no idea of the amount of cubic space per head, inasmuch as the sizes of the rooms are not known. In reference to the former, to design dwellings allowing five, six, or seven hundred cubic feet per head, without providing any means of preventing this allowance to be reduced, is practically futile.

The matter of cubic space is above all important in re-housing under the Housing of the Working Classes Act, 1890, and the granting of certificates of suitable accommodation and sanitation under the Customs and Inland Revenue Acts, 1890 and 1891, which practically means the building of new dwellings for the working classes in large towns. To erect and certify buildings is one thing, to prevent them from being used other than in the manner intended is quite another thing; and we are living in a fool's paradise if we think that we are going to succeed in providing the working classes with more breathing space without having the means of preventing it being compressed to its original proportions. The pressure of population inevitably tends to squeeze the people closer and closer together, and the only check to this disease-producing pressure is a minimum limit imposed by law and vigilantly enforced by inspection. If we raise the standard of construction in the matter of cubic space and do not also increase the minimum limit to prevent crowding, pressure of population will in time inevitably reduce the condition of new dwellings to that of old, and the vast expenditure of time and money throughout this country will have been in vain. I plead for this increase.

The New Schools, Arlecdon, Cumberland, are being warmed and ventilated by means of Shoreland's patent Manchester grates, patent exhaust roof ventilators and inlet tubes, supplied by Messrs. E. H. Shoreland and Brother, of Manchester.



## Masters and Men.

**Bradford painters** have gained  $\frac{1}{2}$ d. per hour advance, and double pay for night work.

**Elgin quarrymen** have gone out on strike; they want an increase of pay and shorter hours.

**Barnstaple Bricklayers** struck last Saturday week for 6d. per hour. The masters have offered 5 $\frac{1}{2}$ d.

**Dumfries Masons' Strike.**—About eighty men have left the town, having obtained situations at a higher rate of pay than the 9d. per hour for which they were asking.

**The Painters at Carnarvon** are striking for 7d. per hour. The masters have met and have offered to increase the wages of the men from 5d. per hour to 6 $\frac{1}{2}$ d., but this has been refused.

In view of a general lock-out of all trades, the National Association of Master Builders have decided to approach the National Association of Slate Merchants and Slaters, to ascertain how far they are willing to co-operate with and assist them to suppress what they regard as the tyranny practised by the operatives.

**Engineers on the N.E. Coast.**—The representatives of the engineers belonging to the Amalgamated Society employed in the shipbuilding yards of the North-East Coast, had an interview with the members of the Employers' Association at their offices in Clayton Street, Newcastle, at which they asked for an advance of 7 $\frac{1}{2}$  per cent. on piece and 2s. on time wages. The interview lasted an hour and a half without any definite result being arrived at, and the proceedings were therefore adjourned.

**The Plasterers' Dispute.**—At a meeting of the Yorkshire Federation of Building Trades' employers approbation was expressed of the attempt to suppress what was called the constant tyranny practised by trade unionists throughout the country. On Monday last week, Mr. Deller issued a circular addressed to the Trade Unionists of the United Kingdom appealing for financial assistance to help the Union to carry on the struggle with the Master Builders' Association. After detailing the events which led up to the lock-out, order being enforced, Mr. Deller says:—"We are fighting the cause of Trades Unionism throughout the length and breadth of the land. Our fight is your fight. If we are beaten, your turn will surely come. We, therefore, appeal to you, as fellow trades unionists, to render us all the aid in your power, both morally and financially. At the present time only about 25 per cent. of our members are affected. We anticipate that the struggle will be a long one, but win we will if we can obtain from you that for which we ask. Without any aid whatever we shall continue so long as our funds eke out, and if we fail it will only be for lack of support outside our ranks. We make a special appeal to those connected with the building industries, to aid us not only financially, but by refusing in all cases to do that which, were there no lock-out, we would be doing." The movement of the locked-out men in Leeds to establish a co-operative plasterers' society has been successful; the whole of the necessary capital has been subscribed, and the new society has been registered. The men have secured a contract upon which they will soon commence working. It is stated that at the next meeting of the Standing Committee of the National Association of Master Builders some of the members intend to urge upon the committee the desirability of extending the lock-out order to other branches of the building trade. Several of the largest firms are of opinion that if they

are to win the struggle with the plasterers, the lock-out order will have to be applied to the other sections of the trade. This has become necessary in view of the fact that the lock-out of plasterers has so far resulted in only about twenty-five per cent. of the union men being affected. At a special meeting of the Council of the National Association of Master Builders, held in Manchester on March 29th, a letter was read from the secretary of the operative plasterers stating that the Union was still willing to meet the employers. This letter was received in a conciliatory spirit, and a reply sent to the effect that the masters would be willing that twelve of their body should meet a similar number of the men's representatives in London on April 6th.

**A Compensation Appeal.**—Lords Justices A. L. Smith, Collins, and Romer, on March 26th, heard the case, under the Workmen's Compensation Act, of Hoddinott v. Newton, Chambers, and Co., Limited, the masters' appeal from an award of the County Court judge of Wandsworth. The claimant was the widow of a deceased workman, who was at the time of his death in the employment of the appellants, who are builders. It appeared that a stable had been built for the London General Omnibus Company about six months before the time of the accident, and was occupied by the company. The appellants were employed by the company to put in stays fastening together the columns and girders of the stable. For that purpose three planks were placed on two trestles about 8ft. from the ground, and the workman stood on the planks while at work. At the time of the accident the deceased man was standing on the planks engaged in assisting to raise up one of the iron stays, when he overbalanced himself and fell off, and was killed. Two questions were raised—(1) Whether the building was over 30ft. in height, and (2) whether it was being "constructed or repaired by means of a scaffolding" within section 7, sub-section 1, of the Workmen's Compensation Act, 1897. The height from the ground to the parapet of the building was 28ft., and from the ground to the top of the roof the height was 35ft. The contention on the part of the employers was that, inasmuch as nothing was being done to the roof, the height of the building must be taken, as in section 5 of the London Building Act 1894 from the ground to the top of the parapet. It was also contended on their behalf that the building, if over 30ft. in height, was not being "constructed or repaired by means of a scaffolding," the work consisting of alterations to the building, and not repairs, and the arrangement of planks and trestles not being a "scaffolding." The County Court Judge decided both the questions in favour of the claimant, and awarded her £245 14s. as compensation. It appeared that the claimant had brought an action under the Employers' Liability Act, 1880, to recover damages, alleging that the planks and trestles were defective; but the County Court judge gave judgment for the employers in this action, and then, upon the application of the claimant, the Judge proceeded, under Section 1, Sub-section 4, of the Act of 1897, to settle the question of compensation under that Act. The judge, as above stated, awarded the claimant £245 14s. as compensation, but deducted from this sum the costs of the witnesses called by the employers in the action under the Employers' Liability Act, 1880. The employers appealed. Lord Justice A. L. Smith, in giving judgment, said the workman claimed compensation for injury he received while engaged in fixing some "stiffening irons" inside a stable that had just been finished by another firm of contractors, which the General Omnibus Company, for whom the stables were built, considered vibrated too much. The defendants pleaded in the court below, and also in this appeal, that the workman was not engaged on a building 30ft. high being either "constructed or repaired" by the undertaker, and also that the erection he was working on was not a "scaffold." In his opinion the masters' contention was well-founded, and their appeal would be allowed. The other lords justices concurred.

## Surveying and Sanitary Notes.

**Epping Sewage.**—In the House of Commons on March 23rd, in reply to Sir F. Dixon-Hartland, Mr. T. W. Russell (Tyrone, S.) said that the Local Government Board had received complaints on the subject of the sewage at Epping. The Urban District Council applied in November, 1897, for sanction to a loan for works of sewerage and sewage disposal, and also for a provisional order for the compulsory purchase of land for the scheme. This order was confirmed last session, but the District Council state that they have experienced difficulty in acquiring the land, and they are considering a different scheme from that originally contemplated. The Board are communicating with the District Council, urging them to proceed at once in the matter.

**A Blocked Drain.**—At the Greenwich Police Court, at the instance of the Lewisham District Board of Works, the Bungalow Building Company Limited, and their secretary, Mr. C. F. Vernon, of Chancery Lane, were summoned for making default in complying with a notice to abate a nuisance in a drain, at 4, Eastern Road, Brockley. The magistrate, holding that the liability attached to the occupier, and not to the owner, dismissed the charge, with three guineas cost.

## Builders' Notes.

**Dispute between an Architect and a Builder.**—In the Chancery Division before Mr. Justice Cozens-Hardy, on March 27th, Mr. Warburton sued for an interlocutory injunction to restrain the Llandudno Urban District Council from preventing him from carrying out a contract for the erection of large municipal buildings at Llandudno. The plaintiff was the contractor for the works, and had commenced the building operations; but disputes had arisen between him and the defendants' architect, which resulted in the District Council turning the plaintiff off the site. The plaintiff alleged that the architect of the defendants had been very obstructive, and had raised points which he refused to comply with, as he alleged them to be outside the contract.—Mr. Justice Cozens-Hardy dismissed the motion with costs, holding that the plaintiff's remedy was in damages, and not by way of injunction. He did not, however, decide anything on the merits of the case as between the plaintiff and defendants.

**Measurement of Lathwood.**—The Board of Trade have received information (through the Foreign Office) from Her Majesty's Consul at Riga that, in consequence of the frequent litigation which has lately attended the shipping of lathwood from that port, a meeting of Riga exporters was held on the 3rd inst. for the purpose of discussing a scheme designed to check the claims for short measurement which are continually being sent in by English buyers. A resolution was adopted by all the firms represented at the discussion, embodying the following regulations:—(1) A measurer will be appointed, whose duty it will be to control the measurement of the lathwood to be shipped, to see that the said measurement is correct, and to hold himself responsible to the shipper for correct shipment; (2) the measurer will issue a certificate for each parcel of lathwood shipped, stating the exact measure in fathoms, and this certificate will be attested by the British Consul; (3) the exporters bind themselves to buy only from those dealers who allow the shipments to be made under the control and certificate of the sworn measurer; (4) the exporters bind themselves to sell lathwood to Great Britain only on condition that the buyers accept Riga measurement; (5) the exporters bind themselves not to make any



shipment of lathwood save under the control of the sworn measurer and the attestation of the British Consul."

**Paving Accounts.**—Before his Honour Judge Greenhow, at the Leeds County Court, on March 28th, the Leeds Corporation brought an action against Mr. Seth J. Stott to recover the balance of an account due for paving and flagging Brunswick Terrace, Camp Road. The Corporation had, in the ordinary way, made an order for the paving and flagging of the street, and upon the owners making default they themselves carried out the work. The proportion payable by Mr. Stott, as settled by the city engineer, was £68, but he contended that the apportionment was made on a wrong basis, and he according paid the sum of £60, which he admitted to be due. Brunswick Terrace is a street of irregular width, and opposite Mr. Stott's property it is narrower than at other parts, and he contended that the notice served upon him was to pave to the middle of the street in front of his own property only, and that he should pay such proportion of the charges as referred to that portion of the street. The Corporation, on the other hand, submitted that under their Local Acts the whole length of frontage to the street had to be taken into consideration, and that the narrower or wider portions were not to be taken into account in making the proportionment. After considerable legal argu-

ment, his Honour gave a verdict for the Corporation, with costs. He added that he did not know whether the defendant wanted to go further, but if did he would give leave to appeal.

Engineering Notes.

**A new Electric Tramway**, invented by Mr. Murphy, is being tried at Manhattan Beach, New York. It requires neither overhead wire nor underground conduit.

**Barrow Electric Lighting.**—At a meeting of the Town Council it was decided to apply to the Local Government Board for power to borrow a sum not exceeding £15,000, for the purpose of extending electric lighting.

**Electric Light at Cambridge University.**—The adoption of electric light for the Senate House has been recommended after designs and specifications by Mr. T. G. Jackson, R.A., at a cost of £400, exclusive of architect's commission.

**Wireless Telegraphy** has been successfully used between France and England. The station on the English side is situated at the South Foreland Lighthouse, near Dover, and

that on the French side at the Chalet l'Artois, Wimereaux, near Boulogne.

**English Iron Orders for America.**—The sending of orders to America of late has been by no means confined to one particular branch of the iron trade. The cases of the Great Northern Railway engines and the Soudan Railway engines are but types of a very large number of instances in which the impossibility of getting promptly supplied at home has driven customers to the United States. There can be little doubt that the engineers' strike of a few months back is mainly responsible, and that the period during which British works were idle would have been ample for the completion by home firms of orders nearly approaching in bulk the work which has lately gone elsewhere. Apart from the strike period and its effects, there is nothing in the position to the detriment of British trade, and the fact is pointed to that only surplus work is, generally speaking, being sent away. The British factories have now plenty of work, and there seems good reason to hope that, when the leeway resulting from the strike has been made up, little more will be heard of huge orders being sent out of the country. It appears that of all branches of the iron trade the rolling mills feel most keenly the existing overpressure, but naturally there is a serious collateral effect on practically all other branches.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—			
April 7	Forres, Scotland—Dwelling House		J. Forrest, Architect, High-street, Forres.
" 7	Ushaw Moor, near Durham—Premises	Wesleyan Chapel	J. W. Taylor, 31, Westgate-road, Newcastle-upon-Tyne.
" 7	Milnsbridge, near Huddersfield—12 Dwelling Houses		A. Shaw, Architect, Golear.
" 7	Warwick—General Supply Stores	J. W. and W. W. Walker	F. P. Trepass, 8, Jury-street, Warwick.
" 8	Durrus, County Cork—Church		M. A. Hennessy, 74, South Mall, Cork.
" 8	Longford Bridge—Rebuilding Retaining Wall, &c.	County Council	W. H. Radford, County Bridgemaster, County Offices, Preston.
" 8	Blaina, Mon.—Four Cottages		T. Cole, Queen-street, Blaina, Mon.
" 8	Brighouse—Retort House and Coke Tower	Gas Committee	Engineer, Gasworks, Mill-lane, Brighouse.
" 8	Bryn'rfael, near Carnarvon—County School, &c.	Llanberis Local Governing Body	R. L. Jones, 14, Market-street, Carnarvon.
" 8	Cardiff—Arcade	D. Morgan	James and Morgan, Architects, Charles-street-chambers, Cardiff.
" 8	Even Swindon, Wilts.—Methodist Chapel		W. Drew and Sons, Architects, Victoria-street, Swindon.
" 8	Forfar—Cottages	District Committee	D. Ross, Road Surveyor, Kirriemuir.
" 8	Great Yarmouth—Additions to Hotel	C. Ellis	C. G. Baker, Architect, Great Yarmouth.
" 8	Lenborough, Bucks—Farmhouse	Oxford Municipal Charities	W. H. Castle, Town Hall, Oxford.
" 8	Mark, Somerset—Clyse	Lower Brue Drainage District Board	O. Urch, Expenditor, Mark, Highbridge, Somerset.
" 10	Cornelly, near Pyle, Wales—Villa	Mrs. Jenkins	P. J. Thomas, Architect, Bridgend.
" 10	London, N.W.—Two Underground Conveniences	St. Pancras Vestry	W. N. Blair, Engineer, Vestry Hall, Pancras-road, N.W.
" 10	London, N.—Public Library Buildings	Hornsey Urban District Council	E. J. Lovegrove, Surveyor, Southwood-lane, Highgate, N.
" 10	Blaenau Festiniog, Wales—Alterations to Chapel, &c.		D. Edwards, 13, Tanymanod-terrace, Blaenau Festiniog.
" 10	Derby—Electric Lighting Station Extension	Corporation	A. Eaton, 6, St. James's-street, Derby.
" 10	Horsham—Additions to Hotel		C. H. Burstow, 6, West-street, Horsham.
" 10	Kendal—Converting Chapel into Schools		S. Shaw, 45, Highgate, Kendal.
" 10	Keighley—Foundry	G. Wilkinson and Sons	W. H. and A. Sugden, Architects, Keighley.
" 10	Leadgate, Durham—Conveniences, &c.	Urban District Council	T. S. Longstaff, Surveyor, Leadgate.
" 10	Lowestoft—Laundry	Union Guardians	A. Clarke, 126, London-road, Lowestoft.
" 10	Pity Me, Durham—Dwelling House, &c.	J. Thurkettle	G. Ord, 16, The Avenue, Durham.
" 10	Workington—Two Dwelling Houses	A. E. Turner	W. G. Scott and Co., Architects, Victoria-buildings, Workington.
" 11	Cardiff—Boundary Wall, &c.	Corporation	W. Harpur, Borough Engineer, Town Hall, Cardiff.
" 11	Manningham, Bradford—Chapel, Schools, &c.	Westgate Baptist Chapel Trustees	J. Ledingham, Architect, District Bank-chambers, Bradford.
" 11	Durham—Technical School	Governors of Johnson Tech. School	Oliver and Leeson, Bank-chambers, Newcastle-upon-Tyne.
" 11	Helsby, Cheshire—Six Cottages	L.N.W. and G.W. Railway Companies	Joint Engineer, Birkenhead Station.
" 12	Halifax—Sixteen Houses	Industrial Society Limited	W. C. Williams, 29, Southgate, Halifax.
" 12	Sherborne, Dorset—Repairing, &c., Police Stations	Standing Joint Committee	Clerk to Dorset Standing Joint Committee, Sherborne.
" 12	Tivdale, Rowley Regis—Public Mortuary	Urban District Council	D. Wright, Clerk, Council Offices, Lawrence-lane, Old Hill, Staffordshire.
" 13	Ipswich—Addition to Workhouse	Board of Guardians	H. Cockrell, New Workhouse, Ipswich.
" 13	Mullion, Cornwall—Board School, &c.	School Board	Willow Cottage, Mullion.
" 13	Gateshead—Rebuilding Public House	R. Newton	A. G. Kyle, 145, Pilgrim-street, Newcastle.
" 14	Botcherby, Carlisle—School, &c.	St. Cuthbert Without Board School	A. W. Johnston, 81, Castle-street, Carlisle.
" 15	Treharris, Mon.—Baptist Chapel		Homeleigh House, 37, Perrott-street, Treharris.
" 15	Halifax—Dwelling-house, &c.		C. F. L. Horstall & Son, Architects, Lord-street-chambers, Halifax.
" 17	Mansfield—Additions to Hospital		R. F. Vallance, Borough Surveyor, Mansfield.
" 17	London, E.C.—Buoy Store, &c.	Corporation of Trinity House	Secretary, Trinity House, London, E.C.
" 18	Cardiff—Stable	Great Western Railway Co.	Engineer, G.W.R. Station, Newport.
" 18	London, S.W.—Two Bath Turrets at Infirmary	Chelsea Guardians	Lansdell and Harrison, 33, Bow-lane, E.C.
" 19	Johnstown, Ruabon—School and Master's Residence	School Board	J. Morison and Son, Architects, King-street, Wrexham.
" 20	Newcastle-upon-Tyne—Iron Arched Roof	Finance Committee	Property Office, Town Hall, Newcastle.
" 22	Bexhill, Sussex—Three Cottages	East Sussex County Council	F. J. Wood, County Surveyor, County Hall, Lewes.
May 1	Breamore, Hants—Bridge Works	County Council	W. J. Taylor, County Surveyor, The Castle, Winchester.
ENGINEERING—			
April 7	Pudsey, Yorks.—Sewage Tanks	Urban District Council	J. Jones, Surveyor, Council Offices, Pudsey.
" 8	Brighouse—Wrought-iron Roofs	Gas Committee	Engineer, Gasworks, Mill-lane, Brighouse.
" 8	Leeds—Electric Lighting	Markets Committee	W. Hanstock and Son, Architects, Branch-road, Batley.
" 8	Edinburgh—Railway Ballast Waggon	Gas Commissioners	W. R. Herring, Chief Engineer, Gasworks, New-st. Edinburgh
" 8	Wolverhampton—Steelwork	Lighting Committee	J. W. Bradley, Surveyor, Town Hall, Wolverhampton.
" 10	Briton Ferry, Glamorgan—Removal of Lock	Neath Harbour Commissioners	Harbour Offices, Briton Ferry, Glamorgan.
" 10	Edinburgh—Two Steel Boilers	Gas Commissioners	W. R. Herring, Chief Engineer, Gasworks, New-st. Edinburgh.
" 10	Winchester—Sinking Well	Rural District Council	F. Fathul, Clerk, 2, St. James's-street, Winchester.
" 10	Edinburgh—Electric Light	Lord Provost, Magistrate and Council	Resident Electrical Engineer, 5, Dewar-place, Edinburgh.
" 11	Dover—Hopper Barge	Town Council	H. E. Stilgoe, Borough Engineer, Town Hall, Dover.
" 12	Welshpool—Filters, &c.	Corporation	C. H. Beloe, F. E. Priest, 13, Harrington-st., Liverpool.
" 12	Greenwich—Sinking Well	Union Guardians	T. Dinwiddy, 12, Croom's-hill, Greenwich, S.E.
" 12	Bochdale—Electric Lighting	Guardians	Crews & Handford, Engineers, Cross-st.-chms. Manchester.
" 13	Burton-upon-Trent—Bridge Ironwork	Corporation	G. T. Lynam, Borough Engineer, Burton-on-Trent.



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—Continued.</b>			
April 13	London, E.C.—Railway Carriages ... ..	Midland Railway Company Limited ...	R. A. Fayrer, Secretary, 48, Copthall-avenue, E.C.
" 13	Leigh-on-Sea—Laying Cast-iron Pipes, &c. ...	Urban District Council ... ..	J. Mansergh, 5, Victoria-street, S.W.
" 13	Greenwich, S.E.—Sinking Well ... ..	Union Guardians ... ..	T. Dinwiddie, 12, Croom's-hill, Greenwich, S.E.
" 14	Peterborough—Footbridge ... ..	Rural District Council ... ..	F. J. Whittaker, 214, Cromwell-road, Peterborough.
" 14	Dudley—Tramway ... ..	British Electric Traction Co., Ltd. ...	W. Howard-Smith, Donington House, Norfolk-st., Strand.
" 15	Egremont, Cheshire—Gasholder Tank, &c. ...	Wallasey Urban District Council ...	J. H. Crowther, Engineer, Great Float, near Birkenhead.
" 15	Tynemouth—Electricity Plant ... ..	Corporation ... ..	Lacey, Clirehugh, and Sillar, 2, Queen Anne's-gate, Westminster.
" 15	Heswall, Cheshire—Sea Defence Wall ... ..	Colony ... ..	C. W. Oats, Dee View-Hoad, Heswall, Chester.
" 17	Cape of Good Hope—Railway ... ..	Town Council ... ..	Agent-General for Cape of Good Hope, 112, Victoria-st., S.W.
" 17	Brighton—Pumping Engines, &c. ... ..	Wallasey Urban District Council ...	F. J. Tillstone, Town Clerk, Town-Hall, Brighton.
" 18	Egremont, Cheshire—Gasholders ... ..	Great Western Railway Company ...	J. H. Crowther, Engineer, Great Float, near Birkenhead.
" 18	Llanhilleth and Aberbeeg—Widening Line ...	North-Eastern Railway Company ...	Engineer, Great Western Railway Station, Newport.
" 19	Seaham Harbour and Hartlepool—Railway ...	Corporation ... ..	W. J. Cudworth, Company's Engineer, Darlington.
" 20	Peterborough—Electric Lighting Plant ... ..	Great Northern Railway Co. (Ireland) ...	J. C. Gill, Engineer, Municipal Offices, Peterborough.
" 20	Sutton and Howth, near Dublin—Electric Tramway ...	County Council ... ..	T. Morrison, Secretary, Amiens-street, Terminus, Dublin.
" 23	Port Louis, Mauritius—Electric Lighting ...	Waterworks Company ... ..	Agent-General for Mauritius, 9, Idol-lane, City.
" 25	London—Alterations at Pumping Station ...	Dublin, Wicklow, & Wexford Rly. Co. ...	Engineer's Department, County Hall, Spring Gardens, S.W.
" 27	Gravesend and Milton—Engines, Pumps, &c. ...	City Council ... ..	J. Mansergh, 5, Victoria-street, S.W.
May 1	New Ross and Waterford—Railways ... ..	Poplar Union ... ..	M. F. Keogh, Secretary, Westland-row Station, Dublin.
" 2	Perth, Western Australia—Electric Lighting Concession ...	Municipal Council ... ..	Agent-Generals for Western Australia, 15, Victoria-st., S.W.
" 17	London, E.—Construction of Wells, &c. ... ..		E. J. W. Stevens, 34, Victoria-street, S.W.
June 30	Shanghai—Tramway Concession ... ..		J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
<b>IRON AND STEEL—</b>			
April 7	Sale—Iron Fencing and Gates, ... ..	Urban District Council ... ..	A. G. M'Beath, 4, School-road, Sale.
" 10	Belfast—Rolled-steel Girder Rails ... ..	Harbour Commissioners ... ..	W. A. Currie, Secretary, Harbour Office, Belfast.
" 11	Christiania—Tools, &c. ... ..	Ofoten State Railways, Narvik ... ..	Commercial Department, Foreign Office, S.W.
" 12	Hull—Ornamental Wrought Iron Gates ... ..	Corporation ... ..	A. E. White, City Engineer, Town Hall, Hull.
" 12	Madras—Cast-iron Pipes ... ..	Municipal Commission ... ..	H. S. King, and Co., 65, Cornhill, London.
" 12	Christiania—Fencing Materials ... ..	Norwegian State Railways ... ..	Commercial Department, Foreign Office, S.W.
" 17	Christiania—Rails, Trolleys, &c. ... ..	Ofoten State Railway, Narvik ... ..	Commercial Department, Foreign Office, S.W.
" 17	London, S.E.—Iron Pails ... ..	St. Mary Magdalen Vestry, Bermondsey ...	F. Ryall, Vestry Clerk, Town Hall, Spa-road, S.E.
" 19	Shrewsbury—Cast-iron Pipes ... ..	Gaslight Company ... ..	W. Belton, Secretary and Manager, Gasworks, Shrewsbury
<b>PAINTING AND PLUMBING—</b>			
April 7	Spezia—Paint Brushes ... ..	Dockyard Authorities ... ..	Commercial Department, Foreign Office, S.W.
" 7	Blairgowrie, Scotland—Painting and Papering ...	War Department ... ..	Messrs. Falconer, Architects, Royal Hotel, Blairgowrie.
" 10	Woolwich—Painting, &c. ... ..	Corporation ... ..	R. E. Office, Mill-lane, Woolwich.
" 10	Folkestone—Paints, Varnishes, &c. ... ..	Corporation ... ..	A. E. Nichols, 29, Dover-road, Folkestone.
" 10	Stafford—Painting Carts, &c. ... ..	Corporation ... ..	W. Blackshaw, Borough Engineer, Borough Hall, Stafford.
<b>ROADS AND CARTAGE—</b>			
April 7	Stamford—Roads, &c. ... ..	Urban Sanitary Authority ... ..	T. J. Ward, Surveyor, Stamford.
" 7	Maidenhead—Street Work ... ..	Town Council ... ..	P. Johns, Borough Surveyor, Guildhall, Maidenhead.
" 7	Mold, Flint, Materials, Cartage, &c. ... ..	Main Road Committee ... ..	R. Lloyd, Inspector of Main Roads, Bryn, Derwen, Mold.
" 8	Rawtenstall, Lancs.—Street Works ... ..	Corporation ... ..	A. W. Lawson, Borough Surveyor, Municipal Offices, Rawtenstall.
" 8	Southport—Granite ... ..	Corporation ... ..	R. P. Hirst, Borough Surveyor, Town Hall, Southport.
" 10	Abergavenny—Limestone ... ..	Rural District Council ... ..	J. Gill, Surveyor, Hereford-road, Abergavenny.
" 10	Fort William, Scotland—Road Repair ... ..	County Council ... ..	— Paterson, District Road Surveyor, Fort William.
" 10	Guildford—Road Works ... ..	Corporation ... ..	C. G. Mason, Borough Surveyor, Tuns Gate.
" 10	London, S.E.—Wood Paving ... ..	Camberwell Vestry ... ..	Surveyor, Vestry Hall, Camberwell, S.E.
" 10	Moss Side, Lancs.—Roadworks ... ..	Urban District Council ... ..	W. R. Aeton, Surveyor, Council Offices, Moss-lane East, Moss Side.
" 10	Newark—Granite and Slag ... ..	Rural District Council ... ..	R. Oakdon, jun., District Surveyor, Kirkgate, Newark.
" 10	Wisbech—Materials ... ..	Rural District Council ... ..	G. Carrick, 13, South-brink, Wisbech.
" 11	Winton, Bournemouth—Street Watering Van and Sweeping Machine ... ..	Urban District Council ... ..	W. T. Streather, Surveyor, Council-chambers, Winton.
" 11	London, W.—Laying Wood Paving ... ..	St. Mary Abbots Vestry, Kensington ...	W. Weaver, Surveyor, Town Hall, Kensington High-st., W.
" 11	Shoeburyness—Making-up Roads ... ..	Urban District Council ... ..	H. Harris, Surveyor, Clarence-street, Southend-on-Sea.
" 11	Staffordshire—Road-Metal, &c. ... ..	County Council ... ..	J. Moncur, Chief Surveyor of Main Roads, County-bldgs., Stafford.
" 12	Gravesend—Granite ... ..	Union Guardians ... ..	Master of Workhouse, Trafalgar-road, Gravesend.
" 12	London, N.—Granite Setts ... ..	Islington Vestry ... ..	J. P. Barber, Vestry Hall, Upper-street, N.
" 12	Southwold—Roads ... ..	Coast Development Co. Ltd. ... ..	H. Miller, 16, Museum-street, Ipswich.
" 12	Wrexham—Street Improvements ... ..	Town Council ... ..	Borough Surveyor, Wrexham.
" 12	Aylesbury—Granite, Flints, &c. ... ..	Urban District Council ... ..	J. H. Bradford, 2, Rickford's-hill, Aylesbury.
" 13	Blackburn—Granite Setts ... ..	Highway Committee ... ..	W. Stubbs, Borough Engineer, Municipal Offices, Blackburn.
" 13	Cuckfield, Sussex—Materials ... ..	Rural District Council ... ..	W. Beach, Surveyor, Perry-mount-road, Haywards' Heath.
" 13	Sunbury-on-Thames—Kerbing ... ..	Urban District Council ... ..	H. F. Coales, Surveyor to Council, Sunbury-on-Thames.
" 15	Tonypandy, Wales—Roadmaking ... ..	Urban District Council ... ..	Rickards and Blossie, Charles-street-chambers, Cardiff.
" 17	London, S.E.—Materials, &c. ... ..	Bermondsey Vestry ... ..	F. Summer, Surveyor, Bermondsey Town Hall, Spa-rd., S.E.
" 18	London, N.—Paving ... ..	Tottenham Urban District Council ...	P. E. Murphy, 712, High-road, Tottenham.
" 18	Gloucester—Stone and Haulage ... ..	Highway Board ... ..	— Weaver, Surveyor, Denmark-road, Gloucester.
<b>SANITARY—</b>			
April 12	Morley—Sewerage Works ... ..	Corporation ... ..	W. E. Putman, Borough Surveyor, Town Hall, Morley.
" 12	Andover—Sewerage Works ... ..	Town Council ... ..	A. Purkess, Borough Surveyor, Andover.
" 8	Linlithgow—Drainage Works ... ..	District Committee ... ..	R. J. Glass, Sanitary Inspector, Linlithgow.
" 11	Halifax—Sewer ... ..	Improvement Committee ... ..	E. R. S. Escott, Borough Engineer, Town Hall, Halifax.
" 12	Benfieldside—Sewer ... ..	Urban District Council ... ..	C. J. Dixon, Surveyor, Bank-buildings, Shotley Bridge.
" 12	Rawtenstall, Lancs.—Sewers, &c. ... ..	Corporation ... ..	A. W. Lawson, Borough Surveyor, Municipal Offices, Rawtenstall.
" 12	Brightlingsea, Essex—Sewerage Works ... ..	Urban District Council ... ..	J. J. Taylor, 1, Victoria-street, Westminster, S.W.
" 12	Westbury-upon-Trym—Sewerage Works ... ..	Barton Regis Rural District Council ...	A. P. J. Cotterill, 7, Baldwin-street, Bristol.
" 20	Bexhill—Sewerage Works ... ..	Urban District Council ... ..	G. Ball, Surveyor, Town Hall, Bexhill.
May 12	Johannesburg—Sewerage Scheme ... ..		Town Engineer, Johannesburg.
<b>TIMBER—</b>			
A 10	Dundalk—Sleepers Blocks ... ..	Great Northern Railway Company (Ireland) ...	T. Morrison, Secretary, Amiens-street Terminus, Dublin.
" 10	London, N.W.—Jarrah Wood Paving Blocks ...	St. Pancras Vestry ... ..	W. N. Blair, Surveyor, Vestry Hall, Pancras-road, N.W.
" 12	Gravesend—Firewood ... ..	Workhouse Guardians ... ..	W. J. King, Clerk, Town Hall, Gravesend.
" 18	London, S.E.—Hard Wood Paving Blocks ...	St. Mary's Vestry, Newington ... ..	L. J. Dunham, Vestry Clerk, Vestry Hall, Walworth-road, S.E.

## COMPETITIONS.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
April 14	Bradford—Cartwright Memorial Hall and Art Gallery ...	£150, £100, £50 ... ..	City Surveyor, Bradford.
" 18	Fleetwood—Schools ... ..	£10 10s. ... ..	Clerk, School Board, Fleetwood.
" 30	Ramsgate—Concert Hall, Reading Room, Lavatories, &c. ...	£50, £20, £10 ... ..	T. G. Taylor, Surveyor, Broad-street, Ramsgate.
April 24	Arbroath—Infectious Diseases Hospital ... ..	£20, £15, £10 ... ..	W. F. Macintosh, Clerk to Arbroath Burgh Commissioners.
May 1	Stockton-on-Tees—Market Hall ... ..	£25, £15, £10 ... ..	Corporation.
June 1	Leeds—Market Hall and Shops ... ..	£150, £100, £50 ... ..	Corporation.
" 3	Harrogate—Kursaal ... ..	£150, £100, £75 ... ..	Corporation.
No date.	St. Thomas, near Exeter—Boys' School ... ..		J. Champion, Clerk to St. Thomas-the-Apostle School Board, St. Thomas, near Exeter.



Property and Land Sales.

To Builders, Contractors, and others.  
**MESSRS. FULLER, HORSEY, SONS, AND CASSELL** are instructed to **SELL by AUCTION**, in lots, at South Wharf, Lowestoft, on **TUESDAY, APRIL 18th** at half-past 12 precisely,  
**SAW-MILL PLANT AND MACHINERY,**

including vertical timber frame, two double deal frames, two circular saw benches, two moulding machines, panel planer, two general joiners, trying-up machine, two fret saw machines, tenoning machine, Richard's patent mortising and boring machine, 6 foot-power mortising machines, dovetailing, tree-nail, sand-papery, and painting machines, wood-turning lathe, two mitre cutters, moulding iron grinder, water of Ayr stone, eight glue-heating stoves, 118 joiners' benches, frame and circular saws, cutters, chisels, carpenters' and joiners' tools, planing machine, drilling machine, two lathes, engineers' and smiths' tools, two Cornish boilers, 30 h.-p. condensing beam engine, 20 h.-p. horizontal condensing engine, table engine, shafting and gearing, leather bands; also

**The BUILDING MATERIALS**  
of the Saw Mills and other buildings, comprising about two tons lead on roofs, 250 squares slates, 150 squares tiles, 250 squares slate boarding, 600 squares flooring, 600 squares rough and weather boarding, about 100 loads timber in roofs, girders and uprights, sashes and doors, 60 rods brickwork, quantity bricks, tiles, stone, drain pipes, old lead and iron and builders' materials, water-cart, three tumbril and spring carts, nine trolleys and wagons, two timber whims, and other effects.

May be viewed the day preceding sale, and catalogues had on the premises; and of Messrs. FULLER, HORSEY, SONS, and CASSELL, 11, Billiter-square, London, E.C.

Auctions for the Year 1899.  
**MESSRS. TROLLOPE'S SALES OF FREE-HOLD AND LEASEHOLD ESTATES, HOUSES, GROUND-RENTS, &c.,** will take place at the Mart, E.C., as follows:—

Thursday, April 20th	Thursday, August 3rd
Thursday, May 18th	Thursday, October 19th
Thursday, June 8th	Thursday, November 23th
Thursday, July 13th	Thursday, December 14th

Sales will be held on other dates as required. In all cases Messrs. Trollope will be glad to have as long notice as possible respecting any property they may be instructed to offer by auction.

Forthcoming Sales for the Year 1899.  
**MESSRS. E. and H. LUMLEY (Lumleys,** of St. James's House, 22, St. James's-street, London, S.W.) beg to announce the following days of **SALE by AUCTION**, for the forthcoming year, at the Mart, Tokenhouse-yard, E.C.; but, in addition, other dates can be arranged for special sales. Terms on application.

Tuesday, April 25th	Tuesday, Aug. 15th
Tuesday, May 23rd	Tuesday, Sept. 12th
Tuesday, June 6th	Tuesday, Oct. 17th
Tuesday, June 20th	Tuesday, Nov. 14th
Tuesday, July 4th	Tuesday, Nov. 28th
Tuesday, July 18th	Tuesday, Dec. 12th.

Messrs. E. and H. Lumley announce in the advertisement columns of the "The Times" on Saturdays a complete list of their sales, which will include estates in England, Ireland, and Scotland, town and country properties, ground-rents, reversions, gas and water shares, stocks, &c. In cases where property is to be included ample notice should be given in order to insure due publicity.—St. James's-house, No. 22, St. James's-street, S.W.

Dates of Sales for 1899.  
**MESSRS. EDWIN FOX AND BOUSFIELD** announce, for the convenience of their employers, that their **SALES by AUCTION OF LANDED AND HOUSE PROPERTY, Ground and Improved Rents, Reversions, Policies of Assurance, Shares, and other Securities,** will take place during the year 1899, at the Auction Mart, Tokenhouse-yard, Bank of England, on the following Wednesdays in each month:—

April 12th	June 21st	October 18th
April 19th	June 28th	October 25th
April 26th	July 5th	November 1st
May 3rd	July 12th	November 8th
May 10th	July 19th	November 15th
May 17th	July 26th	November 22nd
May 24th	August 2nd	November 29th
May 30th	September 20th	December 6th
June 7th	October 11th	December 13th
June 14th		

The prices realised at these auctions are not included in the official reports, such quotations being often prejudicial, and never beneficial, to the only parties concerned—buyer and seller.

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Telegrams, "Fox Bousfield, London." Telephone No. 118, Bank.

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**MESSRS. A. PREVOST and SON for THE LAND COMPANY,** on **WEDNESDAY, APRIL 12th, 1899,** in a Marquee on the Estate, at about 5.0 p.m. After the Sale of Plots.

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**SANITARY INSPECTORS' EXAMINATIONS.**—An Associate of the Sanitary Institute thoroughly PREPARES CANDIDATES for the above Exams. by correspondence; no books are required.—For particulars and testimonials apply, "Certified Coach," 31, Herbert-road, Plumstead, S.E. 6

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**R. I. B. A. EXAMS. PREPARATION,** personally or by correspondence, in three, six, nine, or twelve months' courses. Architectural Lending Library. Special three months' finishing courses.—For full particulars apply to Messrs. HOWGATE and BOND, Associates R.I.B.A., Parchard House, 70, Gower-street, W.C. (close to the British Museum

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See ARCHITECTURAL REVIEW for APRIL.

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APRIL 12, 1899.

No. CCXVIII.

## An Architectural Causerie.

### The Way About London.

LONDON, we know, *ad nauseam*, to be the richest city in the

world. We also, in these latter days of phenomenal expansion, know it to be the poorest in methods of communication; in ways by which the East may reach the West, and the North shake hands with the South, without needing the better part of a day, and the changing from tram to 'bus, from 'bus to train, and so back to tram again, to perform the feat. There are few sorrows so poignant as those of the divided members of a family who live, say at Hornsey and at Tooting; at Clapton and at Kingston-on-Thames. Better for their chances of again seeing one another in this life if they lived, not those ten miles apart, but at either end of the fifty miles dividing London and Brighton. They could do *that* journey in an hour; how long they would be in performing those between the other parts we have named we will leave to the industry of our readers to determine. We have neither the will nor the patience to essay the task ourselves. The worst of this is that the difficulty—nay, the impossibility—of at present being conveyed swiftly and cheaply between distant parts of the metropolis seems in no way of being adequately remedied, although we have at the present time no fewer than three great urban railways in progress, a fourth opened less than a year ago, and several others projected. The fact is that, so long as railways are projected as separate financial schemes, instead of being all related in one ordered whole, they will only be constructed along the most crowded courses of traffic, leaving the more speculative backwaters of the suburban life exploited only by the fugitive and uncertain 'bus. It will be a great convenience, when the Central London Railway is opened at the close of this year, to be able to travel in twenty minutes from the Bank of England to Shepherd's Bush, without the usual fight for a seat, which may be witnessed at the stopping-places of the 'buses, on any wet evening, along Holborn and Oxford Street; but when the trains full of passengers reach Shepherd's Bush the same contest will be waged in the teeming rain among those who want to go on to Gunnersbury or to crowded Acton and Ealing. As for the Baker Street and Waterloo Railway, now under construction, that is frankly being made for the convenience chiefly of railway passengers who want to travel between those two great trunk lines, the Great Central and the London and South Western Railways. We really owe much of our troubles in this matter to the Houses of Parliament, erroneously supposed to sit and slave at Westminster for the welfare of the public. It will be scarcely credible to many who read these lines (but it is the simple fact) that London possessed no local railways whatever until the first section of the Metropolitan Railway was opened, between Edgware Road and Farringdon Street in January 1863. That railway was originally sanctioned in 1853, by

what was then called the "North Metropolitan" Railway Act. That the Metropolitan Railway should ever have been called the "North Metropolitan" sounds humorous to-day, when we might fitly name a new line at Finsbury Park or Holloway in such a manner. Thus, railways had been making in different parts of the country and to termini in the then suburbs of London, since the early '30's, but not until 1863 did London possess a solitary line of its own. Attempts had been made long before, but the jealousy of the great London landlords, which had prevented the termini of the trunk lines being

for wayleaves. To-day the state of the law is such that it is fully recognised that the landlord has no claim to be consulted as to subterranean railways projected through the subsoil of his property; always, of course, supposing that the works are to be situated at such a depth, and constructed in such a manner, as not to interfere in any way with buildings situated or likely to be built above. This principle was re-affirmed by a committee of the House a few weeks ago, in the course of hearing the Hampstead, Euston, and Charing Cross Railway Bill, when the Duke of Bedford's claim for notice to be



SECTION OF END BAY. THE BANQUETING HOUSE, WHITEHALL. INIGO JONES, ARCHITECT.

placed in town, sufficed, through their interest in Parliament, to kill all other London railway bills. They were afraid for their property. To-day the most of them would for the sake of increasing the value of their freeholds, only too gladly welcome fresh schemes; but these are the days of improved subterranean tunnelling; of the Greathead Shield and the air-loch, rendering obsolete the old "cut-and-cover" system, which once paved the way for large compensation claims and payments

given him in respect of such portions of that undertaking as passed beneath his Bloomsbury property was disallowed. This will be a factor which will make for the projection of new railways where, under the old *regime*, the sums to be paid to property-owners would have been absolutely prohibitive. It is only in surface railways that room for this form of plunder is now left, and London is likely to see very few more of such lines.

C. G. H.



## On Reflection.

**The London Building Trades.** IN May, 1897, the Technical Education Board of the London County Council appointed a special sub-committee to inquire into "the educational requirements of members of the building trades, and the provision at present existing." The report of the committee, which has just been published, contains much food for reflection for all who are in any way concerned in the building trades of London. The committee examined twenty-nine witnesses, most of whom were specially qualified by their position and experience to throw light upon the subjects under inquiry. Among those who gave evidence were architects, builders, technical teachers, builders' foremen, and trade union officials; and with such a multitude of counsellors, though there might be wisdom, it was not to be expected there would be unanimity. Nevertheless, the inquiry has disclosed certain clear and undisputed facts which had not perhaps hitherto been generally suspected. Prominent among these is the almost startling fact that the doors of the building trades in London are practically closed against London boys. London builders as a rule do not want apprentices, and will not take them except on payment of a heavy premium, sometimes, indeed, not even then. An extract from an earlier report which is quoted by the sub-committee shows that in 1895 there were found to be, among 12,000 employés in various branches of the building trades, only eighty apprentices and 143 "learners," instead of 1600, which would have been about the normal proportion. In some cases it is the workmen themselves who seem to be responsible for the limitation of the number of apprentices, but more often it is the masters. Mr. George Cole, secretary of the London district of the National Association of operative plasterers, stated that in the plastering trade he thought there were only about ten apprentices in the London district within a radius of twelve miles. He had gone round to employers offering a premium of £25, but they would not have an apprentice. Five years ago he approached the master builders and found there were no boys in the trade and no builders affording any facilities for them. It will be remembered that one of the "objectionable practices" alleged against the Plasterer's Union was that they have refused to allow the employment of apprentices; it is evident from this report that such a charge is entirely without foundation as far as London is concerned.

**The Training of Artisans.** THE reasons for the employers' attitude on the matter of apprenticeship are intelligible enough. Rents in London are so high that every square yard in a workshop must be made to produce the most valuable output possible; a lad who is just beginning to learn his trade and whose productive capacity is practically nil, takes up as much room at a bench as a skilled craftsman. Again, there is the difficulty of discipline. Your apprentice may be lazy or "cheeky," but you cannot "sack" him, at least not without considerable trouble. This difficulty does not apply to the "learners," who, being liable to instant dismissal for misconduct, are more amenable to discipline; but that system is open to serious objection in another direction. In some shops, it would appear, the learners pay a fee to the

foreman and are directly under his control, the tendency of this system being for the learner to be dismissed without due cause in order that the foreman may take another fee from another learner. As a general rule the London building trades are recruited from the country; very few of the skilled workmen at present engaged by London building firms learned their trade in London. Altogether it is a bad lookout for the London boy, and considering that the equivalent of a fair-sized town is added to the Metropolis every year it seems hardly fair that the Londoner should have scarcely any share in the building of it. A large part of the evidence before the Committee related to the existing provision for technical education in the building trades in London, and it was shown that in this important matter steady, if not very rapid, progress is being made. But it must not be supposed that the training given in technical and technological classes can be regarded as an effective substitute for the declining system of apprenticeship. The technical school will not open the door of a trade to the boy who wishes to enter it; once he is inside it will help him to become a more intelligent and more efficient workman, but it is a rule in the majority of trade schools, polytechnics, &c., to limit the instruction strictly to those engaged in the particular trade concerned. Moreover, the technical schools are not capable by themselves (it is no disparagement to them to say so) of turning out thoroughly skilled craftsmen; the actual conditions of commercial work cannot possibly be exactly reproduced in the classroom and the college workshop.

**The Committee's Proposals.** WHAT then can be done for the London boy who aspires to becoming a skilled joiner, plasterer, or mason? There is no one to pay high premiums so that he may be apprenticed in London, and he can hardly be expected to go into the country to learn his trade and then come back to London. The Committee, of course, were only indirectly concerned with this problem. Their business was primarily to consider the question of technical education. But there can be no doubt that in the recommendations upon which they agreed, they were largely influenced by the decline of the system of apprenticeship, and the consequent passing of the London building trades out of the hands of London workmen. There are seven distinct recommendations in the report, and the idea underlying them seems to be this: if the masters will not take raw lads and train them till they become skilled workmen, we must arrange for a large part of the training being done by other means; let the system of technical education be so extended and improved that a lad may enter his trade at the age, say, of seventeen, not indeed a fully skilled artisan, but having acquired such a degree of skill that it shall be worth while for an employer to take him without a premium, and to pay him a reasonable wage. To this end the Committee would raise the legal age for leaving school, and give the boy between the ages of thirteen and fifteen increased opportunities for manual training and drawing. After that he might have a couple of years' training in day classes at a polytechnic. The Committee would break down the present exclusiveness of the technical classes; anyone who is capable of profiting by the instruction afforded should be allowed, they suggest, to attend theoretical classes, and a mechanic in any branch of the building trade should be allowed to attend both theoretical and practical classes in other branches of the building trade; the practical classes should be open also to learners and improvers under nineteen years of age. With a view to increasing the practical value of

the instruction given it is suggested that committees consisting of operatives, foremen, and employers in each trade should be appointed to visit classes connected with the Technical Education Board and report to the Board as to their efficiency, and make suggestions for their improvement. As to the teaching, it is suggested that more stress should be laid on methods which secure mechanical skill and quickness of workmanship, and that the teachers should, as far as possible, be actually engaged in the trade in which they give instruction. These suggestions seem eminently reasonable and practical, and there should be little difficulty in carrying out all of them, except perhaps, the raising of the legal age for leaving school, that of course involves parliamentary action; and public opinion, we fear, is hardly yet ripe for a change in that respect. However, it must come in time, and the sooner the better, for it will inevitably tend to produce a superior type of workman. The system of apprenticeship is not likely to be revived to any great extent, and it is to technical education that we shall have to look more and more for the training of intelligent and skilful craftsmen.

## A "BUILDERS' JOURNAL" COMPETITION.

### DESIGNS FOR A COUNTRY HOUSE.

IN accordance with our announcements in the last two issues of the BUILDERS' JOURNAL, we have arranged a competition, to be open to all our readers, for designs for a country house. As the competition is intended to meet the requirements of an individual correspondent, we append a statement of his wishes and, in making the awards, preference will be given to designs which most nearly comply with the following requirements:—

"I want a house long and low, with a large square entrance hall, to be used as a comfortable sitting-room, a wide staircase, and a gallery going partly round hall, a dining-room and boudoir for a lady, about six bedrooms, and three servants' rooms, with comfortable offices, &c. I want something a little unusual, either dark stained wood and thatch, or old timbers and thatch, and all kinds of angles and windows."

There is no limit as to the size of the site, nor yet as to price, but needless extravagance must be avoided.

The designs submitted may include a perspective view, as well as plans and elevations, and must be accompanied by a brief specification. They may be drawn to any convenient scale, but must be inked in and be without colour or wash.

Drawings must be despatched so as to reach the Editor of the BUILDERS' JOURNAL not later than May 10th; they must be submitted under a motto, accompanied by the name and address of the competitor, in a sealed envelope.

Premiums of £10 10s., £5 5s., and £2 2s., will be awarded for the three best designs. The services of a well-known architect will be secured to act as assessor. The three premiated designs will be forwarded to our correspondent, who may commission the carrying out of one of them; but it must be understood that our responsibility in the matter ends with the payment of the premiums.

The drawings will remain the property of their authors, but we reserve the right to reproduce any we think fit.



## SOME NOTES ON THE WORKS OF INIGO JONES.

By H. INIGO TRIGGS, A.R.I.B.A.

(Continued from No. cxxvi., page 116.)

THE earliest signed design by Jones is one in the Duke of Devonshire's collection, dated 1616. In 1617 he prepared designs and a model for a new Star Chamber at Westminster. This was one of his first commissions for the Government. The drawings are now at Worcester College, Oxford, but were never carried out. In the same year he commenced a work at Greenwich, where he built the Queen's House, which now forms the centre of the Royal Naval School, for Anne of Denmark, Queen of James I. The buildings were completed by Henrietta Maria, wife of Charles I., and the date of completion, 1635, as well as the name "Henrietta," are still to be seen on the front of the building. The interior decorations were by Horatio Gentileschi, and one of his ceilings (much damaged) still remains in the saloon. Charles II. set about the rebuilding of the old Palace, and Webb was employed to assist Denham (Surveyor to the Works) in its reconstruction.

When Sir Christopher Wren in after years made his masterly design for the completion of the building, he followed, as probably only he in those days could have followed, the work commenced by Jones. There are some drawings of Greenwich in the Devonshire Collection dated 1637, but these were made by Webb.

In 1617 he also commenced the new chapel of Lincoln's Inn, which was consecrated in 1623. This chapel is the one certain instance of a design by Jones in Gothic, and has been said to have been designed in 1610, that is when the old chapel was demolished, and before he had arrived at his maturer manner. There is some considerable doubt whether the other Gothic churches often attributed to him, namely, the churches of St. Catherine Cree and St. Alban's, Wood Street, were designed by him.

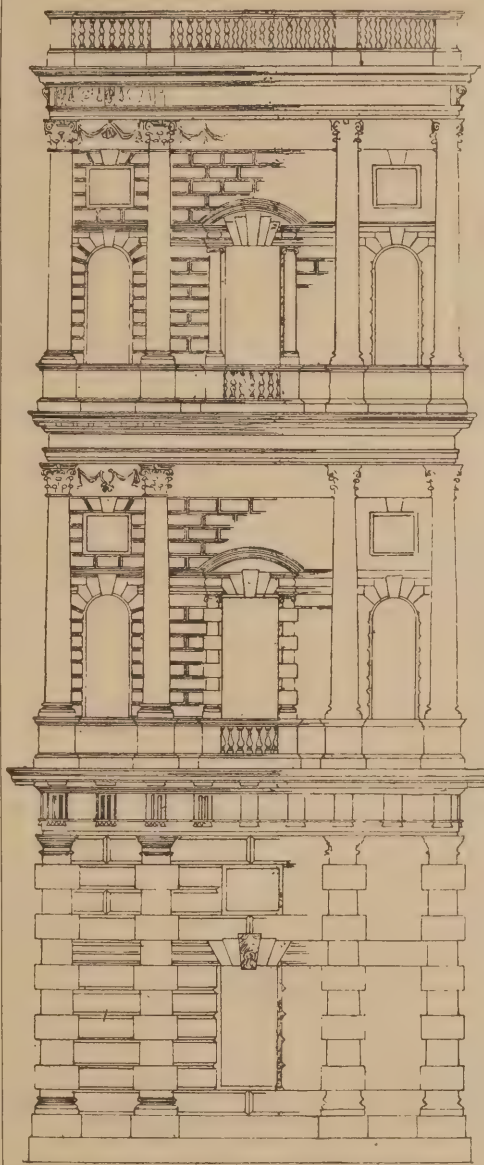
There is no evidence that Jones was employed on any building at all prior to the appointment he was fortunate to secure as Surveyor of the Works to Prince Henry, who, as a keen patron of the arts, warmly appreciated the genius of his architect. In his official capacity he superintended the repairs and alterations to Richmond, Shene, and St. James's Palaces; but the appointment unfortunately was not to be of long duration, for the Prince died on November 6th, 1612, when Inigo Jones had held the office for only two years. His income suffered considerably by the Prince's death, and his prospects seemed none too favourable; but he appears to have saved money, and to have now become a man of independent means; moreover, he had several noble patrons, chief of whom were the Earls of Arundel and Pembroke and Lord Danvers.

About 1613 he made his second visit to Italy; the dates are surrounded with uncertainty, but he was undoubtedly in Rome in January, 1614, and there is an entry in his annotated copy of Palladio (in the British Museum): "In the name of God. Amen. The 2 of January, 1614, I being in Rome compared these designs with the ruins themselves, Inigo Jones." He writes later: "The stairs at Chambord I saw being in France, there are 2 ways to ascend y<sup>e</sup> small hath a waal w<sup>h</sup> windowes cut out, but this y<sup>e</sup> seems was discoursed to Palladio and he invented of himself this staires." In the book of Jones' designs published some time after his death, there is a staircase similar to that of Chambord, though on a larger scale.

Jones and his copy of Palladio were inseparable companions, he took it with him wherever he journeyed, even on his progresses as Surveyor of the Works, and notes of what he saw appear on many pages. He thus writes of the Temple of Jove, June 13, 1639:—"Clemente Scoltor Romano, told mee that the ruines of this temple is pulld all downe, to

have the marble by the Constable, Barbannos Collona, by the Pope's permission; this was the noblest thing in Rome, in my time. So as all the good of the ancients will be utterly ruined ear longe." By this time his fame seems to have spread abroad, and the Italians much appreciated his genius. Two buildings at Leghorn are pointed out as his, and some are also ascribed to him at Venice, but all on slender grounds.

On the death, in 1615, of Simon Basil, Surveyor of the Works, Inigo returned to England to take possession of the office of which the King had granted him the reversion. His salary was to be at the rate of eight shillings per day for his entertainment, eighty pounds per annum for his "recompense of



DETAIL FROM THE DESIGN FOR WHITEHALL PALACE. INIGO JONES, ARCHITECT.

availes," and two shillings and eightpence a day for his travelling expenses, together with a house, apparel, &c.

Evidence exists that the Earls of Arundel and Pembroke were active in bringing the merits of Jones before the King. The Earl of Arundel understood and was very fond of every description of art; the Arundelian marbles at Oxford, and his patronage of Inigo Jones, Vandyck, and Hollar, will long commend his name to Englishmen as a great patron of art.

Jones' new office kept him very busy. The many progresses of the Court kept him constantly employed, and the numerous palaces and manor houses required much attention.

In 1618 James I. appointed a commission "to plant and reduce to uniformitie Lincolne's Inn Fields." The commission consisted of Lord Chancellor Bacon and other distinguished

persons, assisted by Jones, who made the plan, and designed several of the houses on the west side, including Lindsey House and those houses which have the rose and fleur-de-lis on the pilasters. Private interests prevented the full execution of his scheme, a result which leads Mr. Stowe to indulge in the following reflections:—"From the terras in Lincoln's Inn Gardens we have a prospect of one of the largest and most beautiful squares in Europe, originally laid out by the masterly hand of Inigo Jones, and intended to have been built all in the same style and taste, but by the miscarriage of this and many other such noble designs there is too much reason to believe that England will never be able to produce people of taste enough to be of the same mind, or unite their sentiments for the public ornament and reputation."

These sentiments, uttered more than two centuries ago, unfortunately, would be as appropriate if uttered at the present day.

An oil-colour view of Jones' design for Lincoln's Inn Fields is preserved at Wilton House. The view is taken from the south, and the principal feature in the elevation is Lindsey House. This house may be regarded as one of the best examples of Jones' street Architecture; the proportion is admirable. The design consists of a rusticated basement and a ground floor, from which spring six Ionic pilasters, the caps being of a type frequently used by Jones, having a swag suspended between the volutes; surmounting the pilasters is a modillion cornice and balustrade, on which originally rested handsome vases. The balusters are of the long attenuated form so much affected by him, similar types of which may be seen on the Banqueting Hall and Ashburnham House. Between the pilasters are two rows of windows, those on the first floor surmounted by pediments, the centre one curved; those on the second floor are quite plain, and almost square. At the two angles of the courtyard are the red-brick piers, with vases which add so much to the picturesqueness of this side of Lincoln's Inn Fields. The house was originally built for Robert, Earl of Lindsey, General of the King's forces at the outbreak of the Civil War, and was long inhabited by persons of distinction, including the proud Duke of Somerset.

On Tuesday, January 12th, 1619, the old Banqueting House at Whitehall was destroyed by fire, and Jones was ordered to erect on the same site a building of the same character. He appears to have dealt with the matter with great promptitude, for in less than six months he had completed the design, had the ground cleared, and the foundation stone laid. Three years later, on March 31st, 1622, the building was completed, the total cost being £14,940 4s. 1d., which did not, however, include the cost of a new pier at Portland for exporting the stone, amounting to £700.

In the accounts Inigo's masterpiece is described as "A new building with a vault under the same, in length 110ft., and in width 55ft. within, and in height 55ft. within, the wall of the foundation being in thickness 14ft., and in depth 10ft. within ground, brought up with bricks; the first story to the height of 16ft., cut into rustic on the outside and brick on the inside; the walls 8ft. thick, with the vault turned over on great square pillars of brick, and paved in the bottom with Purbeck stone, the walls and vaulting laid with finishing mortar, the upper story being the Banqueting House, 55ft. in height to the laying on of the roof, with two orders of columns and pilasters, Ionic and Composite, with their architrave, frieze, and cornice, and other ornaments, also rails and balusters about the top of the building, all of Portland stone, with fourteen windows on each side, and one great window at the upper end, and five doors of stone with frontispiece and cartones; the inside brought up with brick, finished over with two orders of columns and pilasters, part of stone and part of brick, with their architectural frieze and cornice with a gallery upon the two sides, and the lower end supported upon great cartones of timber carved, with rails and balusters of timber, and the floor laid with spruce deals; a strong timber roof covered with lead, and under it a ceiling divided into



a fret, made of great cornices enriched with carving, painting, &c." It is difficult to account for the thickness of the walls given in this description, which seems impossible.

Nicholas Stone was the master mason employed, and he received 4s. 10d. a day. Charles I. gave Rubens, who was assisted by Jordaens, £3000 out of his own purse for paintings fitted to the ceiling in 1635. The end panels represent the British Solomon on his throne pointing to Prince Charles, who is being perfected by Wisdom, and in the other panel he is represented as embracing Minerva and routing Rebellion and Envy; the centre panel shows him trampling on the globe, and flying on the wings of Justice to Heaven. Vandyck was to have painted the walls with a history and procession of the Order of the Garter. The Palace of Whitehall was burnt down on January 2nd, 1698, but the Banqueting House was fortunately saved, and thus besides being the sole relic of a Whitehall that never existed except on paper, it is also the sole relic of a Whitehall that was.

The Banqueting Hall was the only portion

built of the colossal palace designed for James I. by Jones, and in fact was only one out of four similar pavilions in a vast scheme which was to have extended some 1150ft. towards Northumberland House and to have occupied the whole width between the roadway and the Thames.

Two sets of designs have been published for the complete scheme. Campbell, who published his set of plates in the "Vitruvius Britannicus" 1717-25, states that he obtained the originals, which he dates 1639, from Mr. William Emmett, of Bromley. These drawings are now in Worcester College Library. Campbell states that the Banqueting Hall was built in 1617, and on that account may hardly be trusted, indeed few, if any, of these drawings were probably the work of Webb. In 1727 William Kent published a set of plates from drawings in the possession of the Earl of Burlington which also appear to be the work of Webb. Campbell's drawings indicate a palace only about half the size of the subsequent design, the total dimensions being 630ft. by 460ft. Those given by Kent are for

a palace 1280ft. by 950ft., and are entitled, "The Ground-Plant for the Palace of Whitehall for King Charles ye First, taken," and the elevation "Upright for the Palace of Whitehall for King Charles ye First, taken," but "the front is to be arranged, according to ye ground plott." The meaning of this last provision was that it was to include Inigo Jones' Banqueting Hall already built.

From the reference to Charles I., it seems certain that he favoured the larger scheme, although Mr. Loftie affirms the contrary, doubtless on the evidence of Campbell, who describes his set of plates "as it was presented to His Majesty King Charles I. by the famous Inigo Jones, 1639."

The great central court in the design for James I. was 392ft. by 198ft., whilst in that accepted by Charles, this court is 800ft. by 400ft., the general plan, however, remains much about the same, though doubled in size. The elevation was symmetrical, the composition consisting of a regular façade with projecting blocks at ends and centres, carried up above the intermediate range of buildings. A commencement was made in 1619, when the Banqueting Hall was built, but although Charles I. made strenuous efforts between 1630 and 1640 to revive the scheme, there was no money available, and the increasing difficulties in which the King became involved put a stop to any possibility of carrying out this magnificent design.

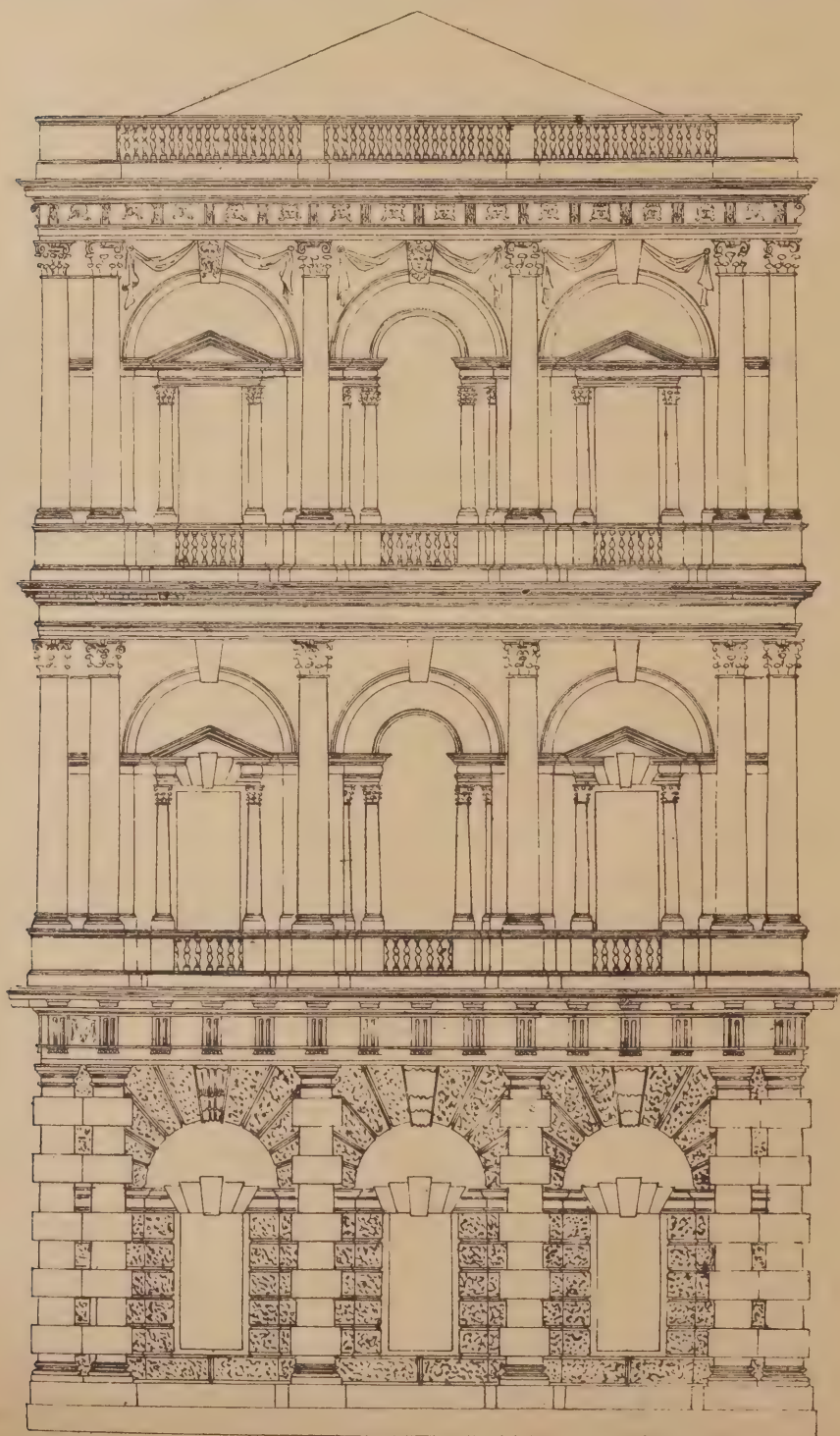
Mr. Reginald Blomfield says of this design:—"The boldness and originality of Inigo Jones' conception is amazing. It has appeared from our survey of English Architecture of the sixteenth century how utterly wanting this art had been in what may be called Architecture in the grand manner—that is, Architecture on a great scale, and depending for its effect upon proportion and orderly distribution, that is, on the abstract and essential qualities of Architecture rather than on the accidents of detail. Throughout the Elizabethan age costly palaces had been built, such as Wollaton and Audley End, but not one of those houses can be said to embody any large architectural idea. They are more or less picturesque masses of building, tricked out with adventitious ornament, which might be shorn away without materially injuring the Architecture. The detail itself is usually wanting in refinement and distinction, and although these houses arrest our sympathy by their associations, considered from a purely critical standpoint they only rank as second-rate work. There was, in fact, no precedent whatever in England for such a building as Inigo Jones designed for Whitehall. The force of his genius is shown in the fact that almost at one effort, and without previous failures, he was able to create a finished masterpiece of design in a manner that was as yet quite unfamiliar in England. The Banqueting House, mere fragment as it is of a stupendous design, is to this day the most accomplished piece of proportion in England, and not inferior to the finest work of Palladio, and the great Italian masters."

(To be continued.)

**A New Bridge** is to be erected over the River Rom at Havering Well Fordway, Essex, at an approximate cost of £2200.

**The New Cottage Hospital at Colne**, which has been erected in commemoration of the Queen's Diamond Jubilee, and the foundation stone of which was laid last Saturday week, has cost £4,000. During the ceremony a stone, weighing about 4 cwt., fell on a man's leg and badly sprained it.

**London Smoke.**—The inspector appointed by the Coal Smoke Abatement Society made his first report to the committee at their meeting held at 6, Onslow Gardens, and it was decided to draw the attention of the vestries to the worst cases in their respective districts, and to proffer evidence and assistance if required. The hon. treasurer, Dr. des Vœux, was able to report a good result from the distribution of the circular stating the aims of the society, the membership having increased considerably.



DETAIL FROM THE DESIGN FOR WHITEHALL PALACE. INIGO JONES, ARCHITECT.



## NOVELTY IN ART.

By R. S. BALFOUR.

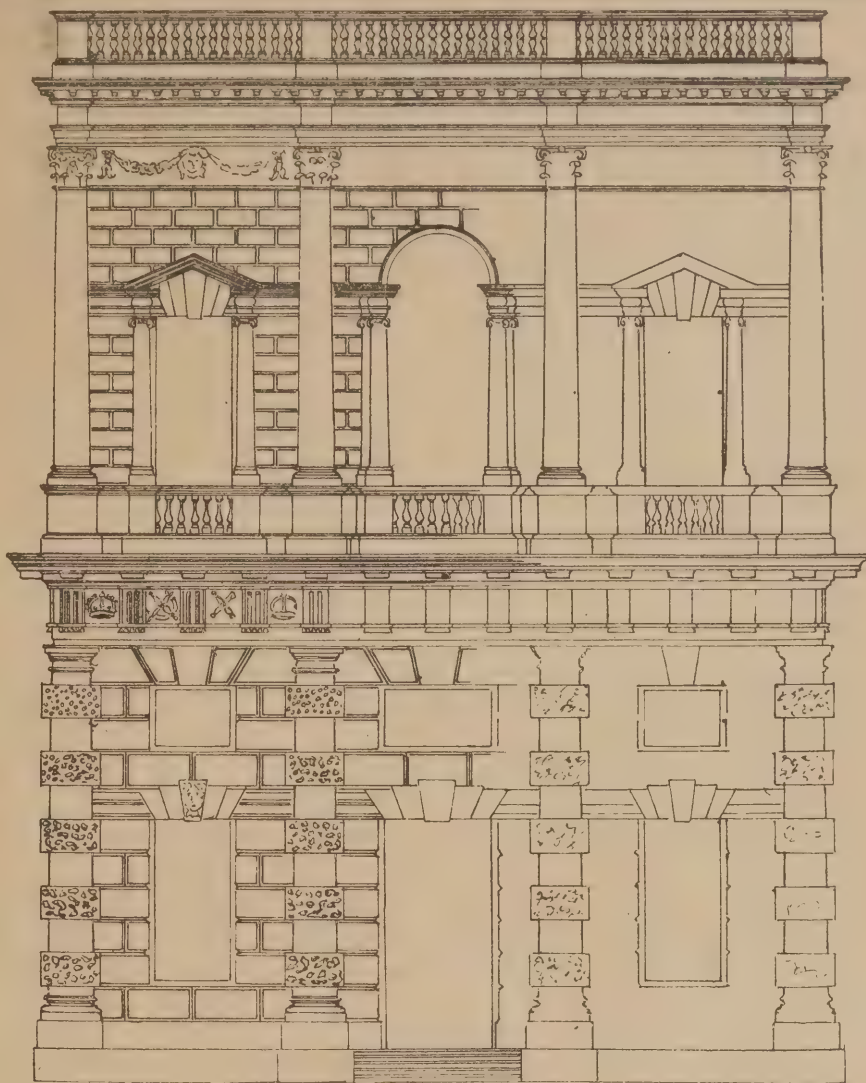
(Continued from page 129.)

BUT there are other deterrents to the productions of artistic novelties which we cannot overlook altogether. Consider the tendencies of the present age, the gravitation towards a complete social equality, the continual apeing of the manners and customs of one nation by another, the constant copying of the characteristics and peculiarities of one class by the representatives of a different one, which is gradually bringing us towards a dull and regular average level of thought and aspirations. This, indeed, is what we have to fear, this love of imitating the dress, the phrases and language, the mannerisms and amusements of our neighbours, fondly hoping that thereby we are gaining new things, while we close our eyes to the fact that the outcome of this inclination will carry us down, fettered by self-imposed restrictions, to the stagnant sea of a cosmopolitan level of intelligence. Must we not, therefore, strive to maintain intact our national conservatism, our ancient customs, and our national characteristics, free from foreign interference, preserve our language pure from imported words, our Architecture from the influence of alien styles, our music, sculpture, and painting, from that of other schools, hold to our ancient sports and pastimes, *not* for the purpose of precluding the introduction of new methods into our life, but in order that our individual and collective originality may be cherished, and that we may hold ourselves free from a hybrid equality and uniformity of mind.

If the value of objects depends on their rarity, then a plethora of beautiful things will engender a disgust for them. What then would be the result of each individual, community or nation enjoying similar or equal advantages; would it make for an artistic progress; would such a state of things bring about a keener emulation in the creation of new ideas? Or would not the knowledge that these same ideas, as soon as evolved, were to become immediately common to mankind, act as a restraining influence on their production, by fostering a spirit of personal irresponsibility; for man is by nature selfish, and will always desire to retain for himself any credit that is due to him for his thought and labour. If this be not so, that each individual desires to hold some advantage over the rest of us, then why are our patent office, our stationers hall, and similar institutions patronized by all and sundry?

Opulence is another factor that must be taken into consideration with regard to its influence on the production of novelties in Art. Like most of our luxuries, superabundance of wealth is as deplorable in its results as the total absence of it. It is not disputed that novelty and simple beauty are only possible up to a defined limit without wealth. Improvement has almost always been associated with, and accompanied by, an increased outlay, and investigation and experiment demand the expenditure of time and means for the production of any novelty. How many great discoveries and beautiful things are lost to us, how many great minds have succumbed still burdened with an undelivered message to mankind, because the means for necessary outlays were not forthcoming, because even their daily bread was lacking.

But wealth, so beneficial to the production of men's ideas and discoveries, when it is discreetly utilised, becomes equally prejudicial in its effects when lavishly applied. Just as great national wealth and power have invariably in history been the parents and forerunners of decadence and national obscurity, and just as in the individual vast acquired wealth tends to dull our brightest intellect, making it rare to see those keenest flashes of genius emanating from the race of Dives, so collectively great national wealth begets, in course of time, idleness, ease, and luxury; it dulls our perception of great ideals, and plays



DETAIL OF THE DESIGN FOR THE PALACE OF WHITEHALL. INIGO JONES, ARCHITECT.

havoc with our intelligence and best convictions. Thus when we find our minds impressed by a display of excessive magnificence, or by a redundancy of ornamentation, or a needless intricacy of design, and not by that cultured simplicity which is the finest attribute of artistic beauty; then immediately will become apparent to us the debasing influence which is exercised by great riches upon Art.

With regard to the value of education as a means of furthering the cause of freshness and novelty in Art, it may appear open to doubt if it really exercises any beneficial influence. True it enables us to appreciate more delicate distinctions and to cull a finer enjoyment and delight in beautiful things, and it also enables us to see those charms which are not apparent, and which might without sophistry be said to appear even blemishes in the eyes of the ignorant. Strange it is that education, facility for travel, and all the increasing means of communication, though they tend temporarily to broaden our minds, are really the means of destroying individuality, the very source from which new ideas are produced. Just as in real life it can only be the child who enjoys actual novelties, in that they are sensations appealing to him for the first time, so in proportion as our education advances are we deprived one by one of the causes which determine our enjoyment of novelty.

If this theory be correct, then it would seem that in Architecture our education has been already carried very far, and that our travelling studentships and our foreign sketching tours are hurrying us onwards to a still more nondescript and ineffectual style of building. Certain it is that true novelty in Architecture is practically non-existent. Our efforts at originality ceased to all intents with the dawn of the great Renaissance. How paradoxical it seems that this revival, this

"new life" which was then instilled into Architecture should also prove the death of that quickening spirit which alone can render progress possible.

Since that time we have wandered up and down among all the monuments which have been bequeathed to us. Our little digressions from the original models seem apparently to be due more to a lack of knowledge than anything else, for it is difficult to call to mind any architect who has not become what we call, somewhat illogically, "more scholarly" in advancing life, in that he strays less from the approved and well-beaten track, and returns to the more primitive stage of a closer imitation. It is almost invariably the young architect who starts forward in his career with new notions, and yet but few years pass ere he longs to recall those exuberances of his conception, and repents him earnestly of what was in reality an effort misdirected it may be, to assist in the severance of Architecture from its place in the category of the dead Arts. As the years of professional life increase in number the struggle for emancipation begins to relax. It seems hopeless to free oneself from the trammels of tradition, when ridicule is the only encouragement awarded. Truly the architect gets little credit for the infinite amount of thought which is absolutely indispensable when there is no precedent for guidance, when the composition is an experiment made in comparative darkness. Though such works usually earn some such term of reproach as "hideous," a word often indiscriminately and carelessly hurled at any fresh departure from the level road of commonplaces, yet surely those men who are willing to risk a professional reputation, who sacrifice their peace of mind, and who devote their energies to these experiments, even though they result in failures, surely they are



more worthy of praise. They are doing infinitely more for their Art than those who bask in the sunshine of public approval, because they offend no traditions, and because they hold themselves free from the dread eccentricity of originality. But few are those who can afford to express their individuality, for they are hampered by the necessity for gratifying the wishes, tastes, and opinions of those upon whom their livelihood depends. But he whom opportunity may favour, if he with sincerity of intention and earnestness of purpose works in this strain, has that within him which will make his work great. Every great movement has been heralded with ridicule, scepticism, and intolerance, and the fear of this surely is a reason why we make so little progress nowadays in Art.

(To be continued.)

**Chimes.**—A commencement has been made on the work of hanging a new chime of bells in the steeple of the Arbroath Parish Church. Messrs. Ramsay and Gordon are to execute the necessary masonry work, and Mr. J. Robertson, joiner, has the contract for the erection of the scaffolding.

## THE NEW ROYAL COLLEGE OF SCIENCE.

IN addition to the Westminster and Whitehall blocks, another important Government building is about to be erected. This is the New Royal College of Science, at South Kensington, of which we publish a perspective view, front elevation and plan. The architect is Mr. Aston Webb, upon whose well-deserved election to the Associateship of the Royal Academy we commented in a recent issue. The building is to be erected immediately facing the Imperial Institute, with which it has been designed to correspond in certain features. It will be of the same length and will be recessed from the roadway in the same way as the Institute; the entrance will be in the centre exactly opposite the entrance to the Institute, and the little domes at either end of the Imperial Institute will be repeated in Mr. Aston Webb's building. It is proposed to span the roadway with archway screens connecting the two buildings, and to erect a group of statuary in the circus that will be formed in the middle. The two buildings together

will thus form a beautiful and symmetrical group.

The new Science College will form another of the fine group of public buildings, extending from Cromwell Road to Kensington Gardens. Upon one great axial line there will be the Natural History Museum, the new Royal College of Science, the Imperial Institute, the Royal College of Music, the Albert Hall, and the Albert Memorial.

The new building will contain a chemical laboratory 88ft. by 84ft., a physical science laboratory, L-shaped in form, extending 60ft. either way, the science library removed from the art museum in the Cromwell Road, which will be placed in the centre of the building, as well as lecture rooms and other smaller rooms the arrangement of which is shown in the plan given on the opposite page. The new college will accommodate about 250 students; it will not supersede, but will supplement, the existing accommodation in the Exhibition Road, which has long been found quite insufficient.

## THE NEW WAR OFFICE.

IN our article last week on the new Government offices, the designs for which have lately been exhibited at the House of Commons we discussed at some length the principal features of Mr. Young's proposed War Office. Readers are asked, therefore, to refer to that article in connection with the illustrations we publish this week. The two elevations given in one of our double plates will convey, we think, a clearer idea of the architectural features of the new building than any illustrations that have yet been published. The plan printed on this page shows the extreme awkwardness of the site, and it is impossible not to admire the skill and ingenuity with which Mr. Young has overcome the many difficulties it presents.

## BRADFORD FIRE STATION COMPETITION.

IN our issue of March 15th we published the letter of protest addressed to the Bradford Corporation by a number of architects who took part in the recent competition for designs for a Central Fire Brigade Station. The following official reply has been received by the architects' solicitors:

Town Hall, Bradford, March 29th, 1899.

Dear Sirs,

Your letter of the 27th inst., has been laid before the Watch Committee, who direct me to inform you that, after full consideration, they have decided, without exercising the power reserved in the conditions to call in the assistance of an assessor, that the first premium shall be awarded to the alternative design No. 1, sent in by Messrs. Mawson and Hudson, Architects, of this city.

With reference to the protests of your clients I have to state as follows:

- 1.—That the first paragraph thereof is disposed of by the above selection.
- 2.—That the shortness of the time allowed for a public view of the competitive designs which were not premiated was entirely due to the fact (as already intimated to your clients) that the Art Gallery, where such designs were hung, was required for the Spring Exhibition of Pictures, and no other suitable place was available.
- 3.—That the elevation and perspective of the premiated designs are not coloured as appears to be believed.

However aggrieved your clients may feel, there is not the slightest ground for suggesting that the adjudication on the submitted designs has been carried out in any way other than with the strictest impartiality, based on the committee's total ignorance of the authorship of any of the designs until after the premiums were awarded.—Yours faithfully,

(Sd.) FREDERICK STEVENS,  
Deputy Town Clerk.

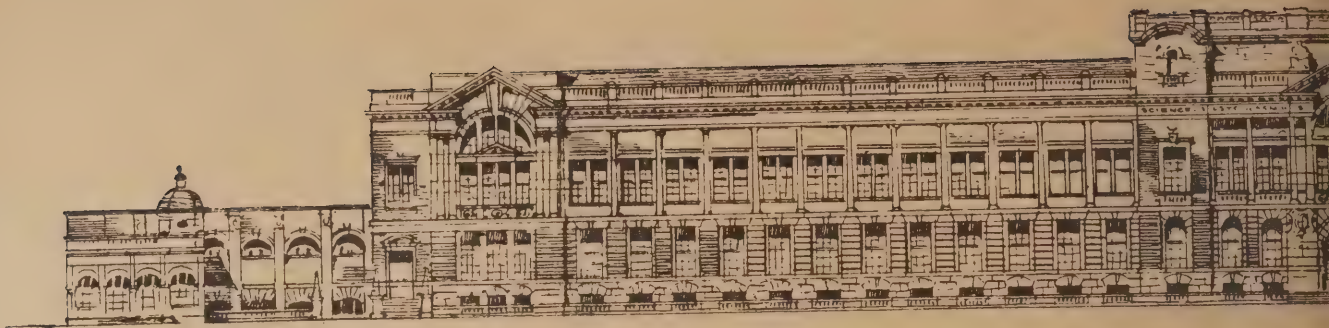


GROUND FLOOR PLAN OF NEW WAR OFFICE. WILLIAM YOUNG, ARCHITECT.

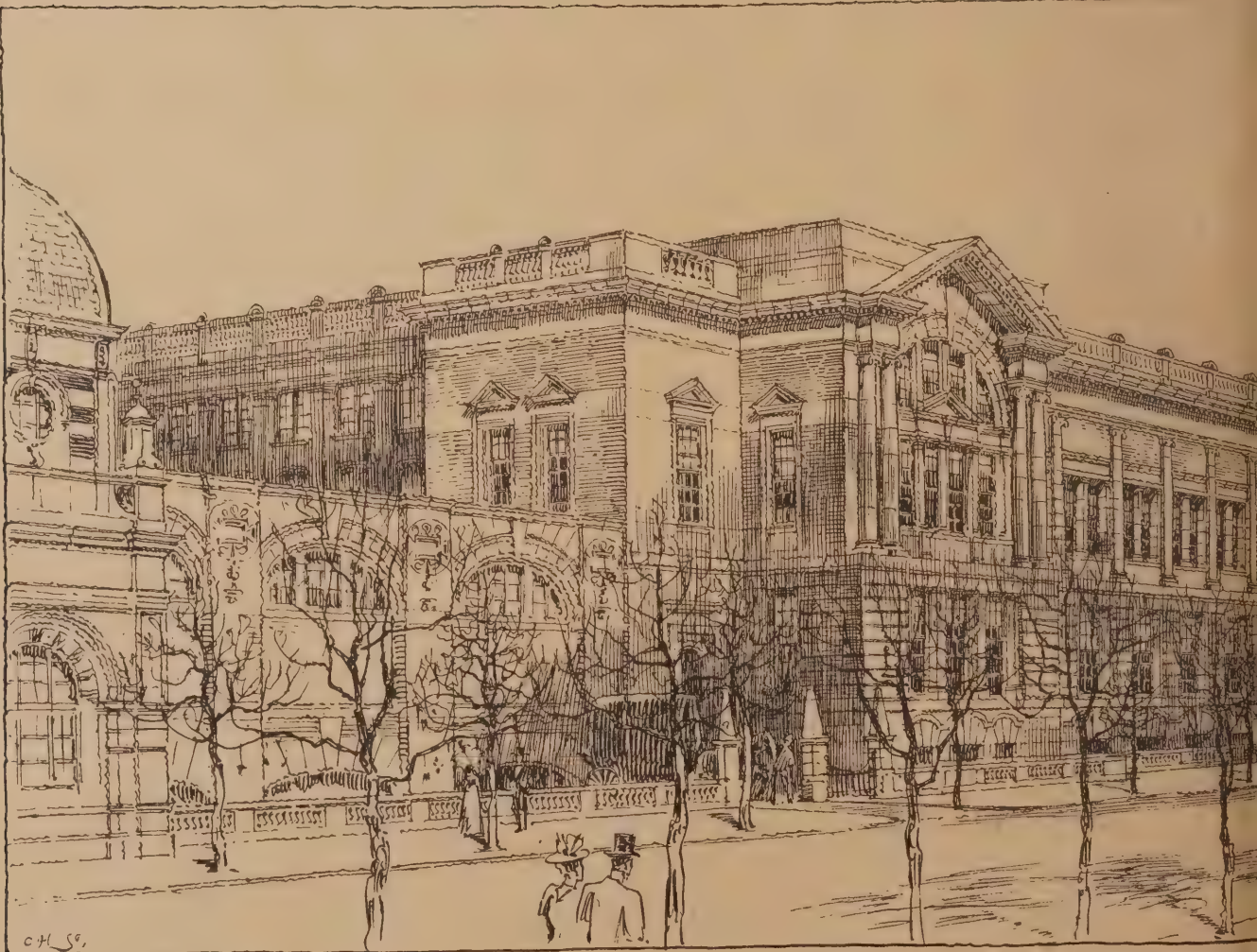






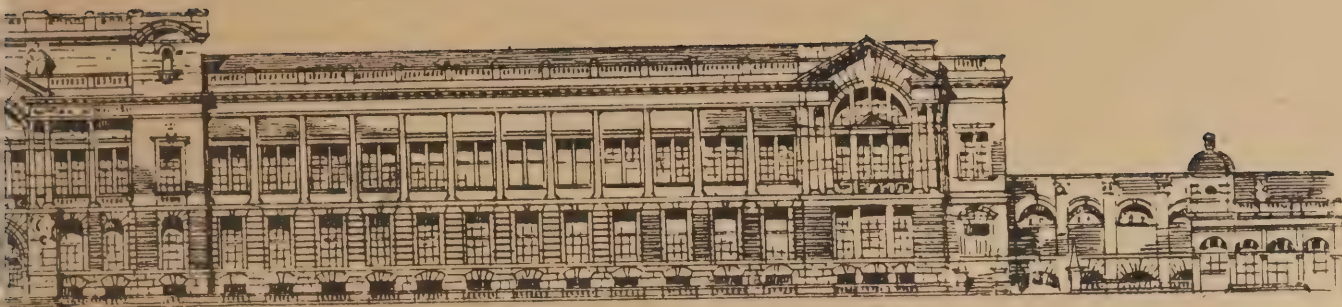


FRONT ELEVATION

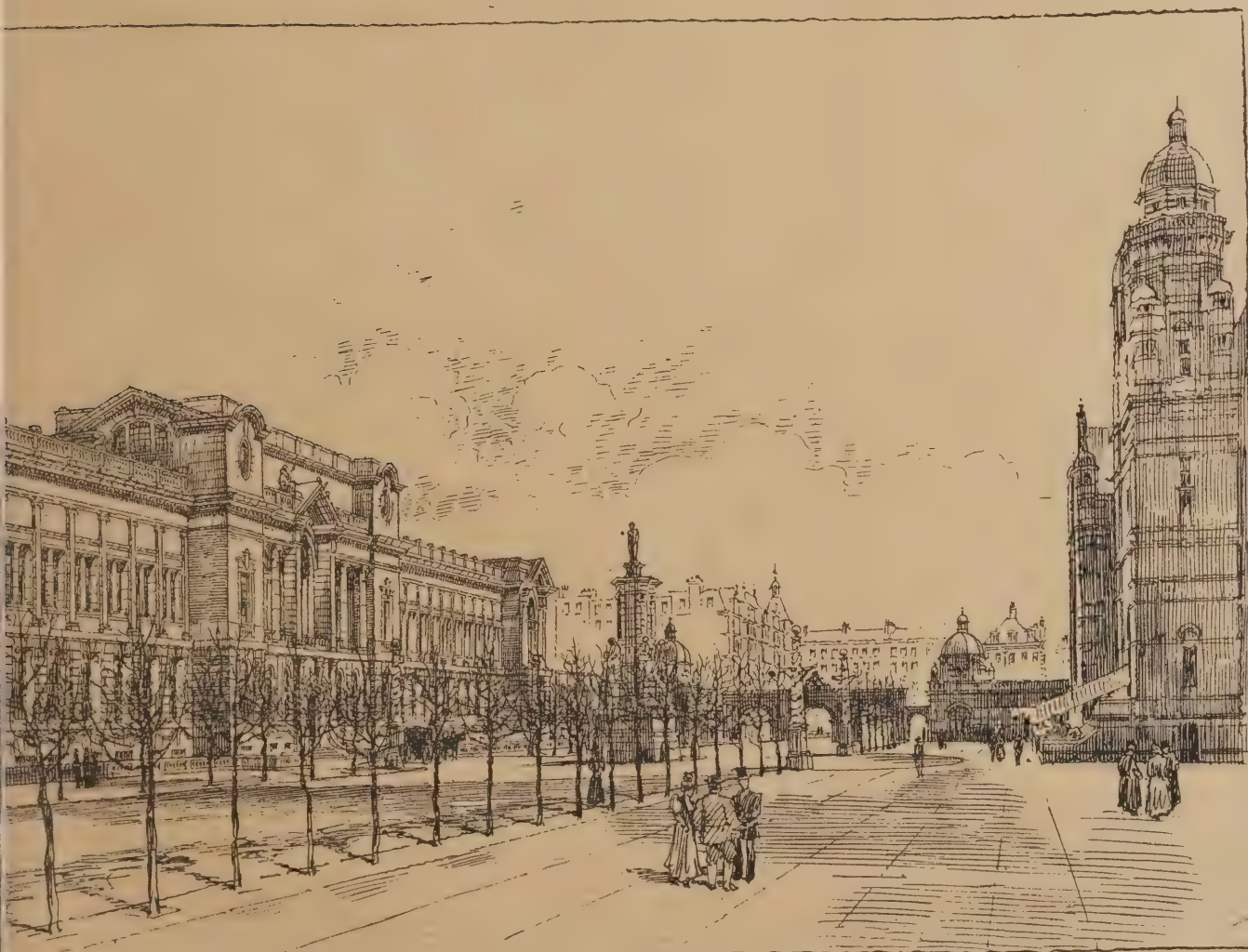


VIEW FROM INTERIOR





100. IMPERIAL INSTITUTE ROAD -



INSTITUTE ROAD.

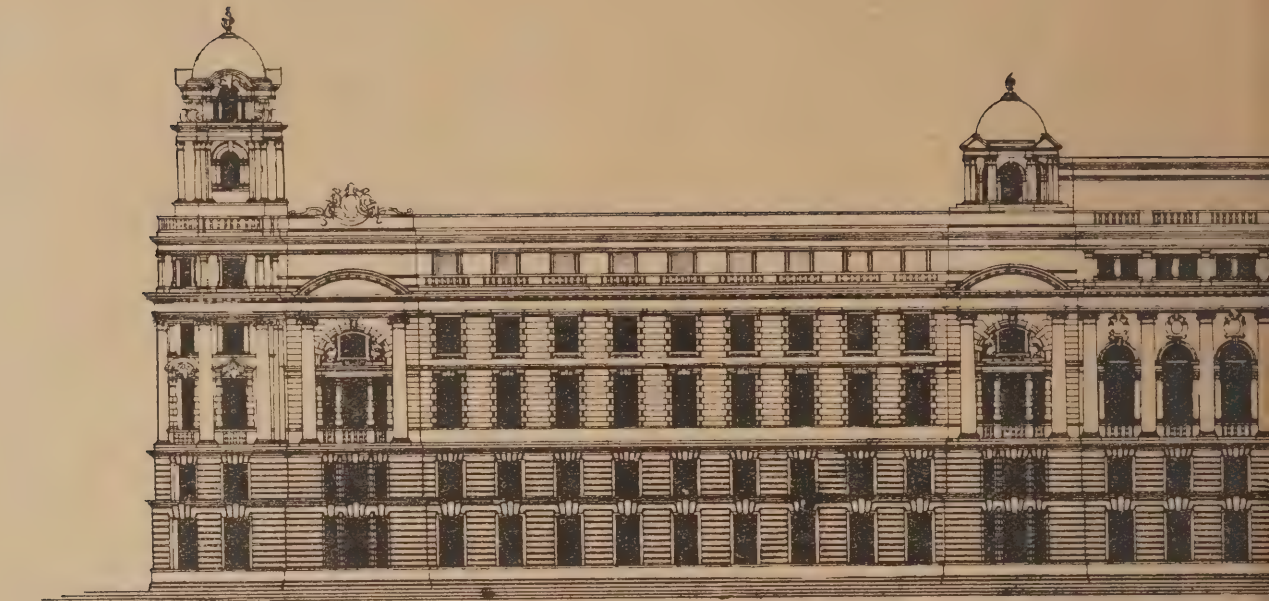


LIBRARY  
OF THE  
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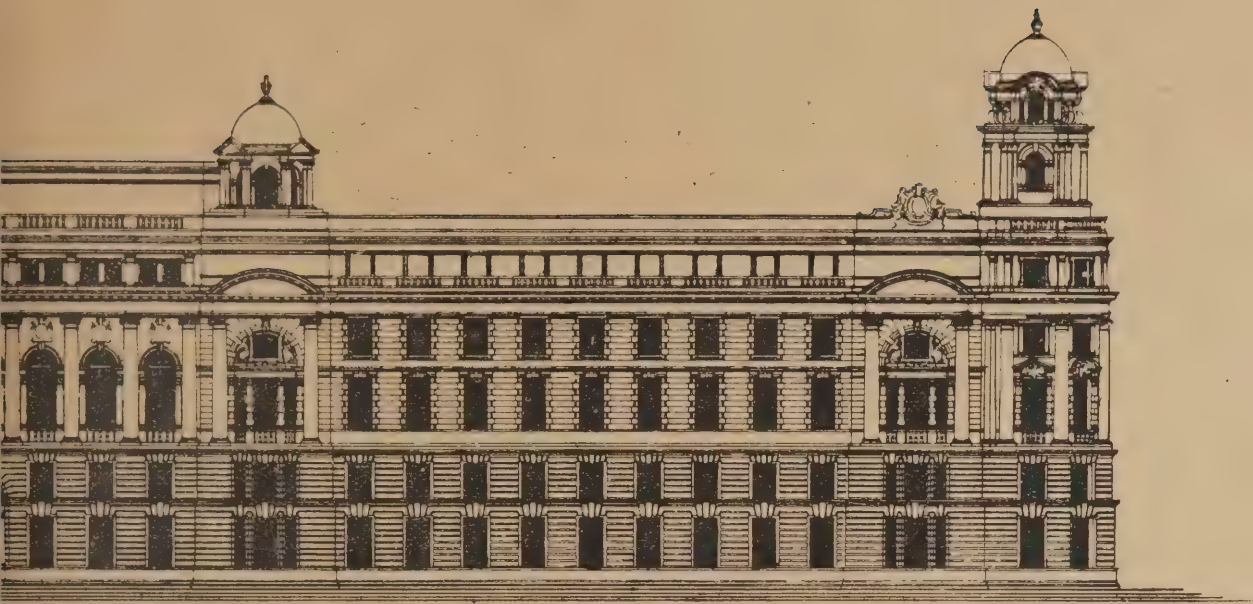


ELEVATION TO W



ELEVATION





HALL PLACE.

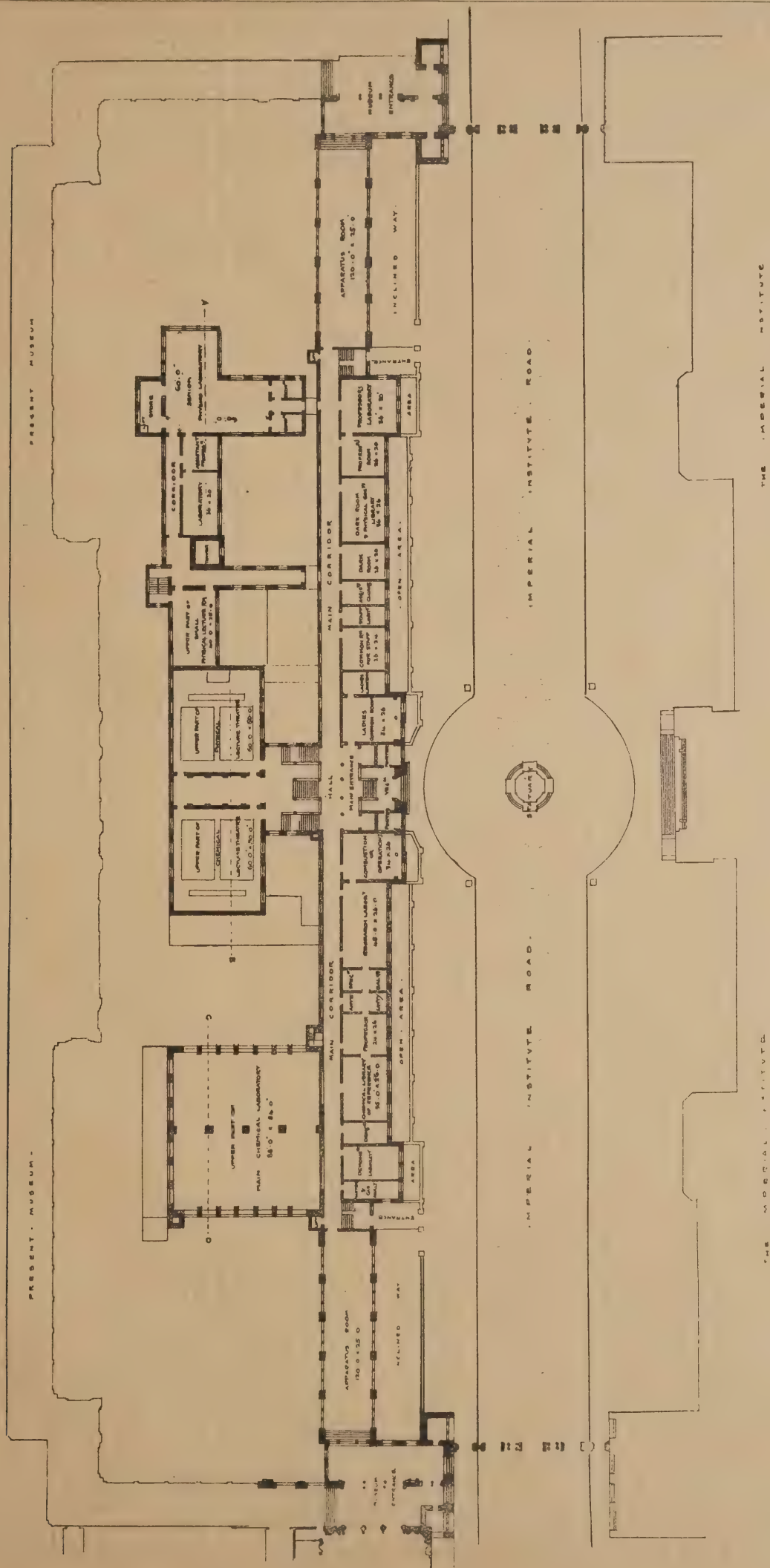


WHITEHALL.



LIBRARY  
OF THE  
UNIVERSITY OF TORONTO





GROUND PLAN OF PROPOSED ROYAL COLLEGE OF SCIENCE, SOUTH KENSINGTON. ASTON WEBB, ARCHITECT.



# R.I.B.A.

## THE APPLICATION OF COLOUR TO INTERIOR ORNAMENT IN RELIEF.

THE Eleventh Ordinary General Meeting of the Royal Institute of British Architects was held last Monday evening, at 8 o'clock, Mr. H. L. Florence, vice-president, in the chair. The minutes were first confirmed, and the secretary announced the death of Mr. Edmond Egan, elected an associate in 1880. The chairman then called upon Mr. H. V. Lanchester and Mr. F. L. Jenkins, to read their papers on "The Application of Colour to Interior Ornament in Relief." Mr. Lanchester, having stated his indebtedness to Mr. H. C. Fehr, for his guidance in preparing this paper, said that the question of form and relief was so frequently of first importance that he should deal in his paper with the massing and treatment, both of colour and form, when applied to internal decoration. Modelled work as a basis for colour treatment gives a solidity and strength that enables the painting to be kept in a more delicate key than would otherwise be thought satisfactory. The relief also is helpful in connecting the work with the mouldings and forms around it in a way that no flat-painted work could do; and if the design of the whole interior is studied by architect and sculptor in conjunction, the result should be far beyond the very frequent method by which the architect leaves a space here labelled "Sculpture," or a panel there marked "Painting." The sculptor naturally asks for as much freedom as possible, while the tendency of the architect's idea is towards formality and symmetry.

### Spaces at disposal for decoration.

Of the spaces the architect usually puts at the disposal of the decorator, the frieze is the most interesting and offers the greatest variety in its requirements; it may consist of simple repetition of somewhat severely conventional forms, or it may teem with variety when it illustrates the great events connected with place or people. The frieze, however, is not always the most suitable form of decoration to adopt, and its comparatively uniform continuity of colour and modelling is not always what is most to be desired. A certain massing of either or both at intervals may, without cutting it up into disconnected panels, give the desirable suggestion of repetition to the frieze, and at the same time suggest a sense of support or connection between other portions of the whole design. This treatment suggests a greater degree of solidity and higher relief in the supporting or dividing portions, though the same end might be attained by giving them more severity of form. An uninterrupted frieze gives length to the surface on which it is placed by the horizontal, stratified effect so obtained, and the more the frieze is cut up into sections the less will the modification in proportion appear.

### Vaults and Ceilings

give exceptional opportunities to the sculptor, though he can rarely put into them work having the same human and personal interest that the vertical surface of the wall allows, as in most cases the decoration must be of a more structural and conventional character. With a view to suggesting the effects that can best be aimed at in various cases, the author went on to consider the actual methods of executing the work, and the most suitable colours and materials. The combination of

### Relief with Colour

is not only valuable where the figure forms the basis of the design, but can also deal in an interesting way with decoration based on landscape, architectural, and other forms, varying according to the subject and the dependence placed on the relief and on the colour. If the scheme of decoration is suitable, a delightful effect can be obtained by using colour very sparingly; as mere suggestion—in ceilings, for instance, where colouring

should always be delicate unless supported by very strong architectural forms. Interesting effects may be obtained where it is desired to embody existing pictures or sculpture in the decoration, such works giving a note as to treatment and colour.

### The Second Paper.

Mr. F. Lynn Jenkins, observing upon the present craze for lavishly decorated buildings, said that each new hotel, restaurant, or place of amusement has to vie with, and if possible, go one better in point of extravagant decoration than its predecessor, and the architect must often experience the greatest difficulty in complying with his client's demands, and sometimes at the expense of his own natural good judgment and taste. The necessity has arisen for a decorative material which shall, above all, be durable and easily cleaned, being permanently coloured to any key of brilliancy, and enriched with metals. These properties are embodied in the material known generally as coloured plaster relief work, and should prove almost sufficient reason for its production and use. With regard to the prevalent mode of decorating

### Rooms in Private Houses,

it is becoming more and more apparent how false a notion it is, and how extremely difficult to get any satisfactory effect by papering the walls and hanging pictures upon them. The revival of the old method of designing and making such decorations as are required as part and parcel of the scheme of the room is a movement the influence of which is found to be widespread by reason of its truth of principle, and also because even the unanalytical mind will grow to perceive its advantage without knowing why. The use of coloured relief for such purposes would often be found most serviceable. The author then described the material and method of its production, and the plan adopted in the working of

### Reliefs by Mr. Moira

and himself, working in collaboration. The relief work in question can in no respect be considered according to the usual laws governing bas-reliefs, but must be modelled strictly with a view to the reception of colour. The quality of the colour depends so much on the texture of the surface underneath that it requires not a little experience and many experiments to obtain good results. The peculiar properties of the material enable the painter to get a brilliant transparency of colour on some parts to contrast with the density of others, so that there are practically no limitations to handicap him. This plastic material has the additional merit of giving exact reproduction, even to the impression of a thumb-print in the finished cast. The panels are easily removable from the wall without damage to them. When the work is fixed complete in its position, it is carefully reconsidered with relation to its exact surroundings, and alterations can be easily effected if desired. Some special advantage is derived in coloured relief work by the collaboration of painter and sculptor. Each would exercise wholesome restraint on the other which would be beneficial to the work, while the joint imagination of two minds should instil a greater degree of interest.

### THE DISCUSSION.

The discussion was opened by Mr. J. M. Brydon, who proposed a hearty vote of thanks to Mr. Lanchester and Mr. Jenkins for their papers. He thought that the great difficulty architects had to contend with in interior decoration, as of rooms, &c., was the use of coloured decoration in relief. He thought there was now no difficulty in getting plenty of good work from artists. Mr. Jenkins had stated that it was practically impossible to get good work in coloured relief, unless two minds were engaged on it in collaboration. That was very well, as far as it went, but as architects were often asked only to suggest the colouring of sculptured decoration, this could not generally be done. When colour decoration was applied to sculpture there was a great risk of losing the delicacy of modelling. He

thought that all sculptured forms should be treated conventionally, not using naturalised forms. He thought in the examples exhibited in the room the whole treatment was a little too restless, the lines requiring more conventionalising. He added that a magnificent use could be made of gold, by reason of its restfulness. Colours should be reduced to a very few, whereby a broad, majestic, decorative effect would be obtained.

Mr. Harold Rathbone, being called upon, said that he wished to deal with the defiant attitude evidenced against a high glaze in decoration. He considered the great thing to attain was permanency, as by the use of glaze, although much might be lost by this high glaze. In the Della Robbia ware, made by the Della Robbia family in the past 400 years, the firing was not so hard as now obtained, but their work was very durable. As marble could not now be used, as was done in the Parthenon, owing to our smoky atmosphere outside, and as it was not quite suitable inside, he thought that the loss could be remedied by the putting of a light glaze over the work.

Mr. Mountford seconded the vote of thanks and agreed with Mr. Brydon, in the suggestion that a conventional treatment of coloured decoration in relief was desirable.

Mr. J. D. Crace was sorry to see that the technical method had occupied so much attention, for this after all was of second rate interest compared with the definite expression of surface and line.

The Chairman said he could not agree with the insertion of panels in the "spotty" treatment, and he thought that in the decoration under consideration an old tapestry effect should be sought after. He then put the vote of thanks, which was carried unanimously.

Mr. Lanchester briefly replied, and Mr. Jenkins, in acknowledging the vote, said that the material he and Mr. Moira worked in, as far as he could tell, was very durable, for they had tested it under water, and in very many ways. He held there were no limitations to the effects to be obtained, for any could be obtained.

The annual general meeting was announced to take place on May 1, when the annual report will be discussed, and the appointment of the Statutory Board of Examiners, nomination of Auditors, and appointment of Scrutineers for the annual elections, will take place.

**The Glasgow School of Art** architectural class held their annual Easter excursion to Oxford under the leadership of Mr. W. R. Watson and Mr. W. J. Anderson, and made the round of all the important colleges.

**A new High Altar** in Renaissance style has been erected in the "House of Prayer," Hagley Road, Birmingham. It is in alabaster coloured marble and metal, and has been designed by Mr. D. J. Powell and Mr. T. B. Hall.

**Knowle Church** is to be restored and the plans and specifications for new vestries and organ chamber have been completed by Mr. Chatwin, and Messrs. Collings and Godfrey, of Tewkesbury, have sent in a tender to do the work for £770.

**Mr. Robert Baillie**, who died at the residence of his son at Lordship Park, London, N., on April 1st, was the sole surviving partner of the firm of Westwood, Baillie and Co., ship builders and engineers, of London Yard, Poplar, E. Mr. Baillie, with the late Mr. Joseph Westwood and Mr. James Campbell, began in 1856 the business at London Yard, afterwards known as Westwood, Baillie and Co., and many bridges were constructed by the firm—notably, the Sukkur bridge for India, which was, till the completion of the Fourth Bridge, the largest cantilever bridge in the world, and the Attock and Chenab bridges. The firm also built Her Majesty's ships *Resistance* and *Valiant*, and other vessels. Mr. Baillie was a member of the Institution of Civil Engineers, the Institution of Mechanical Engineers, and the Society of Engineers, and an associate of the Institution of Naval Architects.



## THE ADVANTAGES OF BEING AN ARTIST.\*

BY BULKELEY CRESWELL.

WHEN I first considered the subject, the advantages of being an artist struck me as being so palpable, and so undeniable, that there appeared no doubt but there would be plenty to be said in amplification of them. It was recalled to my mind that a very large number of persons who are "artists" under no definition ever constructed, are yet wont to pose as such; and that a still larger proportion of those who actually are artists seem borne up by voluptuous self-sufficiency on the strength of the fact. Besides this, a talented friend of mine, who had built himself an enviable reputation as a palmist—a ladies' palmist—had informed me that he never fails to tell his subject she has "highly artistic proclivities, though he cannot say to what extent they may have been cultivated"; and that the subject never fails to go broad marvelling at the wonders of palmistry. None ever doubt that they are artists, he had assured me, even though they can only establish and corroborate it by recalling to mind a single performance on a basket chair with a pot of enamel paint. It is a delightful and dignifying revelation to them, just as it was to the countryman to learn for the first time of prose and verse. "Ere 'ef I," he said, "being talking prose all my life, and never knowed it!" From all this, I concluded, in my ignorance, that there must be some advantage in being an artist. It was soon forced upon me, however, that there were no advantages at all in being an artist, but that on the contrary the disadvantages were manifest and immense. In my simplicity it had never occurred to me that anyone ever did anything or assumed to be anything which did not bring in an equivalent advantage. Here then was an awakening. The practice of an art, it seemed, was not only shorn and barren of all advantages, but was literally a-crawl with disadvantages.

These disadvantages then reveal themselves as of two sorts or kinds. An artist not only incurs disadvantages himself, but has a number of extraneous ones also which are dissipated, as it were, and become disadvantages common to the community which has the ill fortune and the bad policy to harbour him.

To begin with, the most general and most essential quality of the artist, and one which is almost necessary in the higher flights of art, is that of having pains and crying out. An artist might almost be defined as "one who has had pains and cries out." Gentlemen, to have bad pains is not an advantage in spite of the atmosphere of romance that is popularly accorded to it. A man who has everlasting toothache in his soul, although he may foster and cherish it, is no sound man and he is no happy man. It is a disadvantage to have toothache in one's soul. As some of us inherit gout from forebears who lived too freely in the enjoyment of pleasures, so have these artists inherited a taint from the asceticism of mediæval days. But this is not exactly the point. What we are concerned with here is that the high sentiments of an artist are composed and fabricated of ignoble qualities. It is a disadvantage to a man to be loaded with ignoble qualities, even though they enable him to paint a fine picture, write a fine poem, or compose a great symphony. An artist's sensibilities are high strung to a morbid degree. Shades of colours, the contours of the human figure and of the misty hills, the silence of the night, the tumult of the sea, constantly move him to such fearful sensations as few healthy men know twice in a lifetime. His susceptibilities are like a help of jelly on a plate, which catches up the unperceived vibration of a cart passing in the street, and is ready to jump and shake itself to pieces on a quite ordinary commotion

near to hand. These unmanly, vapourish foibles the artist fosters, and cultivates, and prides himself in. He rejoices in a sort of fragileness of physique. He has, as I say, the inherent instinct of the ascetic. He is tyrannised over by his conscience and usually lacks all moral courage; no expediency, even in a matter concerning his daily bread, will urge him to break away from the principles and ideals of his art. He cherishes and boasts this fatuity as though it were a virtue, instead of being, as it is, a contemptible scion of that same moral cowardice which holds a man from doing what he thinks may be wrong. He is a poor creature hustled by his conscience, and his conscience is a thing he has himself built up out of paint pots, and hogs' hair, and the wretched cant of the studios or the literary club. He is an infernal Casabianca all in himself—he reduces lofty sentiments to a burlesque of them: he is for ever withstanding the natural appeals and claims of humanity and expediency till the voice of his artistic ideals shall cry him permission; he is, as I have said, another contemptible prig of a boy on another everlasting burning deck.

It does not seem desirable to pause longer on this unpleasant subject of the immoralities of the artist—we are none of us perfect. There is a great deal more to say, however, upon the matter of the fundamental selfishness latent in the artist, a selfishness which covers all he does and conceives of, and which explains to a great extent his motives as an artist. He is selfish, because the absorbing devotion of his life is directed upon his own inwards. Romney sent his wife from him permanently, because her companionship weakened his art. It is habitual for artists to neglect the claims of family and citizenship in the cause of this same Art. The artist believes he is making Art the absorbing devotion of his life, but in reality he is not, because what he calls "Art" is a code of conventions, abstractions, ideals, principles, what you will, that he has evolved out of his own personality, nourished by experiences which he has selected and sought out to the end of strengthening them; and he sits apart from the affairs, hopes, joys and sorrows of his fellow kind for fear of the hard facts which are apt to cancel and weaken his pretty conceptions of life. His attitude is exactly parallel with that of a certain epoch of philosophy, when, as I read in Carlyle, men consulted their own navels in the hope of reading in them the apocalypse of nature. The artist is in the same grotesque attitude; he is habitually focussed upon himself. He has drilled that tyrannic conscience of his into the view that this attitude is attributable to his soul. He has surrounded himself with his ideals, which are no more than highly coloured pictures of himself, till he is like a man in a room panelled with looking glasses; and because these reflected pictures naturally seem to him the consummation of all that is lovely out of heaven, he attributes the high elation he feels in their company, lifting him to the very stars, to his soul. Gentlemen, I hold this bandering of the word "soul," which has of late years come so much to be heard, in unequivocal loathing. Men do not paint pictures, model sculptures, write poems, romances, symphonies, with their souls. I am aware that Mr. Stopford Brooke has gone so far as to define Art as "that which sets free and purifies his soul." But we may excuse Mr. Brooke by supposing this to be a sort of rhetorical sneeze that has got into his page. What we cannot excuse, however, is the blatant unreserve—the graceless lack of sensibility with which it is become the custom to accord to the mystic and divine the phenomena resulting from the ordinary physical waxing and waning of our manhood. It is, we all know, nice to feel that our sentiments are sprung from a sort of rampant spirituality. It flatters; it confers a rarity, and a preciousness. It is true to say that we may now, with impunity, ascribe to soul the most of what our grandfathers attributed to stomach. This avowed intimacy with "soul" is one of the tokens of selfishness and egoism which constitutes one of the great disadvantages of being an artist; for as Mr. Kipling has observed, a healthy

man does not know he has a soul, and if we modify this by saying that a healthy man does not prattle of his soul we shall be well within the truth.

I have just used the word egoism. Well, gentlemen, it is surely this *egoism* that is the real keynote, the fundamental basis from which the sentiment of the artist is sprung. It is easy to explain the cause of this inherent egoism as it is to give illustrations and exemplifications of it. The artist instinct is born, exists, grows and reaches its full strength only by virtue of self concentration, and the elimination of outside antagonistic influences. This after a time constitutes egoism of a peculiarly malignant description. The "cliqueness" of artists is one instance of this self concentration and latent egoism. They herd together in little bands; they have no interest in anything but what bears upon their one infinitesimal corner of thought and deed in this wide world. They have no interest to know how their work is viewed by an outsider, or even by another practiser of another branch of the same art, because they know that his point of view differs and is apart from their own cherished convictions, and it jars the egoistic key in which they are strung to be reminded of it. A doctor who has long had a large general practice in the neighbourhood of St. John's Wood almost exclusively among painters, sculptors, musicians, and so forth, assures me that they are, as a whole, remarkable, not for ability, but for cultured ineptitude. He informs me that in one or two cases where the artist had found wide success, his genius was a form of idiocy. There are parallel cases, as we know; that of the calculating boy who could instinctively, in a moment, answer complicated mathematical questions that occupied accomplished mathematicians hours to solve. My friend tells me that the majority of these artists are incomplete and mentally unbalanced; they are not sound men; their religions are children's fairy tales; they could not take care of themselves if they wandered from their habitual circle of life; they are incompetent to form judgments on the simplest matters of every day life; and further, that they foster and cherish these limitations.

But, we need not go to doctors to learn these things, we may see them for ourselves. Most of us went to the last exhibition of the Arts and Crafts Society. What saw we there? We saw a few examples of sound, sensible and beautiful furniture and house dressings and decorations. What else did we see? We saw a conglomeration of mean vanities, advertisements, aggressive self sufficiency, and absorbing egoism, expressed in wood, metal, and fabrics. The show was chiefly remarkable for the evidence it afforded that so much pitiful human depravity could be expressed through wooden furniture. The recipe for a design seemed to be to conceive a wriggle in the abstract, as it were, and then fit a chair or table to it. Most of the exhibits expressed nothing but the desire of the exhibitor to do something individual and "clever," and not at all like what anyone else had ever done, and display his name against it. We surely never met with a more deplorable, unblushing admission of the contemptibility of human motives.

And to those who did not go to the Arts and Crafts there are plenty of instances forthcoming of the latent egoism dependent on the sentiment of being artistic. Such cases are paramount in our very midst. We may turn to the case of a well-known artist in a decorative line. He dresses in Elizabethan costume for dinner. This man is so imbued with the spirit of his Art that he cannot sit to eat in a room inspired from the traditions of the Elizabethan period, but in a costume of parallel date. The anachronism of nineteenth century dress, we are to understand, would take away his appetite. This is what he would hold a refinement of his artistic perceptions. Other people know, or ought to know, that it is a refinement of egoism, coupled with a complete lack of all sense of humour. Just picture this old fellow gravely coming down to dinner in a sword, and buckles, and ruffs, and his poor starved old shanks clothed in

\* Résumé of a paper read before the Birmingham Architectural Association on February 27th.



worsted tights and protruding from slashed trunks well stuffed with bran; for this, I believe, was the Elizabethan costume. Cannot we fancy him furtively tying his napkin about his knees to keep out the cold. I shall repeat, it is a disadvantage to be an artist.

Gentlemen, if it is a *personal* disadvantage to be swaddled in egoism, it is indeed a greater harm and disadvantage to the social community. It is only because we, as a nation, are prosperous and secure, that such creatures as these artists are endured; and did the instinct become general at all, if the doctrine of self-idealisation evolving "soul" were to become a religion of the country, the nation would *rot away*. The artist is an excrescence incidental to the luxurious securities afforded by civilisation. What good can we conceive of an artist in the event of a national calamity? If it came to any sort of practical doing or production he would fall far behind the most ill-developed factory hand. The artist is a rotten spot in the fair semblance of the community which has the ill-policy to tolerate and endure him. And he is vicious.

Let not that fact be blinked, gentlemen. He is vicious. Oh, his voice is inordinate and undisciplined. The practice of his art is a self-indulgence, and a self-indulgence that reduces his manhood and his utility, and weakens and enervates the social system of which he forms a unit.

These then are the main disadvantages, or rather the main bases of the disadvantages attaching to unrestrained indulgence in art, and it will be seen that an artist who falls away in any respect from these primal qualities that have been enumerated, falls away to an equivalent extent from those sentiments of high artisticness with which we are concerned. In so far as an artist falls away from these disadvantageous qualities essential to the artist, so does he fall away from the highest sentiments of art.

From this comes direct the inevitable conclusion: *That the advantages of being an artist, if any, rely on the absence of Art.*

But, gentlemen, I could hardly have dared to stand up before you this evening unless I had succeeded to some extent in explaining the apparent contradiction of the terms and solving the enigma expressed by them.

If then we take the chiefest bane of being an artist, namely, the refinements of egoism implied thereby, and replace it by its opposite term *altruism*, I think we shall find that matters will arrange themselves in a very plausible solution. This is the more satisfactory as we are probably all here agreed that altruism is the basis upon which art should rightly flourish. Well, and it does. Directly we see art based upon a sentiment of altruism the advantages of being an artist veritably teem.

The artist who is truly imbued with a sentiment of philanthropy or altruism will be first concerned, not with the perpetuation of his own personality and the conversation of his own vanities and ideals, but with the personality and the ideals of those whom he wishes to amuse or enlighten. He sacrifices his own ideals, he even jeers and scoffs at the works of art he labours to produce, so far is he removed from any personal vanity in the matter. The crowd of people for whose advantage he has cast his own feelings and principles to the wind, like and admire what he does, and that is all he needs. The more people he pleases the better he himself is satisfied, and his philanthropic disposition even counts its success when people admire, gape, or weep over creations that he has scorned to think of so soon as the work of completing them was out of hand. Now a cynical person would be ready to proclaim from experience of life that a man who labours in Art for the amusement and benefit of others, without a thought as to his own predilections, would be at a disadvantage, and receive scant thanks or rewards; and it is indeed a gratification to me to be able to show you that, so far from this being the truth, the opposite is the case. The advantages of Art when the artist works on altruistic principles, as has been already said, teem. First of all he gets money. People are willing

to pay highly for what pleases them; but this is not the only satisfaction accruing to our altruist: the fluctuations in his income keep him precisely posted in the waxing or waning condition of his popularity, so that when he finds that he is not pleasing people as much as he used formerly to do, he can at once mend matters by a change of ideals and artistic convictions before his discountenancing by the public swells so as to hurt his feelings with a sense of ingratitude. He also has the advantage of being talked about, and having his photograph published, with an account of what his wife looks like, and how he likes his eggs cooked at breakfast. Indeed, the advantages he enjoys can only be briefly suggested here: they continue as long as he continues to please, but he must be careful not to relapse into any self-indulgences in his work; he must not allow himself to ponder his art, nor to put thought or subtlety into it, or he will find his public falling away, for the public do not understand these things, and will say he is a "bad artist," which is a hard thing for a good philanthropist to hear. His safest and surest road to acquiring and maintaining success, is to keep his attention fixed on the advantages of his art, for it is only when he turns his art to advantage that he will enjoy the advantages of being an artist.

In closing, gentlemen, let me re-state the conclusions which have this evening been arrived at. They are as follows:

- (1) That the advantages of being an artist, if any, rely on the absence of Art, and
- (2) That it is only he who turns his art to advantage that will enjoy the advantages of being an artist.

## Keystones.

**St. George's Church, Leeds,** is to be restored at a cost of £5,000.

**A Stained-Glass Window** was unveiled at Camborne on Easter Monday.

**A Fire occurred** on the premises of Messrs. Carter, decorators, of Broad Street, Margate, last Thursday morning.

**Dagenham Beam Bridge, Essex,** is to be rebuilt at a cost of about £1400.

**Hughenden Manor Enlargements** will involve an expenditure of about £7000. A new wing is to be added.

**A new Theatre at Stratford** has been opened by the Mayor. It has been designed by Mr. G. W. R. Sprague.

**Statue of the Queen.**—The model for the Manchester statue of the Queen has been completed by Mr. Onslow Ford, the sculptor.

**A new Theatre of Varieties** has been erected at Hastings on the site of the old Marine Hotel. Messrs. E. Runby and Co. were the architects.

**The Seven Kings' Hotel, at Ilford,** is being reconstructed from designs prepared by Messrs. W. G. Bartlett and Son, architects, of 56, New Broad Street, London.

**The Institute of Builders.**—Mr. Joseph Randall (of Messrs. Kirk and Randall, Warren Lane Works, Woolwich) has been elected President of the above Institute for the ensuing year.

**The Foundation-Stone** of the new Free Church of Rothes was laid last Monday week. The church is being built from plans by Mr. Sutherland, architect, and is estimated to cost £2,200.

**New Window at Filleigh Church.**—A stained-glass window from the studios of Messrs. F. Drake and Sons, of The Close, Exeter, has been erected in the north transept of St. Paul's Church, Castle Hill, Filleigh.

**Designs for Ornamental Fountains** to be erected in four Manchester parks have been prepared by Mr. J. W. Beaumont, architect, of Manchester. The execution of the work will be entrusted to Messrs. Patterson, of Oxford Street, Manchester.

## ARCHITECTURAL ORNAMENT.

MR. T. DELGATY DUNN delivered a lecture to the students' section of the Dundee Institute of Architecture in the Technical Institute, at which Mr. Kennedy presided. The lecturer at the outset referred to the difficulty of defining exactly what was meant by ornament in architecture. After examining some of the more common theories, he said that for the purposes of his lecture he desired to include in the definition, in addition to the panels, foliage, or isolated ornaments, the varying and often subtle means whereby the architect gives an elegant, strong or reposeful character to his edifices. In illustration of this a comparison was made between the typical buildings of the Egyptians and Greeks. It was shown by lantern illustrations how the shape of the walls, towers and columns of the Egyptians suggested weight and mass, and how the ornament confirmed and intensified the suggestion. In contrast to this it was pointed out how the Greek ideal entirely differed in its architectural expression; and how every detail suggested the carrying power with ease and grace. The lecturer dwelt on the absurdity of using a delicate set of Greek mouldings, originally designed for white marble, to be seen in a pure atmosphere under a sunny sky, copied in dull grey sandstone exposed to a smoke-laden atmosphere under different climatic conditions. To expect such mouldings to be classic in feeling and effect indicated either a complete disregard of first principles or an equally complete ignorance of them. A part of the lecture was an analysis of the theory of light and shade, and the different effects produced by different stone dressing. It was shown that rough stone expressed stability better than smooth, because the nature of its chrysalisation was betrayed; while in stone which had been carefully tooled or rubbed down the natural grain was obliterated, and an artificial one substituted, resembling the grain of some other material, not stone, which was known to resist pressure indifferently. The effects of polishing, as in granite, were explained, and the manner in which artificial texture could be given to stone by different ornamental treatment, also the necessity for the ornament to keep step with the mechanical function of the various parts of a building. Following up this principle, the lecturer showed how carved ornament on structural parts could be made to accentuate the requirements of the structure. Regret was expressed that the object of using carved ornament, other than the purely æsthetic one, was not better understood by public Boards as well as by private clients, who would thus appreciate the reason why architects introduce carving. It was only fair to say, however, that architects did not always put the ornament in the places where its peculiar functions would be best and most economically illustrated. In conclusion, Mr. Dunn urged the expenditure of care in the choice of appropriate ornament, and the study of fitness and function in architecture. The adoption of a caprice was not to be justified by antiquity, nor was the hackneyed repetition of old and ill-understood forms the more commendable for the same reason. While the Corinthian capital might have been a very admirable one, there was no reason why it should be the stock piece of architects to all eternity. A thorough knowledge of the principles on which ornament was formed was necessary to all architects, not only to prevent the common error of introducing it without a reason, but to ensure its suitability where it was desirable to use it. The very permanence of architectural forms was the strongest argument in favour of the best being done.

**Discoveries at Rome.**—The bases of monumental lions which, according to the writer Vareus, stood on each side of the tomb of Romulus, have been found in the Forum at Rome, by Signor Boni, the engineer who has charge of the excavations. These bases are in tufa stone, and are very finely cut.





KENSINGTON PALACE. DRAWN BY C. G. HARPER.

## THE OLD KENSINGTON AND THE NEW.

BY CHARLES G. HARPER.

THE old-time distinction of Kensington has now nearly all vanished, and that "old court suburb" will presently be reduced to the condition of an ordinary London district. It was in 1851 that the market-garden and fields that now form the greater Kensington to the north and south and west, were first seriously threatened, and the great era of building activity inaugurated that gave us the delirious delights of Cromwell Road and Queen's Gate architecture. That was the day of Cubitt and Stucco, and the works of that period stand nowadays in their shamelessness, to teach us "how not to do it." That great building era has long since passed away, for lack of land whereon to build, but the parent parish of Kensington has for some time past felt the storm and stress of a newer era, which builds according to the circumstances arising from that lack of new building areas and the consequent enhanced price of old freeholds. For, with the lapse of time and the spread of business, the value of a square foot of land anywhere within the "four-mile radius" has gone up to a very great height, and it has become no longer remunerative to build houses of two or three stories only.

Thus it is that so-called "mansion flats" are springing up all over town in cloud-capped blocks that render the once-famed altitude of that pioneer among flats, the well-known "Queen Anne's Mansions," quite commonplace. And to this complexion has Kensington come at last. Time was, and that not so long since, when the vista down High Street, Kensington, looking eastward, was framed in and set about with the grateful greenery of Kensington Gardens. To-day the view is bounded by the near and odious neighbourhood of a towering pile of "flats," "mansions," "Babels"—what you will—that render nights hideous with their looming walls, and day desolate with a sense of prisoned life.

The newest change, however, in Kensington is that which will be wrought by the decision of the Queen to throw open Kensington Palace to the public, just in the way that Hampton Court Palace has long been the Londoner's resort. Until the present time Kensington Palace has been guarded by the police with a jealousy far more exacting than that exercised at Windsor or at St. James's Palace; places that, unlike Kensington, are not deserted by the Court. It has always been difficult to understand this really offensive

guardianship, since the old Palace has of late years been partly occupied only by junior branches of the Royal Family and by sundry pensioners. For years, indeed, the greater part of the building has been falling into decay, and the birthplace of Her Majesty had become the home of cobwebs. The prim pilastered red-brick front, built by William the Third, was sinking on its foundations, and the painted ceilings were even falling. During the last twelve months the Office of Works has been busily engaged in restoring the palace, previous to its being opened to the public as a show place, and large sums of money have been voted by Parliament for the purpose.

Another change at Kensington has just taken place, in the sale of the freehold, of the house, No. 16, Young Street. This is the curious double-fronted house, with semi-circular bays, in which Thackeray lived from 1847 to 1853. Here he wrote "Vanity Fair," "Esmond," "Pendennis," and a part of "The Newcomes." There were literary pilgrimages even during Thackeray's life, and his American publisher, Field, narrates how he visited, in company with that distinguished author, the different houses in which his books had been



DRAWN BY C. G. HARPER.

written. Thackeray struck a mock-heroic attitude before this house, exclaiming, "Down on your knees, you rogue, for here 'Vanity Fair' was penned; and, in truth, I have a very good opinion of that story myself!" The house was then numbered "13."

## THE MANUFACTURE OF BLACK PIGMENTS.

FROM the earliest days of the colour industry, charcoal and lampblack have held the very foremost place among black pigments. This is due not only to their moderate cost, but also to the absolute unchangeability of the free carbon, which resists chemical and atmospheric influences better than any other material. These carbon blacks have always been prepared by the imperfect combustion of bodies containing carbon and hydrogen in combination, such as wood, bones, oils, turpentine, &c. When these substances are burnt in such a way that only a limited quantity of air is permitted to have access to them, the hydrogen is consumed, thus forming water, while the carbon previously chemically combined with it is to a large extent left unoxidised, and therefore in the free state with its natural colour. Certain metallic compounds also, particularly those of iron, have long been employed in the manufacture of black pigments; these have also been obtained by the use of natural rocks containing compounds of iron, which are passed through grinders, and afterwards treated with acids and a tannic infusion, resulting in a sort of ink product, which is dried and used as other pigments are. The use of powdered coal and powdered carbonised lignite, as well as that of natural or artificial mixtures of carbon with earthy matters, dates back for nearly fifty years.

With regard to the methods employed for obtaining lampblack from purely organic sources, including the simple combustion of wood and bones, it may be stated that these are the oldest processes. Early in the present century lampblack was obtained by the burning of refined coal tar; this process was patented, and later it was proposed to carbonise coal tar with oil of vitriol, to achieve the same end. Black inks have been obtained by the precipitation of solutions of tannin, obtained from dye woods, myrobalans, &c., with artificial metallic salts. The aniline blacks for pigments, formed by the action of chloride of sulphur upon aniline, were introduced between thirty and forty years ago.

The most celebrated of all blacks, viz., Indian ink, is prepared from an extract obtained by means of evaporating to dryness a decoction of ginger, hoh-jang, kang-sang, and the pods of tchu-hia-tsao-ko, to which is added for thickening purposes, a size made from donkey skin and soot. This mixture is stirred into a homogeneous mass and allowed to harden in copper moulds.

W. N. B.



## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,

April 12th 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### A Municipal House Agency.

THOSE good people who view with dismay every fresh development of municipal enterprise, will not be pleased to learn that the vestry of St. Pancras have embarked in the business of house agents. But those who know the extreme urgency and difficulty of the housing problem in London, especially as it affects the working classes, will be disposed to welcome any expedient which tends, even in the slightest degree, towards its solution. Two registers have been opened, one for tenants in search of houses, and the other for landlords seeking tenants. No charge is made either against the landlord or the tenant, and the Public Health Department of the vestry has charged itself with guaranteeing that, as far as possible, only houses in a thorough sanitary condition will be entered upon the books. It was the displacement of so many people through the extension of the Midland Railway Company's premises, and the difficulty generally experienced by those displaced of finding suitable homes, that led the vestry to try this curious, but we think hopeful, experiment.

### The St. Paul's Decorations.

SOME of the daily papers continue to devote much space to correspondence on the decoration of St. Paul's. We have said before, and we say again, that with the tone and temper of some of the attacks made upon Sir W. B. Richmond, we have no sympathy whatever. Much of the criticism, however, is not of an offensive type, but arises from the natural and laudable desire of men of artistic sensibilities to preserve unimpaired a beautiful national monument, and to see that whatever decorative treatment it undergoes is in accordance with the intentions of its great designer. It seems unfortunate that no reply is offered by those responsible for the work. That Sir W. B. Richmond himself has not joined in the fray we do not complain; in his case, silence is undoubtedly the wisest and most dignified attitude. But the Dean and Chapter and the Decoration Committee might reasonably be expected to give the public some information, especially on these two points: First, what evidence have the trustees of the cathedral as to the wishes and intentions of Wren, which they profess to be carrying out? Second, what limit is to be placed upon the present decorative work? Will it stop short at the nave, or include the whole cathedral? The subscribers to the decorative fund, if no others, have surely a right to have these questions answered.

### London Boys and the Building Trades.

DR. WILLIAM GARNETT, the Secretary of the Technical Education Board of the London County Council, in presiding last Thursday at the annual conference of the National Association of Manual Training Teachers, referred to the report of the special Committee on the London Building Trades, which we notice at length

elsewhere. Dr. Garnett expressed very clearly the economic position when he said that if we let things take their course labour would be trained where rent was cheap, and consumed where rent was dear. That is a serious matter for London boys. As Dr. Garnett said, the sons of the London artisan had either to go in for an elementary commercial education, and become fourth-rate clerks, or start as errand boys and the like, and ultimately drift into the ranks of unskilled labourers. In the provinces the boys had greater facilities, and they came into London to take the places which London boys ought to fill. Dr. Garnett did not profess to be prepared with a solution of the difficulty, but he suggested that if they could extend the school age, and develop manual training classes and technical institutions, they might give their boys such a training in the use of tools and the application of geometry that, without actually making them bricklayers, joiners, or plasterers, they should be fit to take their place in a builder's yard and earn a living wage. Thus, he thought, might be overcome, to a great extent, the economic difficulty which now made employers of labour unwilling to take boys except on terms which were prohibitive to their parents.

### Blackburn's Gladstone Statue.

THE colossal statue of Mr. Gladstone, which is being designed by Mr. Adams-Acton for the Blackburn Corporation, was on view last week in the clay model at the artist's studio. The figure will be 11ft. high, and will stand on a pedestal of 10ft. The attitude represented will be characteristic of the late statesman. The statue is to be in Carrara marble, and it is hoped that it will be completed and in its place by next November. On the back of the pedestal will be inscribed a passage from Lord Salisbury's eulogium of Mr. Gladstone, delivered in the House of Lords. Mr. Herbert Gladstone, who recently visited Mr. Adams-Acton's studio, expressed himself delighted with the statue; he considered the likeness of his father to be one of the best he had ever seen.

### Report on the Art Students' Exhibition.

THE report which the examiners—Sir W. B. Richmond, R.A., and Mr. Selwyn Image—have presented to the Technical Education Board of the London County Council on the works of art presented for the recent exhibition and scholarship competition held by the Board, speaks favourably of the works submitted. The examples of bookbinding and metal work struck the examiners as being the best of the work inspected. In designing for tiles, wall papers, etc., they think the competitors have much to learn, and add:—"There is, for example, an exceedingly widespread predilection for what we can only characterise as the 'vermicular,' or 'squirmy' style of curvature in design, a style that is at once ugly, and a mere trick or artistic mannerism. It should be discouraged and stamped out as quickly as possible." On the whole, however, the work impressed them very favourably. The report concludes with a suggestion as to the kind of teachers required:—"The more there can be appointed for your schools teachers who are not only skilled workmen, but men of a fine artistic individuality, the more rapid and more thorough will be the advancement of your students. For it is undeniable that genuine art work, of whatever order, cannot be taught under mere rules and systems, but only by contact with a master working among his pupils, and advancing them by his personality and example. And the best work exhibited during this competition is the proof, plain and irresistible, of our statement."

### Catacombs at Moorfields.

AS was stated last week, the Roman Catholic Church of St. Mary's Moorfields, is to be demolished. The edifice is in the Italian style, and was built at a cost of about £26,000, from the designs of Mr. John Newman, in 1817. It comprises centre, north and south aisles, each of which terminates with a chapel. At the back of the high altar is

a screen of six marble fluted pillars of the Corinthian order, behind which is the fresco painting of the Crucifixion, which is the largest painting on the subject in England. It was the work of Signor Aglio, an Italian artist, but has been practically repainted by Henry Jacobs. In the sacristy there is a picture of the Sacred Heart, painted by Richard Doyle. In 1874 the church was threatened with destruction, owing to the extension of the Metropolitan Railway to Liverpool Street. In those days the building rested on wooden piles, which were so shaken by traffic, un contemplated by the architect, that a great deal of undermining and strengthening had to be done. It is not a very well-known fact that there are catacombs at St. Mary's, where hundreds of the "faithful departed" are buried; but such is the case. Some important personages are buried beneath the high altar; for instance, Bishops Poynter, Bramstone, and Gradwell. There is ample space for more, but modern authorities are not very favourable to burials in the heart of the City, although carried out in a way which would satisfy the most exacting of sanitary inspectors. When the church is demolished it is probable that every body will have to be removed, though where such a collection will ultimately rest is not yet decided.

### People's Palace Architectural Society.

A SOCIETY has been formed in connection with the Building Construction and Building Trade Classes at the East London Technical College, People's Palace, E. The membership is open to present and past students. The society's objects are the mutual advancement of its members through the reading and discussion of papers and visits to buildings and places of interest, and the promotion of social intercourse between students of the building classes. The preliminary meeting for the election of officers was held on February 25th. The first ordinary meeting was held on Saturday, March 25th, at 7.30 p.m., Mr. Francis R. Taylor in the chair. A short paper was read by Mr. Watson on "Bricks," in which the manufacture and properties of bricks were dealt with in a very interesting way. Mr. T. E. Kinch gave a short paper on "The Decay of Timber," and this contained some very useful notes on the subject. The first visit took place on Saturday last to Messrs Gibb's cement works, at Grays. The hon. secretaries of the new society are Messrs. F. Ferry and C. Weaver.

### The Antwerp Van Dyck Exhibition.

AN exhibition of the chief works by Van Dyck is to be held in Antwerp. The many pictures Van Dyck has painted in the course of his travels makes the collecting of his principal works for exhibition purposes a matter of considerable difficulty, although if the requests which King Leopold has addressed to Queen Victoria and the Emperor of Russia for the loan of the pictures in their possession are complied with, much will have been done towards overcoming the difficulty with which the organising committee of the exhibition has to contend. Three members of this committee recently visited England to take steps to secure as many of the works from the master's brush in the National Gallery and private collections as possible, but their negotiations are not yet concluded, so that it is impossible to say what pictures will be lent. A committee has been formed in London to further the aims of the exhibition in every possible way, and a similar committee is at work in Italy. The exhibition will probably comprise about 200 pictures, and negotiations are being made to insure this very valuable collection.

### The Alfred Memorial.

AT the annual meeting of the Hampshire Field Club and Archaeological Society, the Earl of Northbrook strongly condemned the proposal to erect a museum in the grounds of Wolvesey as a national memorial to King Alfred. Wolvesey, he said, should be preserved as an ecclesiastical place, as it is quite possible that it may again become the



residence of the Bishop of Winchester. He could not see that either Winchester or Hampshire would gain any particular advantage by having an archaeological museum at Wolvesey. He thought that, as Winchester was so near London, if a museum for Saxon antiquities was to be erected it ought to be in the metropolis, where it could be kept up with some prospect of success. In a letter to the "Times," Mr. Ronald S. Gower states that, in his opinion, Hyde Abbey, Winchester, is an appropriate place for erecting the memorial, which, he suggests, should take the form of a half-circle row of pillars, or a cloister, inside which should be a colossal cross inscribed to Alfred.

#### St. George's Church Spire, Liverpool.

ALTHOUGH the question of the disposal of the spire of St. George's Church, Liverpool, which is threatened with demolition, has been often discussed by those interested in its fate, the judgment of competent artistic or architectural authorities has not yet been obtained on the subject. The destruction of one of the most interesting of the civic landmarks of Liverpool, without first ascertaining the views of those qualified to give a verdict on the necessity of its removal, is certainly a great mistake. At their monthly meeting, on the 5th inst., the Liverpool City Council confirmed by 45 votes to 25 the general proceedings of the Finance Committee, who had, upon a report of the surveyor, decided to inform the Lord Bishop that they could not recommend that the tower and spire of the church should be retained, although an amendment for the referring back of the proceedings was ably proposed by Mr. W. E. Willink, and strongly supported by Sir William Forwood, Mr. J. Lister, who would have been glad to contribute £100 to making the tower substantial, Alderman Paull, Mr. M. H. Maxwell, Mr. M. C. Jones, and Alderman Garnett. As Mr. Willink pointed out the tower has stood since 1820 with no sign of weakness, and why it should be supposed that it cannot stand any longer cannot be conceived. He suggested that if it was absolutely necessary to remove the church to widen the thoroughfare which is at present only 44ft. wide, the tower should be allowed to remain. The protests made by two of the local architectural societies against its removal should have gone far to prevent such a thing happening.

**"Wireless" Telegraphy.** GREAT advances have lately been made with the so-called "wireless" telegraphy. As we announced last week, communication has been established between France and England, from stations situated at the South Foreland lighthouse, near Dover, and at the Chalet l'Artois, Wimereux, near Boulogne. The experiments have been most successful, for the various kinds of weather experienced—fog, high wind, and rain—have had no effect whatever. Professor J. A. Fleming, F.R.S., Mr. S. Flood Page, and Captain B. Baden-Powell have written to the "Times," expressing their appreciation of the great importance of Mr. Marconi's discoveries. The apparatus cost not more than £100 in all, and it has been found that the distance to which effective signalling is possible varies as the square of the height of the wire or rod attached to the receiving or sending apparatus; thus a wire 20ft. high carries the effective signal one mile, 40ft. high four miles, 80ft. sixteen miles, and so on. There would appear, therefore, to be practically no limit to the distance over which messages may be sent. The apparatus can be arranged to receive messages from a particular station or stations only,—a most important point. Mr. Marconi has placed a lightship on the Goodwins in instant communication, day and night, with the station at South Foreland, twelve miles away. This invention is not calculated to supercede the ordinary method entirely, but can, without doubt, save immense expense in the laying of submarine cables and should be of great use in signalling from ships to the shore, or from one to another. The French authorities are so gratified with the success of

the experiments that they propose, it is stated, to attempt to telegraph from Paris to the South Foreland, using the Eiffel Tower as their terminal.

#### Shelters for the Poor.

The Rev. James King, B.D., vicar of St. Mary's, Berwick-on-Tweed has sent us two pamphlets, one on "Ten Years' Work in Shelters for the Poor," and the other on "Fresh Light from the Holy Fields." These interesting pamphlets are published (price 6d.) on behalf of the Berwick Winter Shelters for Poor Lads, to which the profits realised will be given. Mr. King, who is a lecturer for the Palestine Exploration Fund, has for over twelve years performed excellent work in providing shelter for the deserving poor, and his pamphlet is the work of an authority on this subject. The excellent work performed by the Palestine Exploration Fund is not so fully known as it should be. Now that the subject has just lately been brought home to our readers by a lecture on "Ancient and Modern Buildings in Palestine," delivered by Mr. A. Beresford Pite, F.R.I.B.A., to the Architectural Association, and by a paper on "Some early Christian Churches in Palestine," read by Mr. A. C. Dickie, before the Royal Institute of British Architects, they should find plenty of interest in Mr. King's pamphlet, while helping to promote the solution of that great problem—the care of the poor.

#### Jerry-Building in Aberdeen.

WE reported in our issue last week a public meeting held in the Trades' Hall, Aberdeen, for the purpose of drawing attention to the prevalence of jerry-building in the town. If the promoters of the movement can obtain some improvement in this matter, a great service will have been done to the people of Aberdeen. But in any case it is a good thing that attention has been called to this important subject. Other towns may be aroused to deal with similar malpractices in their own locality. The Aberdeen "Daily Free Press" suggests that the Town Council might well consider the appointment of an inspector of buildings, on the model of the system in Edinburgh, where the powers regulating buildings are administered by the Dean of Guild Court, assisted by the ten members elected annually by the Magistrates and Council.

#### Insanitary Property in Liverpool.

AT the monthly meeting on the 5th inst., the Liverpool City Council had under consideration two reports of the medical officer of health with regard to premises that ought to be demolished. It appears that the Council are seeking the consent of the Local Government Board to borrow £50,000 for the purchase of this property, consisting of about 700 houses in Fontenoy Street, Scotland Road, and Toxteth Park. The death rate in the whole district to be dealt with was forty-three per thousand last year. The Insanitary Property Committee pulled down last year 471 houses in Liverpool, but only sixty-three houses under a rental of £12 a year were erected. In Vauxhall Ward during the past twelve years the death rate had been increased from 27 to 41 per thousand, for the poor people had been driven into property that was sanitary, and had rendered it insanitary. Some curious arguments were brought up at the Council meeting in support of the action of the Committee. One statement was that the landlords had in the past neglected their duty in the city. True, but what excuse was that for the committee and their inspectors? Another statement was that if the clergy would only induce the people to go and live further out of the city, they would do a great and good work. Things have come to a pretty pass in Liverpool, if the representatives of the people wish to excuse themselves by the delegation of their duties to the clergy. The Local Government Board would do well, before they sanction the expenditure of the money required, to obtain a definite scheme for the remedy of this most unsatisfactory state of affairs.

## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

#### LECTURES BY WILLIAM MORRIS.

In reply to W.L.R. (Stroud) and others, the booklet "Art and the Beauty of the Earth," by William Morris, to which reference was made in our issue of March 22nd, is published by Longmans, Green and Co., 39, Paternoster Row, London, E.C.

#### FITTING UP OF COW HOUSES.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—May we ask through your valuable columns if you can recommend a book on the sanitation of Cow Ship-pens.—Yours truly, Tideswell. A. and H. H.

There is no book published dealing with this subject. The fitting of cowhouses, however, is fully treated in F. E. Colman's work on stable sanitation and construction, published by Messrs Spon. For the fitting of cow pens on cattle ships there are probably some Board of Trade regulations, but of this I am not certain. R. S. A.

#### BOOKS ON BRICK AND STONE WALLS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Can you give me some simple rule for determining the thickness at different heights for retaining walls of brick or stone; and is there any book which deals practically with the subject?—Yours, &c., Manchester. "PERPLEXED."

Rivington's "Building Construction," Vol. IV, price 15s. (Longmans, Green and Co.); and Middleton's "Stresses and Thrusts," price 5s. (Batsford), deal in a practical manner with the subject mentioned.

#### SYSTEMS OF LETTERING.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Could you, through the medium of your Enquiry column, give me the price and publishers of any good book with the different styles of lettering, &c., for putting on plans.—Yours, &c. F. J. M. Sheffield.

"Alphabets, Old and New," by Lewes F. Day, price 3s. 6d., published by B. T. Batsford, 94, High Holborn, London, is the book that will probably best suit your purpose.

#### ESTATE DUTY.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Could you inform me what is the percentage of allowance from the gross valuation of property for probate, and also for estate duty? Or could you give me the name of a book treating upon such allowances?

Yorkshire. L. J.

You would do well to procure a copy of the Finance Act of 1894, by which real and personal property were placed approximately on the same footing. By Section 7 (5) of that Act the principal value of any property for the purpose of probate shall be estimated to be the price which, in the opinion of the Commissioners of Inland Revenue, such property would fetch if sold in the open market at the time of the death of the deceased. Provided that, in the case of agricultural property, where no part of the principal value is due to the expectation of an increased income from such property, the principal value shall not exceed twenty-five times the annual value as assessed under Schedule A of the Income Tax Acts, after making such deductions as have not been allowed in that assessment and are allowed under the "Succession Duty Act, 1883," making a deduction for expenses of management not exceeding 5 per cent. of



the value so assessed. This principal value is very generally taken at from twenty to twenty-five years' purchase of nett rental value, or, if the property be "in hand," of the value at which assessed to Property Tax; and the deductions usually allowed (in either case) are land tax, fire insurance, and average annual repairs. It is practically impossible to state any "percentage of allowance," as every case must of necessity stand upon its own merits. —F. S. I.

### BOOKS ON PLUMBING AND ON PROFESSIONAL CHARGES.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Can you tell me exactly the best book on domestic plumbing—kitchen boilers, &c.—and on heating in general? Is there any book on the subject of professional charges that would be of any use when beginning as an architect?—Yours truly,

Newcastle-on-Tyne.

B. B.

"The Plumber and Sanitary Houses," by S. Stevens Hellyer, price 12s. 6d., published by B. T. Batsford, 94, High Holborn, London, is one of the best books on domestic plumbing. For hot-water work, Hood's "Practical Treatise upon Warming Buildings by Hot-Water," rewritten by Frederick Dye, price 15s., can be recommended; a smaller and more elementary book that might suit your purpose, is "Hot Water Apparatus," by F. Dye, price 1s. 6d.; both these are published by E. and F. N. Spon, 125, Strand, London. "Specification," price 5s., contains a chapter on professional charges.

### JOINT DRAINAGE.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—I shall be glad if you will advise me through the Enquiries column on the following points with regard to joint drainage:—

A and B are owners of adjoining houses, A's being a corner house with stable at rear, the two houses and stable are drained through one drain (an old one) which runs across A's land into a sewer in the side street. This drain has become blocked. (1) If A clears the drain or by compulsion from the sanitary authorities makes any alteration in the joint drain, can he recover any portion of the expense from B, if so, what notice should be given by A to B and what is the course of procedure in the event of B refusing to bear any of the expense? B maintains the stoppage is caused by the drainage from stable. (2) Should the sanitary authorities require separate drainage, can B legally claim to lay his new drain across A's land or can A refuse and thus compel B to drain into sewer in main road? (3) Can the sanitary authorities require separate drainage for the stable, the house and stable being let to same tenant (stable by three years agreement and house weekly)? House is sublet by tenant.—Yours faithfully,

C. S.

Finsbury Park, N.

(1) The present drain where it carries from more than one house, through A's land, is a public sewer, repairable by the Local Authority, which cannot call upon A to do the necessary work nor upon either A or B to bear any of the cost. (2) The authority can stop the old drain (sewer) and insist on separate drainage, in which case B must make a separate connection without trespassing on A's land. (3) The authority can, and should, insist on separate drainage for house and stable, that is, if we read the question correctly that these are really quite distinct from one another though temporarily in the same tenancy.

G. A. T. M.

**A Memorial to the late Empress Frederick.**—A Chapelle Expiatoire is to be erected at Geneva. The Emperor of Austria will lay the foundation-stone on the anniversary of the late Empress's death. It will be a Gothic building, to hold 400 to 500 persons. The design will be a miniature of the Votiv-Kirche, in Vienna, lately described and illustrated in our columns.

## Professional Practice.

**Cardiff.**—At the annual meeting of the Cardiff Young Men's Christian Association, it was announced that a new building for the association was to be erected on a site adjoining Cory Hall, at a cost £15,000. The building will have a frontage of 70ft. and a depth of 100ft. Plans have been prepared for a five-storey building, to include a restaurant, a reading-room, a lecture hall to seat 350 people, a library, classrooms, baths, a gymnasium, and cycle stables. Space is also being reserved for fifteen bedrooms. The contract for the new building has been let to Messrs. Turner and Sons.

**Gosport.**—An isolation hospital, which has been erected from plans by Mr. B. E. Bolshaw, architect, of Southport, was recently opened at Gosport. The hospital stands in the centre of a field of two acres. There are three distinct buildings, the hospital itself being quite apart from the administrative and laundry blocks. Red local kiln bricks have been used in the construction, and the roof is covered with Major's patent Roman pattern tiles. Internally there are two distinct hospitals, each having an entrance of its own. Separate wards for men, women, and children are provided at both ends of the building, that at the western end for women being 36ft. in length by 22ft., while that for men is 24ft. by 16ft. The eastern end is of a precisely similar design, the exception being that the women's ward is 19ft. in width. Nurses' rooms are also provided, and a verandah 40ft. long by 10ft. surmounts the necessary offices. All the rooms are 13ft. in height, and the pitch pine floors are so laid that the nails are not visible. In the administrative block are a nurses' sitting-room on the first floor, a second storey with two large and three small bedrooms, and an attic floor above. In the laundry block are a bathroom, disinfecting apparatus, an ambulance and van house, and a mortuary.

**Montrose.**—A reredos has been erected to the memory of the Rev. Dr. Woodward in St. Mary's Episcopal Church, Montrose. It is about 15ft. wide by 12ft. high, and extends the full width of the triple-lancet window in the east gable. The base to the height of the super-altar is built in courses of Caen stone enriched with carved "paterae" and floral ornament. The super-altar is of Victoria red marble, and over it rises the central apartment of the reredos, which is the width of the altar, and is divided into three carved and deeply-recessed pointed arches, supported by columns of green marble with carved capitals above. The arches are moulded and carved, with crocketed gables above, the central one rising highest and being finished with a decorated cross. These three panels are divided and flanked by buttresses running up between the gables and surmounted by the figures of four angels. In front of the central panel, and on the super-altar, is placed the tabernacle, finished with crocketed gable and cross, and an oak door with brass mountings. On either side of the central portion of the reredos the flanking spaces recede somewhat, and are treated in a less ornamental manner than the centre—the panels being arched, with spandrels containing leaf ornament, resting on carved capitals and columns, and finished with a straight but carved cornice. The three central arches are filled in with gold mosaics and "Opus Sectile" work by Messrs. James Powell and Sons, of Whitefriars, London, the subjects representing in the centre the Blessed Virgin and Child, surrounded by adoring angels, with the shepherds and Magi in the side panels. The four side arches are fitted in with figures of the Four Evangelists standing out in relief on carved corbels, with the symbols. The material throughout is Caen stone, with the coloured marble shafts and mosaics referred to. The designs for the reredos were prepared by Messrs. Ross and Macbeth, of Inverness, and the work was done by Mr. Alexander Neilson, sculptor, of Dundee.

**Musselburgh.**—The Town Council has under consideration plans prepared by Mr. W. Constable, architect, for the reconstruction of the municipal buildings, offices, and town hall, at a cost of £3500, to which has to be added £350, the price of a plot of ground. The plans provide for a Town Hall to seat 1000, and having a floor space nearly three times the size of that of the present hall, a council chamber double the size of the present one, a police court and police accommodation.

**Newport, Fife.**—The students' section of the Dundee Institute of Architecture recently visited the Vickersford Cemetery, Newport, and inspected the Memorial Chapel erected there by Sir John Leng, M.P. Mr. T. Martin Cappon, F.R.I.B.A., President of the Institute, and architect for the chapel, met the students, and gave an interesting description of the building. Mr. Cappon pointed out that the plan of the chapel was very similar to the smaller chapels very often attached to cathedrals, more especially the French, and, while the general effect aimed at in the design was delicacy and refinement, care was taken in the selection of the building materials and in the construction to insure durability. The working of the Caen stone, jointing of mason work, oak roof, and other items, were described in detail. The style of the building throughout may be called Decorated Gothic, with a feeling of earlier work, much variety being introduced into the details of the leading features. The apsidal end of chapel is divided into five bays by massive buttresses, and between these are decorated windows, which, along with the other windows, all differ in design. The cloister is treated in three bays, divided by buttresses, and surmounted by crocketed gables, the work being connected with the main building by curved flying buttresses, which act as a support to the groined ceiling. The eaves are finished with an arcaded and weathered cornice, relieved at intervals by strongly marked gargoyles, while the whole is surmounted by a high-pitched roof and tapering fleche, all finished in oak and teak, covered with heavy lead dressed over rolls. The interior is finished in Caen stone, with vaulted ceiling. The side walls are divided into four bays by moulded responds, from which springs the vaulted ceiling. The floor is finished in mosaic. Much of the carving was executed by Mr. James Bremner, sculptor, and the whole building and details afforded scope for interesting sketches and photos. The lodge and gateway, with wrought-iron gates, of which Mr. Cappon was the architect, were also inspected.

**Perth.**—A new Congregational Church was opened last Saturday. It is built of red stone in Gothic style. The main entrance is from Kinnoull Street. On each side of the vestibule are stairs leading to the gallery, while on the left and right of the entrance are ladies' and gentlemen's cloakrooms. The interior of the building is about 51ft. long and 44ft. wide, with a slight incline upon the floor. There are circled seats at each side underneath the gallery. Immediately behind the pulpit is the organ. The pulpit is panelled and moulded, and lit by two standard lights. The gallery is of a horseshoe pattern, with passage running round each side. The building is lighted by four Gothic windows with tracery, and a large tracery window at the end of the church 15ft. wide. All the mouldings in connection with the ceiling are treated in ivory white. The building is seated for 650. The architects were Messrs. Steele and Balfour, of Glasgow.

**Sedburgh.**—Tinkle Street has been widened to six yards. At the north-east corner of the churchyard in this road a fountain and cattle drinking trough have been erected. The fountain, of yellow freestone, is Renaissance in style. There is a figured panel on the top representing the Saviour and the Woman of Samaria, which was modelled by George Finwith. The work was designed and carried out by Mr. John F. Curwen, of Kendal; Messrs. Pennington, of Kendal, being the contractors.



## Correspondence.

### "A PLAN OF LONDON."

To the Editor of THE BUILDERS' JOURNAL.

SIR,—In your issue of the 29th ult. (supplement), you mention the plan being made at the instance of the L.C.C., and say that "it aims at supplying a complete system of land registration," &c. I should like to hear the views of others as to whether there may not be some ulterior motive, not apparent on the face of the specious circular sent by the L.C.C. to owners of ground rents, for the purpose of this plan, and in which information respecting their property is requested. I have advised my clients not to supply any information until the object in view is clearly proved, in case it be a Progressive move for taxation purposes.—Yours, &c.,  
E. W. H.

## Views and Reviews.

### A CHART OF IMPROVEMENTS.

We have received a map of metropolitan railways, tramways, and miscellaneous improvements, deposited at the London County Council for the Session 1899. The map shows at a glance the railways in operation in or about London, railways sanctioned, railways proposed, tramways in operation, and tramways sanctioned. The plan of illustrating proposed improvements by means of a chart is a very good one, as it is so much easier to gain an accurate idea of the extent of intended alterations and additions from a diagrammatic representation of them than from a printed description.

A Map of Metropolitan Railways, Tramways, and Miscellaneous Improvements. Price, 3s. 6d. Published by George Philip and Son, 32, Fleet Street, London.

### PRICES FOR BUILDERS.

Lockwood's Builders' and Contractors' Price Book for 1899 is undoubtedly a very comprehensive work, and contains much information of value to the builder, architect, contractor, and engineer. The section dealing with electric lighting has been considerably improved. Not the least useful items in the book are the texts of the London Building Act, 1894, and the Amendment Act, 1898. A list of the district surveyors of the metropolis, with the boundaries of their districts, and the regulations made under the Metropolis Water Act, 1871, are also given. It is, of course, impossible to compile a universal price book, and the prices here given are based primarily upon those obtaining in London and the neighbourhood; contractors in the provinces, therefore, will need to make certain modifications. For London contractors especially, the work should prove invaluable.

"Lockwood's Builders' and Contractors' Price Book, for 1899." Price 4s. London: Crosby, Lockwood and Son.

### CHEMISTRY FOR PHOTO-GRAPHERS.

This book can hardly fail to be of practical value to the photographer who is not satisfied with simply a knowledge of how to develop his plates, and to tone and fix his prints. The first chapter contains some very useful hints on chemical cleanliness, and the several processes of developing, printing, &c., are dealt with in the following chapters. Many photographic formulæ are given, and not the least useful item in the book is a cyclopædic index, which gives the name of every chemical used, and the page on which it is mentioned, its synonym, symbolic formula, molecular weight, and solubility. If the author had said a little more about theoretical chemistry, the book would have been made more valuable to the advanced photographer without any loss to the beginner.

"Chemistry for Photographers." By C. F. Townsend. Second Edition. London: Dawbarn and Ward, Ltd. Price 1s.

### AN ELECTRICIAN'S POCKET BOOK.

This excellent little work supplies a large amount of useful information on the ordinary and commoner forms of electrical work, with which a practical electrician may be expected to come in daily contact. It also provides information likely to be required by those who have to attend to steam, gas, and oil engines, dynamos, and storage batteries, etc. The book contains a useful table of the principal electric supply companies of the United Kingdom, showing the normal price charged per unit. A special feature is the introduction of blank forms for particulars for estimating for work and materials, and also blank requisition and reminder forms, perforated to allow of their removal when filled up.

"The Practical Electrician's Pocket Book for 1899." Edited by H. T. Crewe, M.I.M.E. 1s. net. London: S. Rentell and Co.

### SOME ARTISTIC GIANTS.

The intention of the writer in producing this book is stated in the preface to be "to give in brief compass an insight into the essential characteristics of each of the masters treated, so that the traveller may be able to enjoy them for what they are, without looking for merits in one which can be found only in another." The masters treated are Raphael, Michelangelo, Leonardo da Vinci, Titian, Correggio, and Botticelli, and the author's principal aim has led him to lean rather too strongly on what he considers to be the distinctive qualities of each painter, and to sometimes manufacture rather forced descriptive phrases fitted to his conceptions.

The book commences with an introduction describing briefly and vividly the environment of the painters of the Renaissance, in which are a few statements which seem to be coloured by the theory set forth in it. Surely Simon de Montfort's crusade against the Albigenses was undertaken as against heretical doctrines, not because troubadours "sang too sweetly of woman's love and earthly beauty" (p. 2). And it is scarcely true that the Renaissance artists did not set abstract perfection before them as an end (p. 7). Raphael's and Michelangelo's works are proof of the opposite, as well as those of many of the later painters, as regards intention at all events. It was only the earlier painters whose "purpose was the expression of the individual countenance and form," of those, that is to say, who had not acquired full mastery of their craft. Below each master's name is the date of his birth and death, an excellent detail, as keeping before the reader's mind the overlapping of the lives of the artists treated.

With the commencement of the account of Raphael the author appears to fall into a dithyrambic exaltation, and looks at his subject through clouds of incense which rise from the altar which he had erected, etherealising and idealising him. For instance, the ascription of "perfect purity" to Raphael is scarcely born out by historical facts, and at the same time he is called a great decorator, and credited with the power of expressing space in a supreme degree, which is a disadvantage in decorative work.

While appreciating Michel Angelo very highly at the time he is dealing with him, the author appears to judge his power of composition almost entirely from the "Last Judgment," painted in his old age. It may be true that the compositions of the Sistine ceiling are "sometimes confused," but an attentive examination will show that those which thus fail were the first executed, the later ones being larger in scale, and harmonious and intelligible at the first glance; quite bearing out the author's words: "The grandest piece of decoration in the world is the Sistine's vault."

Another instance of his *parti pris* is the statement on p. 108, that "the Florentine rarely saw the perfect beauty of a sunset, but the Venetian lived in an ever changing pageant of colour." Those who have seen the sunset from S. Miniato or Bellosguardo, or even from the Ponte S. Trinita, when the hills of Carrara stand blue against the golden heavens, and the colour palpitates to the zenith,

enhanced by the contrast of the purples of the nearer hills, will feel that some other reason is required to explain the inferiority of Florentine to Venetian colour. And few people will be found to agree with the opinion that Titian's portraits are finer than those of Velasquez. Here, in England, we have pictures which prove the contrary, but a visit to the Gallery of the Prado at Madrid must convince anyone who has eyes to see that in that particular direction the best of the Italians are not his equals. In the notice of Correggio equality is claimed for him with the greatest painters, the author's enthusiasm evidently carrying him away. He says that Correggio "is no more open to the charge of immorality than the wanton flower that is kissed by the breeze;" that he is simply a child of Nature—a theory which the current story about the way he came by his death hardly bears out—that "the feelings which he expresses are joy and love, and if they are immoral, Heaven must be a place of exceeding wickedness"—to which one is inclined to reply that the Mohammedan heaven is the only one which can contain Correggio's "Antiope," as shown in the pictures in the Louvre. But, notwithstanding these blemishes, caused by too great enthusiasm for the subjects of the essays and consequent special pleading, the book is a good book on the whole for the persons whom the writer aims at interesting and instructing, and should help them to see that a picture may be something more than a pretty thing to glance carelessly over and then pass on, that the painter may have put part of his soul and his heart's blood into it, and that something of the history of the man and of his age may be divined by those who delve deeply enough.

Certain of the sentences well express artistic truths, an instance of which may be quoted from p. 28:—"In Art the decorative element is the universal, appealing to all times and to all nations; while the illustrative element is transitory, and when we lose interest in the events depicted, we lose interest in the work as an illustration; and then, if it still attracts, it must be solely on account of the decorative elements which it contains." This is very good, and it is a pity that the author's gift of rhetoric has sometimes led him to amplify rather than to condense what he has to say, thereby really weakening the effect which he would otherwise produce.

S. S. G.

"Renaissance Masters": The Art of Raphael, Michelangelo, Leonardo da Vinci, Titian, Correggio, and Botticelli. By George B. Rose. New York and London: G. B. Putnam's Sons. The Knickerbocker Press, 1898.

**A New South Pier for Lowestoft** is proposed to be run out opposite Claremont Road at an estimated cost of £25,000; its length will be 250 yards.

**A Marble Bust** of the late Rev. Dr. Moulton is to be executed by Mr. Adams-Aulton, and when finished will be placed in Wesley's Chapel, City Road, London.

**New Workhouse Infirmary for Norwich.**—At a meeting of the Norwich Board of Guardians it was proposed to erect a new workhouse infirmary at an estimated cost of £25,000.

**A new Workhouse Infirmary at Leicester** is proposed to be erected, owing, we understand, to the action of the Local Government Board, who will not assent to an extension of the present workhouse.

**Inglesham Church, Wilts**, is badly in need of restoration. It is about 700 years old. The Rev. O. Birchall, rector of Buscot, Lechdale, is appealing for funds to carry out the necessary renovations.

**Rebuilding Operations at the Pigeons Hotel**, Stratford, are being carried out under the supervision of Mr. Henry Poston, architect, of 39, Lombard Street, London; the cost of the work is estimated at about £13,000.

**Statues in Victoria Hall, Leeds**, of the late Sir Edward Baines and Mr. Robert Hall have been removed from a recess in which they have stood, to another part of the building, where they will be better seen by the public.



## CURRENT PRICES.

## OILS AND PAINTS.

Castor, French	per cwt.	1 4 0	—
Colza, English	per cwt.	1 2 6	—
Copperas	per ton	2 0 0	—
Kerosine, water white	per cwt.	1 5 0	1 15 0
Lard	per ton	28 10 0	32 10 0
Linseed	per cwt.	0 18 0	—
Nestfoot	per gal.	0 2 6	0 4 0
Paraffin	per cwt.	0 10 0	0 19 0
Pitch	per barrel	0 8 0	—
Tallow, Town	per cwt.	1 1 6	—
Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 13 0	—
Glue	per cwt.	1 19 6	2 18 6
Lead, white, ground, carbonate per cwt.	per cwt.	0 17 0	—
Do. red	per cwt.	0 17 0	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	3 8 0	3 12 0
Do. sticklac	per cwt.	2 2 6	2 15 0
Pumice stone	per ton	0 8 9	—

## METALS.

Copper, sheet, strong	per ton	81 0 0	—
Iron, bar, Staffs in London	do.	6 15 0	8 10 0
Do. Galvanised Corrugated sheet	do.	11 15 0	—
Lead, pig, Spanish	do.	14 10 0	—
Do. English common brands	do.	14 13 9	—
Do. sheet, English, 6lb.	per sq. ft. and upwards	16 10 0	—
Do. pipe	do.	17 5 0	—
Nails, cut clasp, sin. to 6in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Straits	do.	119 5 0	113 15 0
Do. English ingots	do.	112 0 0	—
Zinc, sheets, English	do.	27 10 0	26 10 0
Do. Veille Montaigne	do.	31 0 0	—
Do. Spelter	do.	27 17 6	28 2 6

## TIMBER.

## Soft Woods.

Fir, Dantzic and Memel	per load.	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Laths, log, Dantzic	per fath.	4 10 0	5 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Deals, Archangel 2nd & 1st per P. Std.	do.	8 15 0	13 10 0
Do. 4th & 3rd.	do.	8 5 0	8 15 0
Do. do. unsorted	do.	7 5 0	8 5 0
Do. Riga	do.	14 15 0	8 10 0
Do. Petersburg 1st Yellow	do.	6 15 0	—
Do. do. 2nd	do.	12 0 0	—
Do. do. Unsorted	do.	8 0 0	10 10 0
Do. do. White	do.	7 15 0	9 15 0
Do. Swedish	do.	8 5 0	14 10 0
Do. White Sea	do.	10 15 0	18 0 0
Do. Quebec Pine, 1st.	do.	15 5 0	16 15 0
Do. do. 2nd	do.	7 0 0	7 15 0
Do. Canadian Spruce, 1st	do.	7 15 0	9 0 0
Do. do. 3rd & 2nd	do.	6 7 6	6 10 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	do.	7 5 0	8 10 0
Flooring Boards, 1 in.	per square	0 11 3	—
Do. prepared 1st	do.	0 10 6	0 10 9
Do. 2nd	do.	0 9 6	—
Do. 3rd & 4th	do.	0 9 6	—

## Hard Woods.

Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 0 0	5 0 0
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, lin., Cuba	per ft. sup.	0 0 4	0 0 4 1/2
Do. Honduras	do.	0 0 4 1/2	—
Do. Tobacco	do.	0 0 4 1/2	—
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 4 15/16	—
Do. African	do.	0 0 3 3/8—25/32	—
Do. St. Domingo	do.	0 0 5 1/16	—
Do. Tobacco	do.	0 0 3 21/32	—
Oak, Dantzic and Memel	per load	3 5 0	3 15 0
Do. Quebec	do.	4 12 6	—
Teak, Rangoon, Planks	do.	8 10 0	13 15 0
Wainscot, Riga (Baulk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub. ft.	0 1 9	0 2 7

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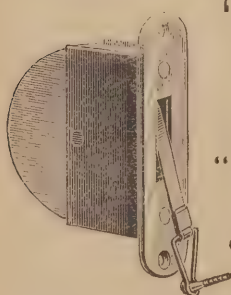
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## COMING EVENTS.

## Wednesday, April 12.

EDINBURGH ARCHITECTURAL SOCIETY.—Mr. J. Fairweather, of the Glasgow Architectural Association, on "Minor Points in Practice." 8 p.m.

SOCIETY OF ARTS.—Ordinary Meeting at 8 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Inspection and Demonstration at Disinfecting Station, Lot's Road, Chelsea. Conducted by Dr. Louis Parkes. 3 p.m.

SANITARY INSTITUTE.—Miss Alice Ravenhill on "Practical Hygiene Teaching in Elementary Schools." 8 p.m.

LIVERPOOL ENGINEERING SOCIETY.—Mr. Malcolm Blair on "The Difficulties that Manufacturing Engineers have to Undergo in Estimating and Working to Civil Engineers' Specifications." 8 p.m.

## Thursday, April 13.

SOCIETY OF ARTS.—Mrs. Philip H. Newman on "Some Goldsmiths and their Works," with lime-light illustrations.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Inspection and Demonstration at Beddington Sewage Farm. Conducted by Mr. T. Walker. 3 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Mr. W. C. Tyndale on "House Drainage." 8 p.m.

INSTITUTION OF ELECTRICAL ENGINEERS.—"The Hissing of the Electric Arc," by Mrs. Aytton (conclusion of discussion). "Experiments on Alternate Current Arcs by Aid of Oscillographs," by Messrs. W. Duddell and E. W. Marchant (discussion, to be opened by the authors with an exhibition of experiments). 8 p.m.

SOCIETY ON ANTIQUARIES.—8.30 p.m.

## Friday, April 14

ARCHITECTURAL ASSOCIATION.—Mr. F. W. Pomeroy on "Modelling as Applied to Architecture," with practical demonstrations. 7.30 p.m.

ROYAL INSTITUTION.—Professor A. W. Rucker on "Earth Currents and Electric Traction." 9 p.m.

INSTITUTION OF JUNIOR ENGINEERS.—(Westminster Palace Hotel.)—Paper to be read and discussed: "Piles and Pile-driving," by Mr. W. H. C. Reid. 3 p.m.

GLASGOW AND WEST OF SCOTLAND TECHNICAL COLLEGE AND ARCHITECTURAL CRAFTSMAN'S SOCIETY.—Prize paper and criticism of papers by D. Mor.

## Saturday, April 15.

INSTITUTION OF JUNIOR ENGINEERS.—Visit to the works of the new Vauxhall Bridge. 3 p.m.

SANITARY INSTITUTE (Demonstrations for Sanitary Officers).—Inspection at Beddington Sewage Farm. 3 p.m.

PERTH ARCHITECTURAL ASSOCIATION.—Visit to Free Middle Church, Tay-street. 2.30 p.m.

## Monday, April 17.

VICTORIA INSTITUTE.—Meeting at 4.30 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Mr. G. Reid, on "Sanitary Appliances." 8 p.m.

SOCIETY OF ARTS.—(Cantor Lectures.)—Prof. H. R. Proctor, on "Leather Manufacture." Second lecture. 8 p.m.

## Tuesday, April 18.

SOCIETY OF ARTS.—(Applied Art Section.)—Meeting 8 p.m.

PERTH ARCHITECTURAL ASSOCIATION.—Visit to Free Middle Church, Tay Street. 2.30 p.m.

## Wednesday, April 19.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers.)—Inspection and demonstrations in the Parish of St. George's, Hanover Square, conducted by Mr. A. Taylor. 2 p.m.

SOCIETY OF ARTS.—Ordinary Meeting. 8 p.m.

## TENDERS.

BERWICK-UPON-TWEED.—For the erection of a police-station, Church-street for the Town Council. Mr. R. Burns Dick, architect, 55, Northumberland-street, Newcastle:—

Excavating, Masonry, &c.—Elliot and Son, Berwick*	£2,694 10 3
Carpentry and Joinery.—Jno. Burn, Spittal	965 19 8
Slating and Plastering.—Rule and Sons, Tweedmouth*	460 13 4
Cementing.—Turner and Son, Berwick*	289 0 0
Plumbing, &c.—Geo. McAdam, Berwick*	469 6 0
Smithing.—Elliot & Sons (sub-contract)*	100 2 0
Painting.—Richardson & Co., Berwick*	52 0 0
	£5,041 12 0

\*Accepted.

BOSTON (Lincolnshire).—For erecting a house on Spilby-road, Boston, for Mr. B. J. Kent. Mr. Jas. Rowell, architect, Boston. Quantities by the architect:—

J. Lucas	£740 0	W. Greenfield	£268 10
Parker and Son	675 0	C. Jessop	568 10
J. W. Pinder	666 0	[All of Boston.]	

\*Accepted.

CROSS HANDS.—For the erection of a pair of semi-detached Houses, near Cross Hands, Carmarthen, for Mr. David Evans, Mr. Arthur I. Jones, architect and surveyor, Llandarog, Carmarthen:—

D. Morgan, Cross Hands*	£480 10 0
G. Mainwaring, Cross Hands*	478 18 0
	£958 18 0

\*Accepted.

LEVEN, N.B.—For the erection of twenty-four houses, Lumphinnans, for the Duif Co. Company Limited. Mr. J. Houston, architect, Dunfermline. Quantities by the architect:—

Building.—Wm. B. Street	£1,100
Joinery.—Thomas Laing	792
Plumbing.—Binning and Sons	101
Plastering.—Paul and Sons	350
Slating.—Paul and Sons	250

LONDON.—For alterations, additions, and fittings at the "Crooked Billet," public-house, King David-lane, Shadwell, E., for Messrs. Erbach Bros. Mr. Fred. A. Ashton, architect, 177, Romford-road, Stratford, E.:—

Alterations, &c.	Fittings.	Total.
W. Harper	£1,001	£2,938
J. Wall and Co.	948	905
J. and H. Cocks	900	1,799
Williams and Sons	827	900
W. G. Maddison	835	804
A. E. Symes	786	761

LOSSIEMOUTH.—For the building of a Lifeboat House at Lossiemouth, Mr. Robert B. Pratt, A.R.I.B.A., County Bank House, Elgin, architect:—

Mason.—Mr. Legge, Fochabers	
Carpenter.—Messrs. Ritchie and Sons, Lossiemouth	
Plumber.—Mr. James Ross, Elgin	
Slater.—Mr. George Murray, Lossiemouth	
Plasterer.—Mr. McIvor, Elgin	
Painter.—Mr. Forsyth, Elgin	
	£250.

LUTON.—For the erection of Wesleyan Schools, Waller-street. Messrs. J. R. Brown and Son, architects, 17, Market-hill, Luton:—

George Smart	£4,800	T. and E. Neville,	
W. G. Dunham	4,498	Castle-street*	£4,190
G. W. Pryer	4,350	[All of Luton.]	

\*Accepted.

MANCHESTER.—For the erection of a Wesleyan Church, Ladybarn. Messrs. Greaves and Burbridge, architects:—

Geo. McFarlane	£23,437	J. Rylance and Sons	£23,335
Burgess and Galt	3,400	Wm. Shaw	3,292
Wm. Ives and Co., Shipley*	3,343	A. R. Bullivant and Sons	3,240

\*On revised estimates being asked for, Messrs. Ives and Co.'s tender was accepted.

PRUDHOLE-ON-TYNE.—For re-building the "Dr. Syntax" Hotel. Mr. R. B. Dick, architect, 55, Northumberland-street, Newcastle:—

N. Maughan	£4,206 9 3	Armstrong	£3,511 11
Smithson & Son	4,170 0 0	S. Sheriff, S.	
J. & W. Lowry	4,082 17 0	Shields*	3,473 0 0
T. & R. Lamb	3,791 3 3		

\*Accepted.

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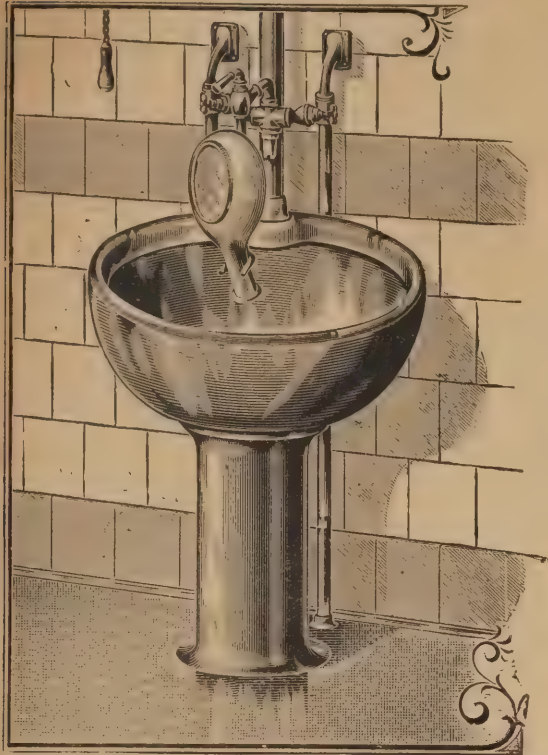




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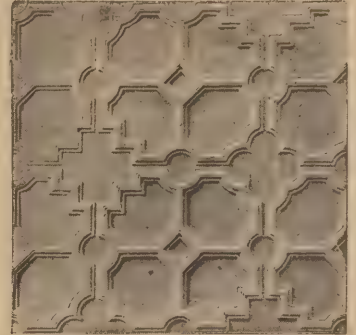
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 T. Swindall ... 784 W. Packwood ... 745  
 T. and C. Berrill ... 772 Dickens Bros. ... 703  
 E. Mitchell ... 760 Hacksley Bros. ... 703  
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**SOUTHILL (Yorks).**—For the erection of two blocks of cottages, Leeds-road, for Mr. Thomas Newsome, Dewsbury. Mr. H. H. Hall, architect, Shaw Cross, near Dewsbury. Quantities by architect:—

Masonry.—Ellis and Sons, Osset\* ... £810  
 Joinery.—Albert Day, Hangingheaton\* ... 231  
 Plumbing.—B. Scott, Leeds-road\* ... 36  
 Plastering.—Wm. Parker, Heckmondwike\* ... 70  
 Slating.—W. H. Thompson, Batley\* ... 65

**STAPLEFORD.**—For the erection of a chapel. Mr. Hy. Harper, architect, 8, Beasmarket-hill, Nottingham. Quantities by the architect:—  
 C. Moul, Stapleford ... £1,700 0 0

**WORKINGTON (Cumberland).**—For extensions to Vulcan's-lane Stores, Workington, for the Bee Hive Co-operative

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 Joinery.—J. Steel\* ... 820 0 0  
 Slating.—Lythroe and Sons\* ... 77 7 6  
 Plastering.—G. Mann\* ... 176 0 0  
 Plumbing.—D. M. Walker\* ... 122 0 0  
 Painting.—W. T. Sherwood\* ... 65 0 0

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\*Accepted.  
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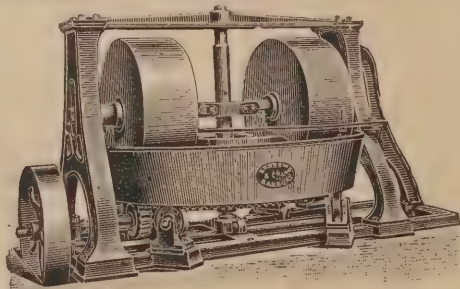
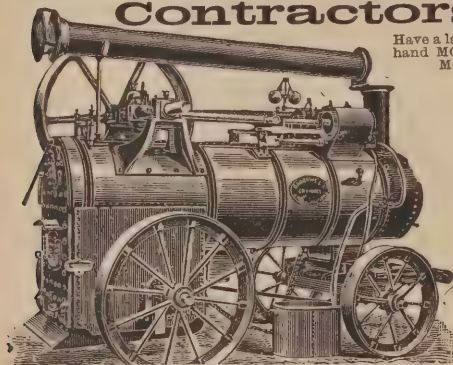
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# THE MANUFACTURE OF TERRA-COTTA.

## BALUSTERS AND BALUSTRADING.

By WILLIAM REID.

IN the article which appeared in Nos. 215 and 216 of the BUILDERS' JOURNAL the description given of how plain terra-cotta string coursing and mouldings were produced had, as then explained, only direct reference to the methods used in the manufacture of that particular type of work. When dealing with round objects, like balusters, different methods are employed. The illustrations of balusters and balustrading, Figs. 1 and 2, are intentionally made simple in design, and similar to those one may see every day. More elaborate work, covered with modelled enrichment, would again necessitate different treatment, and may be dealt with at another time. Of course it must be understood that a model, or pattern, of the object to be eventually turned into terra-cotta must first of all be made, and this model—for the term "pattern" is never applied to terra-cotta work—is almost invariably made of plaster of Paris.

To make the model for a round baluster, the template of zinc is cut as for string coursing, but, in this case, it is adjusted to a sort of lathe, as shown at Fig. 3. This lathe is a very simple contrivance, as will be seen from the drawing, and consists merely of two wooden upright ends fixed to a base, with a square spindle and crank laid over. The spindle is well oiled and a piece of paper wrapped round, then plaster is put on and the crank turned. By this means when sufficient plaster has been put round the spindle till it touches the zinc plate, a shape will be turned similar to that cut out of the zinc. When the top and bottom of the round balusters are square these must be made separately and fixed to the round portion afterwards. The purpose for which paper has been wound round the spindle is to prevent the plaster from sticking to it, and to facilitate the withdrawal of the spindle when the plaster model has been completed.

To make the mould the model is laid on the bench, as shown at Fig. 4, and built half-way up on either side with clay. The treatment of the ends in moulds of this kind requires special notice. If reference is made to the diagrams, Figs. 4 and 5, it will be seen that, at the larger end, the clay has not been placed round this part and, at the smaller end, it projects for about an inch, and, in addition, is carried up and round the whole end, leaving a margin of about an inch or so. This is clearly shown on the drawing, Fig. 5. The reason for leaving one end entirely uncovered is in order that the mould may be easily removed from the clay pressing. This will be better understood if one can imagine the mould filled with clay and set up on its end. Now, it is clear, if the mould were carried round this end and if set in an upright position, it would be an extremely troublesome matter to pull away the mould from underneath the clay, and the consequence is that the mould must be made in such a way as to enable the clay to rest directly on the floor when the mould is placed in this position. The smaller end of the baluster might have been entirely covered with plaster when making the model, but, if treated as shown at Fig. 5, the projecting part thus formed serves as a guide or gauge for regulating the thickness of the clay that is pressed round the inside of the mould, for the object is not made of solid clay, but hollow, which will not only make it lighter, but stronger and very much safer to fire.

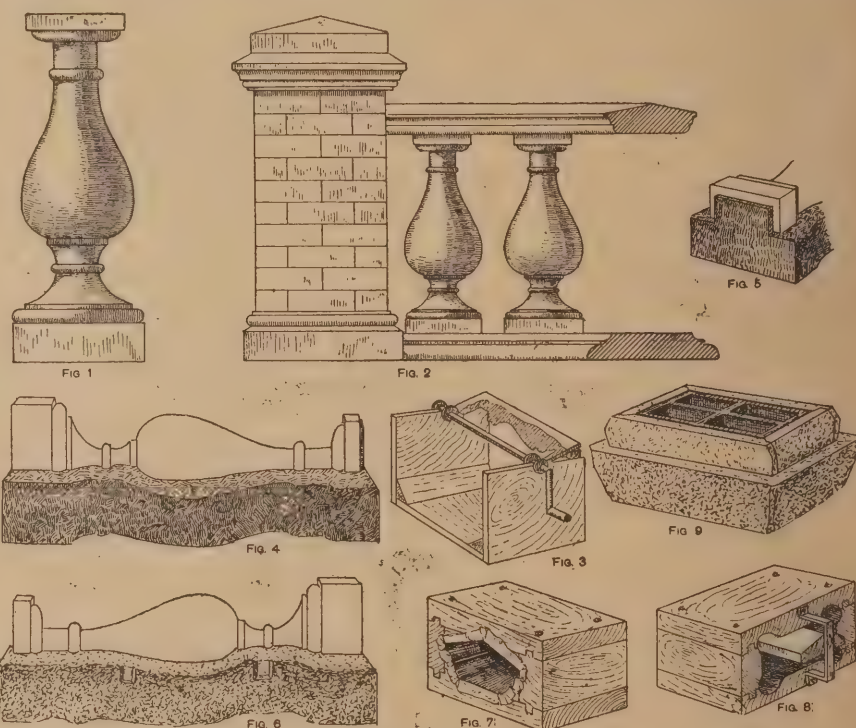
Having, then, built up the plaster model as shown at Fig. 4, the exposed part is covered with plaster and neatly trimmed up. The model is then turned over so as to rest on the plaster, and spaces are cut out as shown at Fig. 6. When plaster is placed on the part that is now uppermost these square spaces form the joggles necessary to keep the two parts of the mould in their proper places. This type of mould is

called a "book mould." Each part is separately filled with clay, and the two pieces are then placed together. To ensure the clay in each half-mould sticking together, the adjoining surface of each piece is roughened, damped with a sponge and water, and a small roll of clay laid over, so that, when the two parts of the mould are laid over each other and well pressed together, the pressure will unite the one half with the other. After being left awhile to dry, the mould is taken off, and the baluster set on its end to become sufficiently stiff for the finisher to put the necessary finishing polish on it.

The coping, or plinth, may either be made in the same way as described for plain-string coursing—that is, from plaster moulds, or pressed through a die in a manner somewhat similar to that described for moulded bricks. A drawing (Fig. 7) is given of the front of the die used for producing a coping similar to that shown at Fig. 2. A back view (Fig. 8) is also given, showing the corners scooped out to

salts\* it may contain. It is afterwards thoroughly ground and mixed with water till reduced to a plastic and workable mass. Even then it may not be used immediately, but may be stacked in heaps, covered with damp cloths or matting and again left for some days, which will further tend to mellow it.

This prepared clay, then, is thrown into the stupid and converted into coping or tiles, &c., as explained. The strip of clay, on issuing from the die, is cut to convenient lengths, finished, and set aside to dry before being fired. To make the base or cap of the pillar shown at Fig. 2, the model is made by running a plaster moulding of the required pattern and mitring these pieces together. For the cap the moulding is made of plaster but the top part, being very simple, may be modelled out of clay. The whole is moulded in the same way as for string coursing, that is, the sides are first made and a case, or cover, is run partly over these to keep them together. A sketch of the complete mould for the cap is



TERRA-COTTA BALUSTERS. DRAWN BY WILLIAM REID.

allow the clay to enter the die more equally, and ensure an equal pressure at the mouth. An arrangement is also illustrated in this view, showing how heavy work is made hollow. A piece of wood is suspended in the centre of the die. It projects a little distance from the back, as will be seen in the drawing, so that the clay, when being forced through, may not be impeded by the iron framework necessary to support this wooden core. These dies are made of wood, and lined with moleskin. The principle of the machine used for this work is very similar to that explained in the previous article, the difference lying principally in the power used to press the clay through the die. The machine is not illustrated, as, if reference is made to the drawing of a pug, Fig. 2, in the wire-cut machine, it will be noticed that the screw adjustment of the knives forced the clay through the die. In the production of coping, &c., the clay is pressed out by means of a piston worked by steam power. Prepared clay is thrown into this machine—called a "stupid"—steam is turned on the piston and the mass is forced through the die.

It may be further mentioned here that, in terra-cotta work, more time and care is spent in the preparation of the clay than for bricks. The clay may have been left for some months to "weather," that is, it has been left exposed to the rain and frost after being dug from the clay bank. This seems to have the effect of greatly improving its quality besides helping to disintegrate it and wash out the insoluble

shown at Fig. 9. This drawing shows the mould resting on the case and filled with clay. Terra-cotta work is generally made hollow and, in heavy work of this sort, straps or stays are necessary to strengthen the work. These straps are shown in the illustration.

**Site of the Dundee Parish Council Offices.**—A site in West Bell Street, belonging to the town of Dundee, extending to 73ft., which has been selected on which to build new offices for the Dundee Parish Council, was exposed to feu, and the upset yearly feu duty was fixed at £60. This was offered by Mr. W. B. Dickie, solicitor, who was acting on behalf of Mr. W. Kidd, Stationer, of Whitehall Street, Dundee.

**Proposed Alteration at Alfreton Parish Church.**—At a social gathering of church people at Alfreton last week, the Vicar explained several proposals for structurally improving the parish church. It is proposed to lengthen the chancel, increase the height, and build an organ chamber on the south side of the chancel. Mr. Palmer-Morewood some time ago offered to add two bells to the belfry, so as to complete the octave. This will now form part of the general scheme, Mr. Palmer-Morewood defraying the cost, estimated at about £150. The total scheme will involve an outlay of £1100. The architect is Mr. Hodson Fowler, of Carlisle.



## WOODEN BEAMS.

By CHARLES W. TOMLINSON.

IN this article the method of working out the strength of wooden beams will be described.

The strength of a beam is (I.), Proportional to the breadth (II.), Proportional to the square of the depth (III.), Inversely proportional to the span.

Thus: If a beam of elm, 1" x 1" x 12", requires a central load of 650lbs. to break it, what load will be required to break a beam of the same timber, 4" broad x 10" deep and 20ft. long?

$$\frac{650 \times \frac{1}{4} \times \left(\frac{10}{1}\right)^2}{20} = 13,000\text{lb., or } 5.8 \text{ tons.}$$

This is, perhaps the simplest method, resting on proportion only. All that is needed to work out the strength of a beam in this way is to know the weight at which different materials, all, of course, of a similar size, will break.

Here is a list: Central breaking loads in lbs. for 1" x 1" x 12" beams—ash 650, beech 850, elm 650, English oak 550, white pine 450, yellow pine 500, pitch pine 550, teak 750.

These breaking loads differ slightly as laid down by the different authorities, but, on the whole, the results approximate fairly. The most popular formulæ for working out the strength of wooden beams are those of Hurst, as set out in the "Architectural Surveyor's Handbook."

The common formula for working out the strength of a loaded beam is  $W = C \frac{b d^2}{l}$

$W$ =breaking weight in cwts. in the centre.  
 $b$ =breadth in inches Values of  $C$ .  
 $d$ =depth in inches Ash ... 6.0  
 $l$ =span in feet Spruce fir ... 3.6  
 $C$ =a constant found by Greenheart 8.0  
 experiment (being  $W$  in English oak 5.0  
 cwts. required to fracture a Northern pine 4.0  
 1" x 1" x 12" beam) Teak ... 5.0

The method of using the formula will be best explained by a question.

What concentrated load will a 12' x 6" beam of Northern pine 15ft. long safely carry?

$$W = C \frac{b d^2}{l}; W = 4 \frac{6 \times (12)^2}{15}; W = \frac{4 \times 6 \times 144}{15}$$

$$W = \frac{1152}{5} = 230.4 \text{ cwts.}$$

But this is breaking weight, therefore taking 4 as a factor of safety, we get  $230.4 \div 4 = 57.6$  cwts.

This formula can just as easily be reversed in order to find out the required size of a beam. Example: What size should a beam of spruce fir be to carry safely a distributed load of 4 tons over a 12ft. span?

Now a distributed load of 4 tons = a concentrated load of 2 tons. And 4 as a factor of safety = 8 tons, or 160 cwts.; B. W. concentrated.

$$\text{Then } W = C \frac{b d^2}{l} \text{ or } 160 = 3.6 \frac{b d^2}{12}$$

One size must be assumed, let the breadth be taken at 5".

$$\text{Then } 160 = 3.6 \frac{5 d^2}{12}; 160 = 3 \times 5 \times d^2 = 1.5 d^2$$

$$\text{Then } 160 = 1.5 d^2, \text{ therefore } d^2 = \frac{160}{1.5} = 106.66;$$

$$\text{and } d = \sqrt{106.66} = 10.3 \text{ ins.}$$

An 11" x 5" beam would probably be used.

If, in assuming the breadth at 5", the answer had worked out to a very badly proportioned beam, say 16" x 5", another breadth would have had to be assumed and the problem worked out again in a similar manner, until a well-proportioned beam was obtained.

**Leicester Bricklayers' Labourers** have gone on strike to the number of 750 in consequence of a demand for an increase in wages from 6d. to 6½d. per hour having been refused. The stoppage of these men has brought out the bricklayers also, and about 1500 men are now idle.

## Masters and Men.

**Arbroath Joiners** are on strike for an increase of wages from 7½d. to 8d. per hour.

**Perth Painters** have obtained the increase of ½d. per hour for which they went on strike.

**The Stonemasons and Bricklayers of Neath** and district have struck because the masters will not grant them an increase on their wages.

**The Bricklayers and Labourers at Leicester** have struck work in consequence of the employers having failed to comply with the demand for an increase of wages.

**Ashton-under-Lyme Painters** recently demanded an increase of 1d. per hour, and on the matter being referred to arbitration, the arbitrator decided in favour of the increase. It is expected that the decision will lead to similar demands in other towns.

**Oldham Painters** were not satisfied with 8d. per hour, and struck for 8½d.; the masters have offered to make the increase from July 1st next. The men wanted the advance from April 1st, but it is expected that they will accept these terms, and so end the strike.

**Scarborough Labourers** in the employ of Mr. A. Moore, a building contractor, who are members of the Scarborough Builders and General Labourers' Union, have struck because Mr. Moore had employed a labourer who is not a member of the Union. At a meeting of the Scarborough Builders' Association it was agreed to support Mr. Moore by locking out all the members of the Union.

**Midland Ironworkers' Wages.**—A meeting of the Standing Committee of the Midland Iron and Steel Wages Board was held in Birmingham on March 31st, to receive the accountants' certificates. These showed that in January wages were advanced 2½ per cent., and since then a further increase has been made to keep level with wages in the North of England. On the latest certificate it was decided to add another 3d. per ton, making puddlers' pay 8s. 5d. per ton, against 8s. in January, and to raise other wages in proportion.

**Dispute in the Engineering Trade.**—A conference was held last Thursday between the representatives of the Engineers' Employers' Federation and the Amalgamated Society of Engineers at the Hotel Metropole, on an application made by the engineers of Mid-Lancashire, Halifax, and Newcastle for an increase of 2s. a week in their wages. The terms of the settlement decided upon at the conclusion of the engineers' great strike about fifteen months ago were that all cases of local disagreements between masters and men should be submitted to the executive committees of their respective organisations; therefore, the committees met on Thursday to discuss the first dispute of any importance that has arisen since the general strike, but no decision was arrived at, and the meeting was adjourned until the following day, when Mr. Biggart and Mr. Barnes, who respectively represented the masters and men, communicated to the Press the information that a recommendation had been jointly agreed on, which will be submitted to the parties concerned. The terms of the recommendation were not divulged.

**Halifax Joiners' Strike.**—Important Case.—In the Chancery Division, on March 29th, Mr. Justice Stirling had before him a motion by the plaintiffs in the action of Charnock and others v. Court and others. Mr. Upjohn, for the plaintiffs, said his clients were

Mr. Charnock, Mr. Earnshaw, and Mr. Sutcliffe, builders and contractors of Halifax, and members of the Master Joiners' Society of that town. The defendants were Mr. Court, the president, Mr. Sutcliffe, the secretary, and Mr. Rhodes, a committeeman of the Union of Workmen Joiners, and the object of the motion was to restrain the defendants from watching, besetting, or causing to be watched or beset, the landing stage at Fleetwood, or the railway station at Halifax, or the works of the plaintiffs respectively, or of any other member of their union, or the place of residence of any workman proposing to work for the plaintiffs or any other members of the masters' union, for the purpose of preventing them from working, &c., or for any purpose except to obtain or communicate information. The next branch of the injunction asked for related to a common law offence; and asked that defendants might be restrained from procuring persons who have entered into contracts with the plaintiffs or any other member of the masters' union to commit a breach of their contracts. The facts were that, owing to a strike of joiners at Halifax in January, the masters' union obtained two batches of non-union workmen from Belfast. On the morning of the 21st February nine men arrived at Halifax station from Fleetwood. Representatives of the masters were waiting to receive them, but workmen's representatives were also present, including Mr. Court. The masters did their best to look after the men, but were not successful, because Mr. Court induced seven of them to go away. Some went back to Belfast, and some to other places, and their expenses were paid. One man drew 7s. 6d. on account from Mr. Greenwood, to whom he was assigned, but was enticed away and did not return to work. Mr. Sutcliffe, the secretary of the men's union, went to Mr. Greenwood and asked for the man's tools, and when Mr. Greenwood told him of the draft on account, Mr. Sutcliffe at once repaid the 7s. 6d. It was admitted by the defendant, Mr. Court, that a man named Corrin said that he was bound for twelve months, and showed him the contract, so that when Mr. Court procured the man to break the agreements he did it with notice of this contract, and with his eyes open. Proceeding with the facts, Mr. Upjohn said that some two days later a batch of fifteen men arrived at Fleetwood on their way to Halifax. The men's union met them at Fleetwood. Consequently, out of the second batch eleven men were induced to break their contracts and not to go on to Halifax. There was a certain amount of conflict of evidence, but still it was clear that the defendants spent considerable sums of money in sending the men away. They admitted that, but said it was not the money of the union at Halifax. That, counsel said, might be explained thus. The men's union was a friendly society, whose funds were dedicated to certain purposes. They had, therefore, to make a "whip" for this money, but that could not be done without the consent of the union. There was no doubt as to the extent Mr. Court went, and that persuasion was used to induce the men to leave their employment. Mr. Jenkins, for the defendants, asked the Court to strike out that part of the writ which described the plaintiffs as suing on behalf of themselves, and all other members of the Masters' Union, on the ground that, this being an action of tort, the present form of the writ did not apply. Each of the three plaintiffs named might individually be entitled to claim, but there was no such common interest as to enable them to sue for themselves and all other members of the Union. Mr. Upjohn contended that the contract pledged the Masters' Union as a body, and, therefore, there was a common interest in the contracts. After some discussion his lordship directed the writ to be amended by striking out the words objected to by Mr. Jenkins, and, instead of those words, inserting the names of the remaining twenty-three members of the Masters' Union. Mr. Jenkins, on the merits, argued that there had not been watching or besetting within the meaning of the Act, and Mr. Upjohn having replied, his lordship said he would give judgment after the recess.



## THE PLASTERERS' DISPUTE.

A WELL-ATTENDED MEETING was held in Manchester on March 31st in support of the cause of the locked-out plasterers in Manchester and Salford. The meeting took place in the Free Trade Hall, and Mr. E. Grist, who presided, spoke in favour of co-operation among the men. Mr. John Harker moved a resolution condemning the action of the masters in locking out the plasterers at an hour's notice, in contravention of the agreement of June 15th, 1895. This was seconded by Mr. George Jackson, and unanimously carried.

A meeting was held in Nottingham on the 2nd inst. to consider the various aspects of the dispute, and the general expression of opinion was that the dispute must be maintained on the men's part unless a satisfactory conclusion should be arrived at at the forthcoming conference in London on the 6th inst. A meeting of all the branches of the building trades (except masons) was held on the 3rd inst. at Birmingham, and about 400,000 men were represented. The position was discussed from all standpoints, and a hope expressed that at the conference the dispute would be settled.

The long-desired conference between the masters and the men took place last Thursday, and lasted fully two hours. It was held at the offices of the Master Builders' Association in Bedford Street, Strand. The men's case was put by Mr. Deller, and the employers' case by Mr. Houldsworth, Mr. T. F. Rider, Mr. J. Bowen, and Mr. R. Neill.

A discussion took place with reference to certain objectionable practices set forth in the employers' manifesto. On the first point, the coercion of foremen, the men refused not only to abandon the practices, but withdrew an assurance given in their letter of March 24th, that they had no desire to coerce any one into joining their association. The portion of the men's letter referred to reads as follows:—"In reply to yours of the 18th inst., I have to inform you that we have not any desire, neither have we ever had any desire, to coerce anyone into our association; but we claim the right and privilege to persuade only any plasterer working at the trade to become a member."

The masters withdrew, and after consideration, they formulated the following questions, and submitted them to the men's representatives:—

- (1) Are you properly authorised definitely to agree to and sign any agreement we may arrive at with reference to the employers' circular of February last? Answer—Yes.
- (2) It must be understood that any agreement must be applicable to the whole of the country. Answer—Agreed.
- (3) Are you prepared to enter into a monetary guarantee on both sides for the faithful observance of any agreement arrived at? Answer—We cannot agree to a monetary guarantee.
- (4) In your letter of the 24th of March you state that you have no desire to coerce anyone into your association, and claim the right to persuade only. Do you confirm or withdraw that statement? Answer—We wish to be honest with you, therefore withdraw the words "persuade only" as we could not guarantee that our members would agree to such action on our part.

After further discussion, the employers said that it was the assurance in the plasterers' letter of March 24th that induced them to accede to the men's request for a conference, but as that assurance had been withdrawn, they declined to continue the conference.

It is reported that Mr. Deller said after the conclusion of the meeting, that the conference broke down simply because the Union refused to give a guarantee to coerce its members to work with non-unionist plasterers. The question put was whether it would be prepared to coerce its members to work with non-union men, and they refused because they could not bind any member to work with a non-union man if he was not willing.

The Lancashire master builders, according to an official report, are preparing for a general lock-out of their men to bring the plasterers' dispute to a settlement. In this action they are supported by the Engineering Employers' Federation.

The members of the Amalgamated Society of Engineers have agreed to levy themselves on behalf of the plasterers to the extent of twopence per week each member. By this over £700 per week will be collected.

## Builders' Notes.

**The Cookridge Street Baths, Leeds,** are to be reconstructed, and contracts have been let for £5,635.

**The Nottingham Builders' Labourers' Union** celebrated their eighth anniversary on Wednesday last by a dinner.

**A Building Stone and Brick Exhibition.**—Our contemporary, "The Quarry and Builders' Merchant," has made arrangements to hold an exhibition of building stone and brick, in connection with "The Surveyor" exhibition of road-making methods and appliances, at the Building Trades' Exhibition, which will be held at the Royal Agricultural Hall, from April 26th to May 6th. A collection of all the principal varieties of building stone and brick will thus be presented in a single exhibit, and opportunity will be afforded for quarryowners and brickmakers to bring into the market many little known varieties of the materials. The exhibits are confined to small specimens of the products of the various quarries and brick works, each specimen to be marked with the name of the producer and the description of the stone. The specimens will afterwards form a part of the permanent museum of building stone and brick, kept at the offices of "The Quarry and Builders' Merchant," which is open to the inspection of architects, engineers, contractors, &c. Particulars can be obtained on application to 5, Arundel Street, Strand, W.C.

**Colchester New Town Hall.**—At a meeting of the Colchester Town Council last Wednesday a letter was read from the architect of the new Town Hall, Mr. John Belcher, with reference to the Tower, stating that, though he could not recommend any alteration in the size or general design, he found that by the use of the "Owen Artificial Stone" in its construction, the total cost would be £2,562 6s. 10d., instead of £4,070, if Portland stone were used, and that the contractors were agreeable to carrying out the work for the first mentioned sum. The Deputy Mayor (Alderman Paxman) had offered to increase the amount of his gift from £2,000 to £2,500, and the New Town Hall Committee expressed their appreciation of his liberality. The architect had been asked whether he had made the fullest possible inquiry as to the suitability and durability of the Owen stone, and replied that he felt he could recommend the stone with some confidence, as it had been well spoken of by masons and builders who had worked it. The Owen Stone Company had also written, stating that the stone could be used without any fear of its giving way from any action of the atmosphere, or frost or heat, and the Company would guarantee to replace the stone if at any time within ten years of its fixing it suffered from any deterioration of the atmosphere. Further consideration of the matter was deferred until the return of the Deputy Mayor.

**A Drainage Case.**—At Clerkenwell County Court, before his Honour, Judge Edge, Thomas Wm. Kingsland, builder, of Beechholme Road, High Road, Clapton, sued Maurice Miroy, agent, of Anson Road, Tufnell Park, for £52 5s., for work done and materials provided; and there was a counter-claim for £50 damages alleged in respect of the plaintiff's negligent

and defective execution of drainage work—viz., his omission to provide for the drainage of the cellars and basement at "Ellengowan," 40, Anson Road, Tufnell Park, and failure to lay drain pipes to the depth shown on the plan prepared by the plaintiff, approved by the defendant, and lodged with and passed by the Islington Vestry. It was stated that Mr. Miroy received notice from the Islington Vestry, specifying certain nuisances upon his premises which required remedying. The matter was put in the hands of Mr. Kingsland, who carried out a system of drainage. Previously, for no less than nine years, the cellars had been perfectly dry; and it was submitted, on behalf of the defendant, that, after the execution of the work, the cellars were flooded after a downfall of rain to such an extent that it took two men six hours each to bale the water out. Further, it was said, an outlay of £50 would be required to put the cellar right again. The jury retired at the close of the evidence, and found a verdict on the counter-claim for £52 10s., the plaintiff's claim being allowed by consent.

## Engineering Notes.

**Pontefract Workhouse** is to be lighted by means of electricity.

**The Leeds Gas Committee** propose to spend £111,680 on extending gas mains in the city during the next five years.

**The Tramways in Glasgow** are to be in large part converted from working by horse traction to electric traction at a cost of £102,000.

**Halifax Electric Tramways** have just been extended by the opening of a new section. Since the inauguration of overhead electric tramways in the town nine months ago, the receipts have amounted to about £10,500, and the profits to nearly £2000.

**The Church of the Virgin Mary, Elvetham,** has been fitted with the latest improved small tube hot water heating apparatus and tubular exhaust ventilators by John King Limited, engineers, Liverpool, employing their well-known special economical coil heater.

**Newcastle City Engineer and Overhead Tramways.**—Mr. W. G. Law, Newcastle City Engineer, in a report to the Tramways Committee, combats the overhead trolley system, and states that to establish it in Newcastle would be "an outrage that would rival the destructive efforts of the Goths and Vandals."

**Electricity at Grimsby.**—The Grimsby Town Council applied to the Local Government Board recently for permission to borrow £43,500 for electric lighting purposes. In response to the application, Mr. Ducat, Local Government Board Inspector, held an inquiry into the matter last Thursday, and the scheme was not opposed.

**Blackburn Electric Tramways** were opened by the Mayor on Wednesday last. The Corporation has purchased the whole of the tramways working in Blackburn, but so far only four miles have been electrically equipped. The tramways were expected to be opened last July, but great delay was caused by the engineering strike.

**Ventilators for an Asylum.**—Additions are now being made to Larbert Imbecile Institution (Messrs. A. and W. Black, of Falkirk, Architects), and special attention is being given to the ventilation, which is being carried out by means of "Cousland's Improved Climax" Patent Direct-acting Invisible Roof Ventilators, supplied by the "Climax" Ventilating and Heating Co. Limited, of Glasgow.



**New Railway Engine.**—The Lancashire and Yorkshire Railway Company have constructed at their Horwich Locomotive Works a ten-wheeled bogie engine for express traffic, which is believed to represent the extreme limit of dimension practicable on an English railway. The new engine weighs 58 tons 15cwt., its tender 30 tons 13cwt. 1qr., making the total weight 89 tons 8cwt. 1qr. There is coal space for five tons. The boiler pressure is 175lb. to the square inch, and the size of the boiler is quite abnormal.

**The Extension of the Oldham Electricity Works** was considered at a meeting of the Corporation, and plans and estimates, which have been prepared by Professor Kennedy, were discussed. The plans provide for an extension of the boiler-house and addition to the boiler power to meet the increasing demands for energy. The present boiler power is not equal to the engine power. Professor Kennedy also recommended the alteration of the whole of the mains to the three-wires system, and the extension of the mains into other districts. The total cost of the alteration and additions is estimated, for the purposes of the application to the Local Government Board, at £17,800, exclusive of alterations and extensions which are necessary to the lodge.

**The Montreal, Ottawa, and Georgian Bay Canal**, connecting Montreal with Georgian Bay, will probably be opened within three years. This new waterway will shorten the journey from Duluth, the great grain centre of the North-West, to the sea by 375 miles. New lines of grain steamers and canal boats will be put in commission as soon as the Canal is ready for traffic, and fear is entertained in New York that these vessels will divert the greater part of the Duluth grain shipments. The new route will be through Lakes Superior and Huron to Georgian Bay, and thence through the Canal. At present there are two waterways from Duluth to the sea. One is through Lakes Superior, Huron, Erie, and Ontario, and down the St. Lawrence, and the other is via the Erie Canal, from Lake Erie to Albany, and then down the Hudson River to New York.

**Aberdeen Electric Tramway.**—An offer made by Messrs. J. M'Adam and Co., of Aberdeen, to the Tramways Committee of the Town Council to do the permanent way and road work for £19,000 has been accepted. For the overhead line construction, feeder, pilot, and test cables, tramway cars and accessories, switchboard, instruments, &c., numerous offers have been received by the committee from firms in this country and in America and Germany. It was remitted to a sub-committee to finally select offers from the following list of firms: Messrs. Blackman and Co., London; Messrs. British, Thomson, Houston, and Co.,

London; Messrs. M'Cartney, M'Ilroy, and Co., London and America; and the Westinghouse Co., London. It is expected that the total cost of the work, which will likely be completed in four months, will be £35,000.

**Proposed Harbour at Portessie.**—At a meeting of the Portessie Harbour Committee a plan of the proposed harbour was submitted by Mr. Alexander Melville, C.E., of Aberdeen. The site is at the east end of Portessie, extending within six feet of the ditch. The east pier projects 369ft. north-west, and the west pier, which starts about 800ft. further west, forms an arm 730ft. long, with a jetty 84ft. long extending inwards from it, making the harbour entrance between jetty and east pier 75ft. wide. The harbour area is six acres. The estimated cost is £13,300. The plan also contained an alternative scheme extending 60ft. further seaward, giving 4ft. more depth, at an estimated cost of £17,500. The committee expressed themselves pleased with the plans submitted, but deferred decision for a week.

**English orders for America.**—The Directors of the Barry Dock and Railway Company have decided to accept the tenders of an American firm for the supply of several locomotives for their mineral and passenger train services, and to accept tenders for the supply of three locomotives of Belgian manufacture. The Directors assert that in addition to getting quicker delivery, the cost is about £500 less on each locomotive than they would have to pay in England, while the workmanship is quite as good, if not better. By way of elucidating the difference between the cost of American and English engineering work, it is stated that the American workmen put in 3100 hours on a given job, compared with 1900 by the English workmen, whose labour is limited by the rules of his Union. Mr. George Barnes, when interviewed on the subject, ridiculed the statement that the difference in the cost of the work between American and English firms was due to the longer hours worked by the American engineers. The statement that the American workmen put in 3100 hours to the Englishman's 1900 hours was, he said, absurd on the face of it. The American worked an average of fifty-eight hours per week and the Englishman fifty-three hours or fifty-four hours. But it did not necessarily follow that the longer hours worked affected the price. In fact the hours worked did not make the slightest difference to the price. The Editor of "Fairplay," Mr. T. H. Robinson, in a letter to the "Times," thinks that the real cause of the trouble is the restriction of apprentices imposed by trade unions. He says: "The object of trade union is not to increase trade, but to limit the number of men employed in any particular industry, and this object they have attained with the result we see."

# Surveying and Sanitary Notes.

**Grimsby Street Improvements.**—An inquiry was held at Grimsby last Thursday by Mr. Ducat, Local Government Board Inspector, into an application made by the Grimsby Town Council for sanction to borrow £1,038 for the formation of a new street to connect Guildford Street and Hilda Street. It is proposed to remove three houses in Guildford Street, so that Cope Street may be connected with Tunnard Street, which will allow access to Victor Street from Hilda Street. The scheme was not opposed.

**Street Improvements at Hawick.**—At a meeting of the heritors of Wilton Parish, held last week, it was resolved to contribute a sum of £60 towards widening the main thoroughfare at Wilton Place on condition that the Town Council carry out the whole work. The proposal is to widen the street there by adding to the roadway two feet of Wilton old churchyard, where no interments have taken place, and if the objections of two heritors can be overcome by some arrangement, thirteen feet will be taken in, and Wilton Place put in a line with Princes Street.

**Nottingham Improvements.**—Mr. R. H. Bicknell, M. Inst. C.E., held an inquiry at the Guildhall, Nottingham, last week, on behalf of the Local Government Board, into the application made by the City Council to dispose of corporate land situated on the north side of Derby Road, by way of building leases. Mr. J. H. Richards, who represented the Council, having proved the formal notices, explained that the property comprised a number of small shops fronting Derby Road, and some small cottage property and workshops at the rear. The shops were very old, and altogether unsuitable for one of the main thoroughfares leading to the Great Market Place. The cottages at the rear were also very old, and in an unsatisfactory state. It would be impossible to put the property in a good state of repair without the expenditure of a large sum of money, amounting practically to reconstruction, and the Corporation were of opinion that the property should be cleared away, and the land put to better use. The Corporation do not propose themselves to undertake the erection of new buildings, but to offer the land by public auction on leases, subject to such conditions as would insure the erection of more modern buildings suitable to the requirements of the neighbourhood. The area of land involved is 1296 square yards, and it was estimated that the annual ground rent to be derived from the land would exceed the present net rentals.

## COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.		WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—				
April	14	Okehampton, Devon—Restoring Stonework, &c. ...	General Holley ... ..	J. A. Lucas, Architect, Town Hall, Okehampton.
"	14	Crazeckan, Furnace, Scotland—Farm Dwelling-house...	" .....	J. Brown, Clerk of the Works, Inverary.
"	14	London, E.C.—Alterations, &c., to Factory ... ..	B. Morris and Sons Limited ... ..	C. Stranger and Sons, 21, Finsbury-pavement, E.C.
"	14	Botcherby, Carlisle—School, &c. ... ..	St. Cuthbert Without Board School ... ..	A. W. Johnston, 81, Castle-street, Carlisle.
"	15	Treharris, Mon.—Baptist Chapel ... ..	" .....	Homeleigh House, 37, Perrott-street, Treharris.
"	15	Halifax—Dwelling-house, &c. ... ..	" .....	C. F. L. Horsfall & Son, Lord-street-chambers, Halifax.
"	15	Aber, Bargoed, Wales—Forty Houses ... ..	Powell Duffryn Steam Coal Co. Ltd. ... ..	G. Kenshole, Architect, Duffryn House, Ystrad Mynach.
"	15	Aberystwyth—Additions, &c., to Hotel ... ..	Allsopp and Sons ... ..	Hipkiss & Bassett, Architects, Terrace-road, Aberystwyth.
"	15	Coveventy—Fittings to Police Court ... ..	City Council ... ..	H. Quick, Architect, Hertford-street, Coventry.
"	15	Lanchester & Bishop Auckland—Police Station & Bridge	Durham County Council ... ..	W. Crozier, County Surveyor, Shire Hall, Durham.
"	17	Hunslet, Leeds—Alterations, &c., to Union Offices ... ..	Guardians ... ..	W. E. Richardson, Architect, Bond-street, Leeds.
"	17	Mansfield—Additions to Hospital ... ..	" .....	R. F. Vallance, Borough Surveyor, Mansfield.
"	17	London, E.C.—Buoy Store, &c. ... ..	Corporation of Trinity House ... ..	Secretary, Trinity House, London, E.C.
"	18	Cardiff—Stable ... ..	Great Western Railway Co. ... ..	Engineer, G.W.E. Station, Newport.
"	18	London, S.W.—Two Bath Turrets at Infirmary ... ..	Chelsea Guardians ... ..	Lansdell and Harrison, 38, Bow-lane, E.C.
"	18	Blackburn—Alterations, &c., to Conveniences ... ..	Markets Committee ... ..	W. Stubbs, Borough Engineer, Municipal Offices, Blackburn.
"	18	Cambridge—Police Station ... ..	Town Council ... ..	J. E. L. Whitehead, Town Clerk, Guildhall, Cambridge.
"	19	Oldham—Alterations to Station ... ..	Oldham, Ashton-under-Lyme, & Guide Bridge Junction Railway Company ... ..	The Engineer, Great Central Railway, London-road Station, Manchester.
"	19	Johnstown, Ruabon—School and Master's Residence ... ..	School Board ... ..	J. Morison and Son, Architects, King-street, Wrexham.
"	20	Newcastle-upon-Tyne—Iron Arched Roof ... ..	Finance Committee ... ..	Property Office, Town Hall, Newcastle.
"	20	Abergavenny—Cottage Hospital and Dispensary ... ..	" .....	E. A. Johnson, Architect, Abergavenny.
"	20	Golcar—Chancel, Vestries, Organ Chamber, &c. ... ..	" .....	J. Kirk and Sons, Architects, Huddersfield.
"	20	Keighley—Masonry Bridge ... ..	Corporation ... ..	W. H. Hopkinson, Borough Engineer, Keighley.
"	20	Llanfyllin, Wales—School Buildings ... ..	County Intermediate School ... ..	H. Teather, 83, Wyle-cop, Shrewsbury.



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—Continued.</b>			
April 20	Waringstown, co. Down, Ireland—Cottages ... ..	Lord Dunleath ... ..	H. Hobart, Architect, Dromore.
" 21	Seacombe, Cheshire—Church Works ... ..	Welsh Congregational Church ... ..	Secretary, 125, Brighton-street, Seacombe.
" 22	Chinley, near Chapel-en-le-Frith—Hospital Buildings... ..	High Peak Hospital Committee ... ..	W. R. Bryden, 1, George-street, Buxton.
" 22	Melksham—Two Shops ... ..	H. White ... ..	H. Brakespear, High-street, Corsham, Wilts.
" 22	Bexhill, Sussex—Three Cottages ... ..	East Sussex County Council ... ..	F. J. Wood, County Surveyor, County Hall, Lewes.
" 24	Upper Norwood—Public Library ... ..	Croydon and Lambeth Library Authorities ... ..	E. Haslehurst, 7a, Laurence Pountney Hill, E.C.
" 25	Oldham—Retort House, Chimney, &c. ... ..	Gasworks Committee ... ..	Gas Offices, Greaves-street, Oldham.
" 25	Walthamstow—Enlargement of Workshop ... ..	School Board ... ..	W. A. Longmore, Bridge Chambers, Hoe-st., Walthamstow.
" 26	Londonderry—Station Houses ... ..	Donegal Railway Company ... ..	J. Barton, Engineer, Exchange-buildings, Dundalk.
" 26	London, S.E.—Alterations to Boiler House, &c. ... ..	Metropolitan Asylums Board ... ..	C. S. Peach, 28, Victoria-street, Westminster.
" 27	Kelling, near Holt, Norfolk—Enlarging School ... ..	Weybourne Urban District School Board ... ..	F. Andrews, Clerk, Holt, Norfolk.
" 28	Barrow-in-Furness—School, &c. ... ..	Corporation ... ..	Woodhouse and Willoughby, 100, King-street, Manchester.
" 29	Halifax—Schools ... ..	School Board ... ..	W. C. Williams, 29, Southgate, Halifax.
May 1	Paddington, W.—Reconstruction of Bridge ... ..	Vestry ... ..	C. Weston, Vestry Hall, Harrow-road, W.
" 5	Breamore, Hants—Bridge Works ... ..	County Council ... ..	W. J. Taylor, County Surveyor, The Castle, Winchester.
No date	Altcar, near Liverpool—Royal Naval Reserve Buildings ... ..	Admiralty Works Department ... ..	Director, 21, Northumberland avenue, W.C.
"	Chelmsford—New Roofs to Church ... ..	.....	Messrs. Chancellor, Architects, Chelmsford.
<b>ENGINEERING—</b>			
April 14	London, E.—Hydraulic Lifts ... ..	St. George-in-the-East Guardians ... ..	G. A. Wilson, Vestry Hall, Cable-street, E.
" 14	Peterborough—Footbridge ... ..	Rural District Council ... ..	F. J. Whittaker, 214, Cromwell-road, Peterborough.
" 14	Dudley—Tramway ... ..	British Electric Traction Co., Ltd. ... ..	W. Howard-Smith, Donington House, Norfolk-st., Strand.
" 15	Egremont, Cheshire—Gasholder Tank, &c. ... ..	Wallasey Urban District Council ... ..	J. H. Crowther, Engineer, Great Float, near Birkenhead.
" 15	Tynemouth—Electricity Plant ... ..	Corporation ... ..	Lacey, Clirehugh, and Sillar, 2, Queen Anne's-gate, S.W.
" 15	Heswall, Cheshire—Sea Defence Wall ... ..	.....	C. W. Oates, Dee View-road, Heswall, Chester.
" 17	Cape of Good Hope—Railway ... ..	Colony ... ..	Agent General for Cape of Good Hope, 112, Victoria-st., S.W.
" 17	Brighton—Pumping Engines, &c. ... ..	Town Council ... ..	F. J. Tillstone, Town Clerk, Town Hall, Brighton.
" 17	Bristol—Swing Bridge Works ... ..	Docks Committee ... ..	Engineer, Cumberland Basin, Bristol.
" 18	Rhayader—Concrete Tank, Filter Bed, &c. ... ..	Rural District Council ... ..	G. M. Jarman, Council Offices, Rhayader.
" 18	Tottenham, N.—Sluice Valve Hydrants ... ..	Urban District Council ... ..	P. E. Murphy, 712, High-road, Tottenham.
" 13	Egremont, Cheshire—Gasholders ... ..	Wallasey Urban District Council ... ..	J. H. Crowther, Engineer, Great Float, near Birkenhead.
" 18	Llanhilleth and Aberbeeg—Widening Line ... ..	Great Western Railway Company ... ..	Engineer, Great Western Railway Station, Newport.
" 19	Seaham Harbour and Hartlepool—Railway ... ..	North-Eastern Railway Company ... ..	W. J. Cudworth, Company's Engineer, Darlington.
" 19	Hull—River Walls ... ..	North-Eastern Railway Company ... ..	—Newell Engineer, Dock Office, Hull.
" 19	St. Helens, Lancashire—Tramways ... ..	Electric Supply and Tramways Committee ... ..	G. J. C. Eroom, Borough Engineer, St. Helens.
" 20	Belfast—Mechanical Stokers, Economisers, &c. ... ..	Electric Committee ... ..	V. A. H. McCowen, City Electrical Engineer, Belfast.
" 20	Peterborough—Electric Lighting Plant ... ..	Corporation ... ..	J. C. Gill, Engineer, Municipal Offices, Peterborough.
" 23	Sutton and Howth, near Dublin—Electric Tramway ... ..	Great Northern Railway Co. (Ireland) ... ..	T. Morrison, Secretary, Amiens-street, Terminus, Dublin.
" 23	Port Louis, Mauritius—Electric Lighting ... ..	Corporation ... ..	Agent-General for Mauritius, 9, Idol-lane, City.
" 24	Perth—Railway ... ..	Lochearnhead, St. Fillans, and Comrie Railway Co. ... ..	Crouch and Hogg, 175, Hope-street, Glasgow.
" 25	London—Alterations at Pumping Station ... ..	County Council ... ..	Engineer's Department, County Hall, Spring Gardens, S.W.
" 25	Brith, Kent—Overhead Traveller ... ..	London County Council ... ..	Engineer, County Hall, Spring-gardens, S.W.
" 25	West Ham—Engines, Alternators, and Exciters ... ..	Town Council ... ..	Borough Electrical Engineer, Abbey Mills, West Ham.
" 25	Kingston-on-Hull—Electric Lighting School ... ..	School Board ... ..	D. J. O'Donoghue, Board's Offices, Albion-st., Hull.
" 25	Tyldesley, Lancs.—Firebricks, Clay, Retorts, &c. ... ..	District Council ... ..	C. Austin, Manager of Gasworks, Tyldesley.
" 26	London, S.E.—Boilers, Steam Pipes, &c. ... ..	Metropolitan Asylums Board ... ..	T. D. Mann, Clerk, Norfolk House, Norfolk-street, W.C.
" 27	Gravesend and Milton—Engines, Pumps, &c. ... ..	Waterworks Company ... ..	J. Mansergh, 5, Victoria-street, S.W.
May 1	New Ross and Waterford—Railways ... ..	Dublin, Wicklow, & Wexford Rly. Co. ... ..	M. F. Keogh, Secretary, Westland-row Station, Dublin.
" 2	Perth, Western Australia—Electric Lighting Concession ... ..	City Council ... ..	Agent-Generals for Western Australia, 15, Victoria-st., S.W.
" 17	London, E.—Construction of Wells, &c. ... ..	Poplar Union ... ..	E. J. W. Stevens, 34, Victoria-street, S.W.
June 30	Shanghai—Tramway Concession ... ..	Municipal Council ... ..	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
<b>IRON AND STEEL—</b>			
April 17	Wigan—Cast-iron Mains, Wrought-iron Tubes, &c. ... ..	Gas Committee ... ..	J. Timmins, Engineer, Town Hall, Wigan.
" 17	Todmorden—Cast-iron Main Pipes ... ..	Gas Committee ... ..	H. Hawkins, Engineer, Gasworks, Millwood, Todmorden.
" 17	Christiania—Rails, Trolleys, &c. ... ..	Otopen State Railway, Narvik ... ..	Commercial Department, Foreign Office, S.W.
" 17	London, S.E.—Iron Pails ... ..	St. Mary Magdalen Vestry, Bermondsey ... ..	F. Ryall, Vestry Clerk, Town Hall, Spa-road, S.E.
" 18	Tynemouth—Cast-iron Pipes ... ..	Water Committee ... ..	J. F. Smillie, Borough Surveyor, Tynemouth.
" 19	Stockport—Mains ... ..	Gas and Electricity Committee ... ..	S. Meunier, Engineer, Stockport.
" 19	Oudtshoorn, Cape Colony—Cast-iron Pipes, &c. ... ..	.....	Sir J. Wolfe Barry, 21, Delahay-street, Westminster, S.W.
" 19	Shrewsbury—Cast-iron Pipes ... ..	Gaslight Company ... ..	W. Belton, Secretary and Manager, Gasworks, Shrewsbury.
" 26	Amsterdam—Ironwork for Light Railway Bridges ... ..	Ministry for the Colonies ... ..	—Nyhoff, Publisher, The Hague.
<b>PAINTING AND PLUMBING—</b>			
April 14	London, E.—Painting at Schools ... ..	St. George-in-the-East Guardians ... ..	G. A. Wilson, Vestry Hall, Cable-street, E.
" 14	Leeds—Painting Town Hall ... ..	.....	City Engineer, Municipal Buildings, Leeds.
" 15	Wigan—Painting, &c., Sewage Farm Buildings ... ..	Corporation ... ..	Borough Engineer, Rodney-street, Wigan.
<b>ROADS AND CARTAGE—</b>			
April 14	Bighton—Wood Paving ... ..	.....	P. J. C. May, Surveyor, Town Hall, Brighton.
" 14	Preston—Paving, &c. ... ..	.....	Borough Engineer, Town Hall, Preston.
" 15	Evesham—Hauling Materials ... ..	Rural District Council ... ..	E. Wadams, Clerk, Union Offices, Evesham.
" 15	Tonypandy, Wales—Roadmaking ... ..	.....	Rickards and Blossie, Charles-street-chambers, Cardiff.
" 17	London, S.E.—Materials, &c. ... ..	Bermondsey Vestry ... ..	F. Summer, Surveyor, Bermondsey Town Hall, Spa-road, S.E.
" 17	Henley-on-Thames—Flints ... ..	Rural District Council ... ..	C. Harper, District Surveyor, Came End, Reading.
" 17	Reading—Roadway ... ..	Gas Company ... ..	H. E. S. Baker, Engineer, Gasworks, King's-road, Reading.
" 18	Brentford—Road Making ... ..	Urban District Council ... ..	N. Parr, Clifden House, Boston-road, Brentford.
" 18	London, N.—Paving ... ..	Tottenham Urban District Council ... ..	P. E. Murphy, 712, High-road, Tottenham.
" 18	Gloucester—Stone and Haulage ... ..	Highways Board ... ..	—Weaver, Surveyor, Denmark-road, Gloucester.
" 18	London, S.E.—Hard Wood Paving Blocks ... ..	St. Mary's Vestry, Newington ... ..	L. J. Dunham, Clerk, Vestry Hall, Walworth-road, S.E.
" 20	Rothwell, near Leeds—Materials ... ..	Urban District Council ... ..	J. T. Pears, Council Offices, Rothwell.
" 21	Ashford, Kent—Broken Granite ... ..	Urban District Council ... ..	W. Terrill, Surveyor, North-street, Ashford.
" 22	Batley, Yorks—Street Works ... ..	Town Council ... ..	O. J. Kirby, Borough Surveyor, Market Place, Batley.
<b>SANITARY—</b>			
April 17	Cockermouth—Drains, &c. ... ..	Urban District Council ... ..	Surveyor to Council, Cockermouth.
" 18	Tottenham, N.—Brick and Pipe Sewers ... ..	Urban District Council ... ..	P. E. Murphy, 712, High-street, Tottenham, N.
" 20	Bexhill—Sewerage Works ... ..	Urban District Council ... ..	G. Ball, Surveyor, Town Hall, Bexhill.
" 24	Croston, near Preston—Sewers, &c. ... ..	Urban District Council ... ..	F. E. Dixon, 49, Lime-street, Preston.
" 27	Dalkeith—Cleaning and Watering Streets ... ..	Burgh Commissioners ... ..	T. Sturrock, Clerk, Dalkeith.
May 12	Johannesburg—Sewerage Scheme ... ..	.....	Town Engineer, Johannesburg.

## COMPETITIONS.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
April 14	Bradford—Cartwright Memorial Hall and Art Gallery... ..	£150, £100, £50 ... ..	City Surveyor, Bradford.
" 18	Fleetwood—Schools ... ..	£10 10s. ... ..	Clerk, School Board, Fleetwood.
" 24	Arbroath—Infectious Diseases Hospital ... ..	£20, £15, £10 ... ..	W. F. Macintosh, Clerk to Arbroath Burgh Commissioners.
" 29	Frowe—School of Science and Art ... ..	£25, £10 ... ..	Urban District Council.
" 30	Ramsgate—Concert Hall, Reading Room, Lavatories, &c. ... ..	£50, £20, £10 ... ..	T. G. Taylor, Surveyor, Broad-street, Ramsgate.
May 1	Dover—Pier Concert Pavilion ... ..	£25 ... ..	Promenade Pier and Pavilion Company Limited.
" 1	Stockton-on-Tees—Market Hall ... ..	£25, £15, £10 ... ..	Corporation.
" 9	Salford—Laying-out Site of Barracks ... ..	£30, £20, £10 ... ..	Corporation.
June 1	Leeds—Market Hall and Shops ... ..	£150, £100, £50 ... ..	Corporation.
" 3	Harrogate—Kursaal ... ..	£150, £100, £75 ... ..	Corporation.
No date.	London, S.W.—Public Baths ... ..	£157 10s., £78 15s., £52 10s. ... ..	Commissioners of Fulham Public Baths and Washhouses, Town Hall, Walham Green, S.W.



## Property and Land Sales.

To Builders, Contractors, and others.

**MESSESS. FULLER, HORSEY, SONS, AND CASSELL** are instructed to SELL by AUCTION, in lots, at South Wharf, Lowestoft, on TUESDAY, APRIL 18th at half-past 12 precisely,

**SAW-MILL PLANT and MACHINERY,**

including vertical timber frame, two double deal frames, two circular saw benches, two moulding machines, panel planer, two general joiners, trying-up machine, two fret saw machines, tenoning machine, Richard's patent mortising and boring machine, 6 foot-power mortising machines, dovetailing, tree-nail, sand-papering, and painting machines, wood-turning lathe, two mitre cutters, moulding-iron grinder, water of Ayr stone, eight glue-heating stoves, 118 joiners' benches, frame and circular saws, cutters, chisels, carpenters' and joiners' tools, planing machine, drilling machine, two lathes, engineers' and smiths' tools, two Cornish boilers, 30 h.p. condensing beam engine, 20 h.p. horizontal condensing engine, table engine, shafting and gearing, leather bands; also

**The BUILDING MATERIALS**

of the Saw Mills and other buildings, comprising about two tons lead on roofs, 250 squares slates, 150 squares tiles, 250 squares slate boarding, 600 squares flooring, 600 squares rough and weather boarding, about 100 loads timber in roofs, girders and uprights, sashes and doors, 60 rods brickwork, quantity bricks, tiles, stone, drain pipes, old lead and non and builders' materials, water-cart, three tumbril and spring carts, nine trollies and wagons, two timber whips, and other effects.

May be viewed the day preceding sale, and catalogues had on the premises; and of Messrs. FULLER, HORSEY, SONS, and CASSELL, 11, Billiter-square, London, E.C.

Auctions for the Year 1899.

**MESSESS. TROLLOPE'S SALES of FREE-HOLD and LEASEHOLD ESTATES, HOUSES, GROUND-RENTS, &c.,** will take place at the Mart, E.C., as follows:—

Thursday, April 20th	Thursday, August 3rd
Thursday, May 13th	Thursday, October 19th
Thursday, June 8th	Thursday, November 23th
Thursday, July 13th	Thursday, December 14th

Sales will be held on other dates as required. In all cases Messrs. Trollope will be glad to have as long notice as possible respecting any property they may be instructed to offer by auction.

Forthcoming Sales for the Year 1899.

**MESSESS. E. and H. LUMLEY (Lumleys,** of St. James's House, 22, St. James's-street, London, S.W.) beg to announce the following days of SALE by AUCTION, for the forthcoming year, at the Mart, Tokenhouse-yard, E.C.; but, in addition, other dates can be arranged for special sales. Terms on application.

Tuesday, April 25th	Tuesday, Aug. 15th
Tuesday, May 23rd	Tuesday, Sept. 12th
Tuesday, June 6th	Tuesday, Oct. 17th
Tuesday, June 20th	Tuesday, Nov. 14th
Tuesday, July 4th	Tuesday, Nov. 28th
Tuesday, July 18th	Tuesday, Dec. 12th

Messrs. E. and H. Lumley announce in the advertisement columns of the "The Times" on Saturdays a complete list of their sales, which will include estates in England, Ireland, and Scotland, town and country properties, ground-rents, reversions, gas and water shares, stocks, &c. In cases where property is to be included ample notice should be given in order to insure due publicity.—St. James's-house, No. 22, St. James's-street, S.W.

By **EDWIN FOX and BOUSFIELD,**

At the Auction Mart,  
On Wednesday, May 10th,  
At Two o'clock, in one Lot.

**MILL-HILL, Hendon.**—Valuable FREE-HOLD ESTATE, well situate, opposite the Mill-hill Station, on the Great Northern Railway, with its capital service of trains to King's-cross, Moorgate-street, and Broad-street, and within eight miles by road of Regent-street. The property comprises nearly 100 acres of ornamentally timbered pasture land, with a gentle, warm southern slope, almost entirely surrounded by parish roads, to which there is about a mile and a half of existing frontage, and great scope for creating other leading thoroughfares. There is a substantial house known as Bitcay Farm, with a capital range of outbuildings. The estate in its present form commands a rental of £300 a year, and is capable of development by judicious building operations, or the creation of freehold ground-rents. The land is exceedingly well circumstanced for the formation of through roads, and the creation of new frontages in addition to those it already possesses.

Particulars at the Mart; at Messrs. EDWIN FOX and BOUSFIELD'S Office, 99, Gresham-street, Bank, E.C.; and of the

Vendors' Solicitors, Messrs.  
**SOAMES and THOMPSON,**  
12, Coleman-street, E.C.

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**ANSELL and MALLOWS, Architectural** Draughtsmen and Quantity Surveyors, 21, Buckingham-street, Strand, W.C. 1

**R. I.B.A. EXAMS. PREPARATION,** personally or by correspondence, in three, six, nine, or twelve months' courses. Architectural Lending Library. Special three months' finishing courses.—For full particulars apply to Messrs. HOWGATE and BOND, Associates R.I.B.A., Perchard House, 70, Gower-street, W.C. (close to the British Museum)

**L AND SURVEYING and LEVELLING.** Course of EIGHT LECTURES (Wednesday evenings), and EIGHT FIELD LESSONS (Saturday afternoons). Commences April 26. Fee, £3 3s. MIDDLETON and CARDEN, 19, Craven-street, W.C. 8

**MASON'S CHISEL, STEEL,**  $\frac{1}{2}$  to  $1\frac{1}{8}$  octagon, 12s. to 16s. per cwt.; Chisels, 6d. lb.; Best Cast Steel for Lettering Tools, &c., from  $\frac{1}{2}$  in. to 4d. lb.—E. DEALEY, Moore-street, Sheffield. 13

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*Non-absorbent, superior to Marble or Slate.*

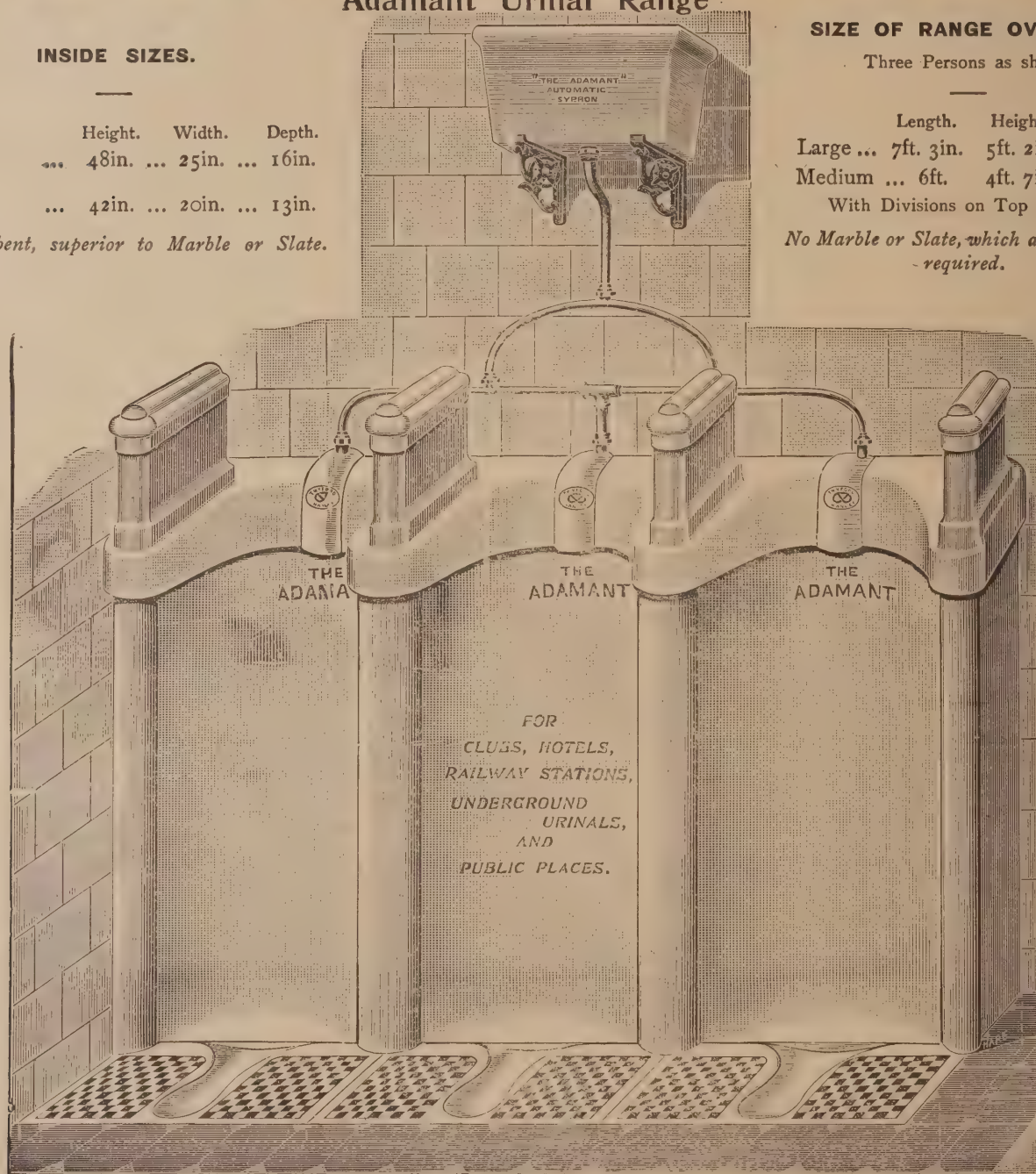
##### SIZE OF RANGE OVER ALL.

Three Persons as shown.

	Length.	Height.	Depth.
Large ...	7ft. 3in.	5ft. 2in.	1ft. 7in.
Medium ...	6ft.	4ft. 7in.	1ft. 4in.

With Divisions on Top Facings.

*No Marble or Slate, which are absorbent, required.*



No. 6. COMPLETE COMBINATION. Comprising Egg-shaped White Enamelled Fire-Clay Adamant Urinals, Fire-Clay Continuous Concealed Channels, White Enamelled with Tiled Treads, White Enamelled Top and Front Facings, Adamant Fire-Clay Automatic Cistern with Cast-Iron Brackets, and Copper Sparge Pipes.

PRICES.		LARGE.		MEDIUM.		Cheaper Ranges may be supplied in Buff Glaze.	Quotations given for Ranges for any number of persons.
For Two Persons ...	...	£19	11 0	£14	19 0		
For Three Persons, as shown ...	...	29	5 6	22	7 0		
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For Five Persons, " ...	...	46	7 6	34	16 0		
For Six Persons, " ...	...	56	4 0	42	6 0		

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APRIL 19, 1899.

No. CCXIX.

## An Architectural Causerie.

### The Art of William Morris.

*"What such a man thought worth doing was clearly worth taking seriously."*

—If anyone wishes to know as much of the artist as Mr. Day; as much of the principles of decorative art as may be learnt by studying under the guidance of the most accomplished of designers, and wishes, moreover, to have on his table a beautifully pictured memorial of one whose spirit only is with us, he may be advised to acquire and preserve the Easter Number of the "Art Journal," which contains a varied and comprehensive selection from the works of William Morris. One who hated machines so heartily would be sorry to hear that the sheets of this tribute cannot be sewn instead of being fastened by wire, which is certainly the vilest application of this humble utility that has been invented. There should be no talk about time and expense on such an occasion, and we cannot help thinking of him while rending the pages asunder. It is said that the most eagerly expected of books to be published this spring is "Morris's Life," by Mr. McKail which will be not only the work of a classical scholar, and one especially fitted to deal with the literary side of his character, but will be, moreover, the most intimate account of the whole man that can be allowed to appear. Contributory to this biography have been the various memoirs which have been written: notably Herbert P. Horn's in the "Saturday." There have also been lectures about him, and volumes of letters from Rossetti to various people in which we hear a great deal of Morris as one of the circle. Mr. Day, keeping close to his subject, displays a sympathetic understanding of a spirit but little akin to his own, which is exceedingly gratifying, and makes his contribution appear a remarkably, able performance. We who loved Morris unthinkingly are prepared at this date to read, mark, learn, and digest whatever is said of his work, but I for my part have read nothing so attentively as what Mr. Day has just written. If there be 25,000 true lovers of Fitzgerald's translations of the Rubaiyat—as many, in fact, as have purchased the latest and cheapest edition—then are there as many thousands who would be more than delighted to see the copy engrossed and illuminated by Morris, which remains with Lady Burne-Jones. We are shown an exquisite cover-design, and left to imagine the rest. It is feared, so said Mr. Ellis, that it would be impossible to do justice to the original, whatever attempts might be made to reproduce the true colours. There could be no surer proof of the poet's delight in the poem than we have in the fact that he bestowed so much labour upon it. Art is "Love at Work," said someone—neither logician nor lexicographer. E. R.

### Railways and Suburban London.

How often have we, travelling to town or from it, glanced from the carriage windows of our suburban train and glimpsed, as we flitted past, the boards which proclaim, "Building Land, ripe for development," and holding forth eloquent appeals to building speculators to come and build, on more or less advantageous terms! We know those boards well. Some of them we have known so long that they are become veritable landmarks. Before our time they were standing in those self-same meadows, and when we have grown tired of our especial suburban retreat and gone to fresh fields and pastures new, they will still be there, if, indeed, storms or natural decay have not levelled them in ruin. It is quite unlikely that the sought-for speculator will have come and built, even though the ground be in fact "ripe," or rotten ripe. For one thing, your average speculator in building sites is a man with a level head for business,

utterly fails to properly convey the vast floating populations which travel daily between their work in the City and their homes at Finsbury Park, Holloway, Wood Green, and the dozens of other crowded suburbs on the northern heights of London. Seven years ago the then Chairman of the Great Northern Railway stated at a public meeting that the suburban traffic along his Company's system was increasing "by leaps and bounds." On another occasion he said that they carried one million additional suburban passengers every year, and that they were at their wits' end how to cope with the multitude. The Company has done nothing yet, and meanwhile house property and the value of building land have gone down in the regions served (and served badly) by the Great Northern. It must inevitably be so when it is said that many who live at Finsbury Park prefer to ride to and from town by tramway, which is at once a cheaper and a much more speedy method of transport. That a horsed tramcar should in the year 1899 be proved a quicker means of transport than the railway is enough to make Stephenson turn in his grave. The Great Northern is little



A SUBURBAN STATION: WORCESTER PARK. DRAWN BY CHARLES G. HARPER.

and the first thing he enquires about, in circumstances of this kind, is the ease or otherwise of travelling to and from the spot. Now it is notorious that for the last ten or fifteen years suburban railway travelling has been going from bad to worse, keeping many Londoners who would otherwise prefer to reside some ten to twenty miles out living still within sound of Bow Bells, and driving those who have hitherto dwelt in the suburbs into more central districts. The matter has grown serious. The natural growth of London's outer circle of suburbs is stunted, and the progressive growth in the value of land arrested very greatly. The adage that "Time means money" was never, in fact, better exemplified than in these circumstances. It takes long for suffering suburban residents to begin action against the railways that serve them so badly, but their voices are at last being heard, and the absurdity of being carried at ten or twelve miles an hour at heavy fares is beginning to be pointed out with a certain amount of asperity. The Great Northern has achieved an ignoble pre-eminence in this respect, and

worse than its rivals. The South-Eastern and the Chatham and Dover are bad enough, and the South-Western Railway has by its heavy fares, consistent unpunctuality, and the suspension of ordinary time-tables in the racing season, helped to kill many a promising suburb. If season-ticket holders find their ordinary trains taken off to allow the South-Western's race-course patrons to travel express, little surprise need be felt when they seek homes on some railway with more consideration, or, more probably, go to reside in town again. Let us instance what promised some years since to become the flourishing suburb of Worcester Park, beyond Wimbledon. It is only ten and a half miles from Waterloo, yet one could travel more than half-way to Brighton in the time that the South-Western takes to convey passengers along that course. For it is no use relying upon time-tables, which show travelling at something like twenty miles an hour to Worcester Park. Actual experience allows a wide margin under the best circumstances, while under the worst the belated passengers only get home from the City in time for supper and bed. That is probably why Worcester Park remains so pleasantly rural, to the despair of house agents. Meanwhile the station is probably the most picturesque round London. C. G. H.



## On Reflection.

The R.I.B.A. to the fore.

IT is not for the first time in its history that the R.I.B.A. has taken the initiative in procuring a just recognition for the needs of architecture in such a manner as to incur the indebtedness of the profession. The body has acted with great alertness and acumen in discerning issues, in certain of the clauses, which involve a depreciation of architectural qualities in the future buildings of London, and the imposition of an excessive and unnecessary burden upon the practitioner, whose profession is already unreasonably beset with limitations and restrictions. It is unlikely that these considerations would present themselves to those to whom is entrusted the framing of our laws, but the letter which the Institute, through its secretaries, has addressed to the First Lord of the Treasury puts the case for architects forcibly and clearly, and Mr. Balfour, who, unlike the late leader of the Opposition, has discernments which reach beyond political matters, may be expected to duly weigh the objections which are here advanced to certain proposals of the bill. For our own part we entirely appreciate the case made out in this letter. The point raised in Section 3 of the letter, which calls attention to the incongruity of designs for large and important buildings from the hands of eminent architects being left to the discretion of building inspectors acting on behalf of district surveyors, who in turn are in the employ and embody the prejudices of a local borough corporation, is particularly forcible. Apart from any other consideration, the clauses of an Act which clearly involves such an affront to a reputable profession, and so great a depreciation of architectural merit, are entirely unjustified. As it is, a great deal of unnecessary difficulties are thrust in the path of the practising architect by the neglect of the principles of centralisation advocated in this letter. The variations in the sanitary bye-laws in different parts of London under various local authorities, are a constant source of trouble and misunderstanding to all parties alike, and in other connections this same lack of unanimity of the regulations throughout London is the cause of a vast increase in the number of annoyances attached to building operations. As an instance we may quote the case of the regulations governing the arrangement of public houses. There are twenty-four licensing divisions in London for this purpose, each with different justices and different rules. In the City, for instance, the public bar has to be divided with glazed screens throughout and with clear glass; elsewhere other rules apply. We hope that the letter to which we call attention will serve some substantial end in bringing about a modification of the splitting up of responsibilities and authorities so far as the regulations and laws relating to building are concerned.

The L.C.C. as Landlord.

WHEN the ground was cleared for the southern approach to the Black-wall Tunnel, about 160 houses, most of them more or less dilapidated and insanitary, were pulled down. In their places have been erected a number of clean and neat little cottages, which certainly have a rather attractive appearance; and one is disposed

to congratulate the London County Council upon having provided for the poor people they were obliged to dispossess dwellings of a more homelike and less forbidding character than the usual "model" blocks. But there is another side to the question; and if the statements made by a "Times" correspondent in a recent article are correct, it must be admitted that this particular housing scheme has been, to a very great extent, a failure. To begin with, the Council pulled down a large number of houses before any accommodation was provided for the families to be displaced. The immediate effect of this was to almost double the rents of the surrounding houses, and presumably to increase the over-crowding, and so intensify the insanitary conditions. That is a mistake which seems to apply to all the Council's building operations; in the Boundary Street area at Shoreditch, only a small proportion (about a third we believe) of the people displaced have been rehoused by the Council. The demolition of insanitary areas is a desirable thing, provided proper arrangements are made for the immediate rehousing of those dispossessed; without such arrangements the harm done may be greater than the good. In the case of this Greenwich property it would have been quite possible to build new houses in advance of the demolition of the old ones, as the Council owned a large area round this site. The rents of the new cottages, it is stated, are higher than those of the old ones, owing—the "Times" correspondent suggests—to the extravagances of the Works Department, by which they were constructed; moreover, they are by no means such desirable dwellings as they appear from the outside, being, in fact, extremely inconvenient in many respects. "It is no exaggeration to say," writes the "Times" correspondent, "that the L.C.C. only find tenants for these tenements and cottages because of the very great difficulty in getting any sort of house in East Greenwich, but very few of their tenants make a long stay." The writer is particularly indignant at the Council's determination not to allow overcrowding in their tenements. Here we can hardly agree with him. No doubt it is hard on a labourer, whose wages are only, perhaps, £1 a week, that he may not occupy a two-roomed tenement if he has more than two children. But what are the Council to do? Are they to ignore the Public Health Act, and allow overcrowding to an unlimited extent? We cannot blame them for insisting on reasonably healthful conditions amongst the tenants of their property; though it is wise sometimes to allow a certain latitude in the administration of the rules. For instance, the Council will not let one of these cottages to a family where there are more than six children. If a man takes a cottage when he has no more than the orthodox number of children, and afterwards a seventh puts in an appearance, he will receive the following notice:—"Unless you are able to make arrangements for some of your family to leave you, so as to reduce your number to two persons per room, or to find accommodation elsewhere, the Council will be reluctantly compelled to terminate your tenancy by notice to quit." The "Times" writer points out very bluntly, not to say brutally, the possible evil results of such a regulation. Without enlarging upon this aspect of the matter, we would suggest that in such a case not much harm would be done if the Council's officials would adopt the tactics of Brer Rabbit—"lie low and say nuffin."

Secret Commissions.

THERE is surely no business, trade, or profession, which can view the many assurances we have of the vigorous nature of the approaching crusade against the custom of secret commissions with any other sentiment than one of deep satisfaction. When Lord Russell introduces his forthcoming bill to the House of Lords, he may feel confident that he has the nation at his back. Neither those who have conformed to the custom of paying bribes, nor those whose *employées* have accepted secret commissions, nor those who have declined neither to accept nor offer them, nor, indeed, those who are placed outside the sphere within which the custom operates, wish otherwise than to see the enervating custom wiped out. Originally a facility adopted by unprincipled persons, it has gradually found root and flourished by inducement of the keenness of commercial competition, and the desperate alertness which enthralled those who seek to hold their own as bread-winners in a civilisation based on a meshing of telegraph wires and railway lines till it has become a custom. Beginning as an occasional stimulant to business, it has grown to an established habit, and, like the morphia habit, has ceased to be an assistance and grown a burden. Nevertheless, for all the wide and general acceptance the usage has received, it has not radically changed in its moral aspect. Sir Edward Fry, on the occasion of the last monthly dinner of the Chamber of Commerce, told his audience of the deeply affecting letters he had received from men who had written to tell him their experiences; and the speaker referred to the terrible position of men of high feeling and sensitive conscientiousness who, with the alternative of ruin facing them, are induced to falsify their most sacred ideals. Not less remarkable were the words in which Lord Russell spoke of the letter he had on the other hand received from private persons and from business firms, passionately urging and imploring him to refrain from indicating them in any public utterances upon this subject. There is no doubt that not only the general public, but practical men of affairs have lived in entire ignorance of the state of things revealed by the report of the late special committee. At a recent meeting of the British Medical Association a resolution was passed authorising the Council to call upon the Chamber of Commerce to substantiate the charges against the medical profession which appear in the committee's report, and to offer such assistance to the association as may aid them in stamping out such custom. Would not this occasion, supported by the above precedent, offer a worthy opportunity and pretext for the R.I.B.A. to take some substantial action to discredit the custom among architects, who, in common with engineers and by reason of their peculiar duties as agents, are open to great temptation. The members of the Institute themselves are very much less gravely implicated in this discreditable custom than the bulk of the profession, but the following incident, which is a fact, shows how deep-rooted the system is in certain provincial centres. A London architect was commissioned to execute some small work in the country near London, where he resided, and invited a tender from a local builder. After viewing the drawings the builder asked, "Well, what have I to pay?" When at length the nature of his question was made clear, the architect had some difficulty in assuring the builder that he would accept no commission. Finally, the builder backed out of the room, shaking his head in doubt and perplexity, and wrote the next day declining to tender. He felt that there was something underhand in the transaction; that it was not fair and above board!



## NOVELTY IN ART.

By R. S. BALFOUR.

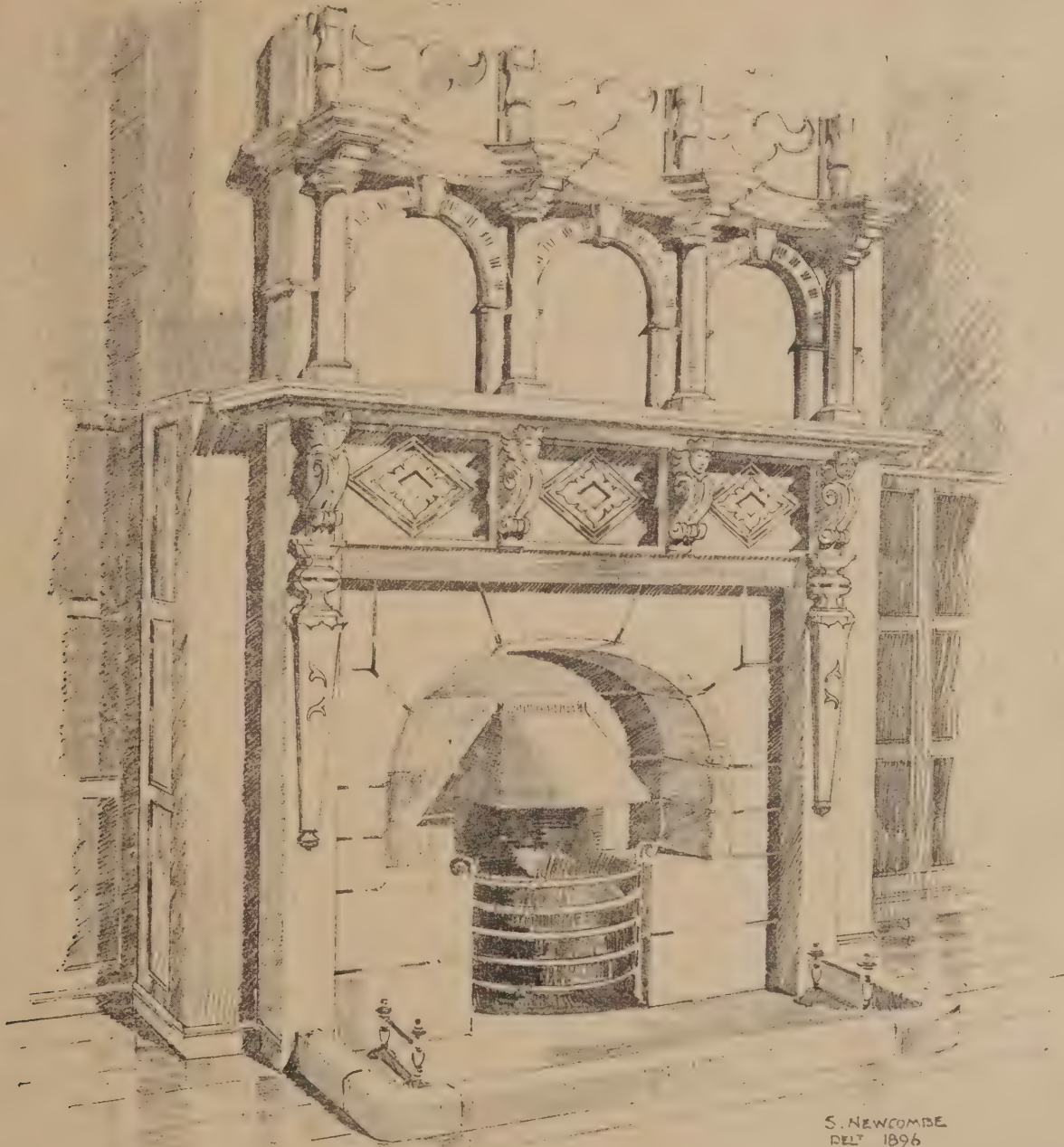
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WHAT must have been the increasing criticisms endured by those who introduced in succession all the various types and styles of Architecture, if we can bring ourselves to believe that a continual hostility was shown to any novelty, from time immemorial. From the trabeated styles of Egypt,

responsibility involved in the designing of the earlier domes, and of all the intricate problems which had to be solved and of the difficulties which had to be surmounted in their construction. The men who formulated such wild seeming schemes as these appeared, must have been as callous to criticism as they were confident in their ability to create something novel. Absolute determination and belief in themselves must have been the leading characteristics of William of Wykeham and Brunelleschi, when they could, in the face of all the opposition they encountered, realize

doctrines enunciated by himself have at length obtained credence with the world at large, and so in like manner there can be no moment in the professional career of an architect more gratifying than when he finds that, through his own instrumentality, a new phase of his Art is gaining the approval and appreciation of mankind.

For long we have been content to dally alternately with all the various styles, we have exploited each one in turn, we have been imitating and adapting or mutilating the features and forms of each, until most of them



ABERDARE HALL, CARDIFF: A DINING-ROOM FIREPLACE. HERBERT W. WILLS, A.R.I.B.A., ARCHITECT (see page 161).

Assyria, and Greece to the introduction of the arch in Etruria (itself the greatest novelty Architecture has ever known), which has held an unrivalled place in all architectural composition and construction up to the present day, when its place is gradually being monopolised by the metal girder; through all the minor variations in the different orders of the classic styles, or those of the various periods of Gothic, each one of which might well have been the field of a far more widespread controversy than anything we dare contemplate at the present day. Consider what infinite patience and thought must have been bestowed on each new step towards the development of the vault, each increase in the span, and each diminution of the support. Think of the

their ambitions and carry out successfully their departures from precedent.

And when we look backward and observe how each style and feature has attained a notable popularity in a greater or lesser degree, and how each example has become in turn an object which we apotheosize in these present days of exaggerated sentiment, should we not hesitate to criticise, cavil at, and condemn the works of men whom we consider to belong to an ultra advanced school, lest we may in years to come repent of the strictures we passed upon them, when at length their persistent efforts have been acknowledged as worthy of consideration.

Truly there can be no prouder time in any man's life, than when he becomes conscious that

have lost all their former significance in the chaos of modern work. But are we for ever to be contented with variation and repetition? Are we to remain constantly satisfied with forms long approved in the purposes for which they were invented; to mimic them time after time without compunction, with, it may be, senseless and trivial modification, all for the sake of imitation, in new materials such as science is daily placing at our disposal; no matter how alien their structure, or how widely dissevered the possibilities of their manipulation, and without any due consideration of their adaptability?

Let it be granted that novelty of design in Architecture demands from its originators no small degree of decision and confidence in



their own ability to command success. It is easy to understand reticence and a prudent reserve in the design of some great public or monumental structure which has to be executed in the most durable of materials in a prominent situation. In such a case it is even excusable that an architect should sink his own individuality lest he may be the cause of a wholesale condemnation of the taste of his fellow-countrymen at some future date.

But the last half century has witnessed the creation of a new field for the conduct of his experiments. Formerly, no building was undertaken except such as was intended to be of a permanent character. If the experiment of its architect at novelty was a failure, evidently its effect upon his reputation, like the nature of his work, must be a permanent one. Nowadays, when vast sums are spent on temporary buildings, such as those used for exhibition purposes, the length of whose existence is to be reckoned in fewer months than the tale of centuries which our ancient buildings have witnessed, there can be no excuse save only of indifference, that on such occasions we do not steadfastly set our faces against the recognition of the claims of tradition. Notwithstanding all the opportunities which have occurred during the last few decades, how limited is the number of instances in which it is possible to recall even the slightest attempt at radical departure in favor of any fresh conception of an architectural ideal. An ill-considered adoption of various recognised types, together with a crude assortment of meretricious ornaments,

appear to hold the balance of popular approval, with the careful and authentic reproduction of the design of some old town or street as its antithesis. If the theory which commonly obtained, that exhibitions are the best available means of fostering both Art and trade, has stood the test of practical experience, it is certainly very remarkable that the number of experiments in novelty of design are so infinitesimal, and still more so, that notwithstanding our incomparable advance of scientific knowledge and acquaintance with the elements of which our globe is composed, the number of materials which are utilised for the construction of these buildings have shown only a very slight increase, an increase by no means commensurate with the extensive discoveries of chemical research which has rendered the present era such a remarkable one.

Nowadays when iron and steel construction appeals so forcibly to us for the inauguration of a new style of Architecture, or, at all events, for the recognition of their legitimate claims, we close our apathetic ears to the demand for truth and frankness, and inclose our metal girders in wood coverings, or else construct beneath sham arches in lath and plaster, we case up our stanchions with marble slabs, and conceal our cantilevers in papier-maché coverings of regulation design, in order to try and conceal the obvious, to avoid even the semblance of the novelty of truth, lest we should have to plead guilty of a breach of precedent.

Fortunately for us engineering is an Art which has no hesitation in expressing its requirements and purposes, it is therefore

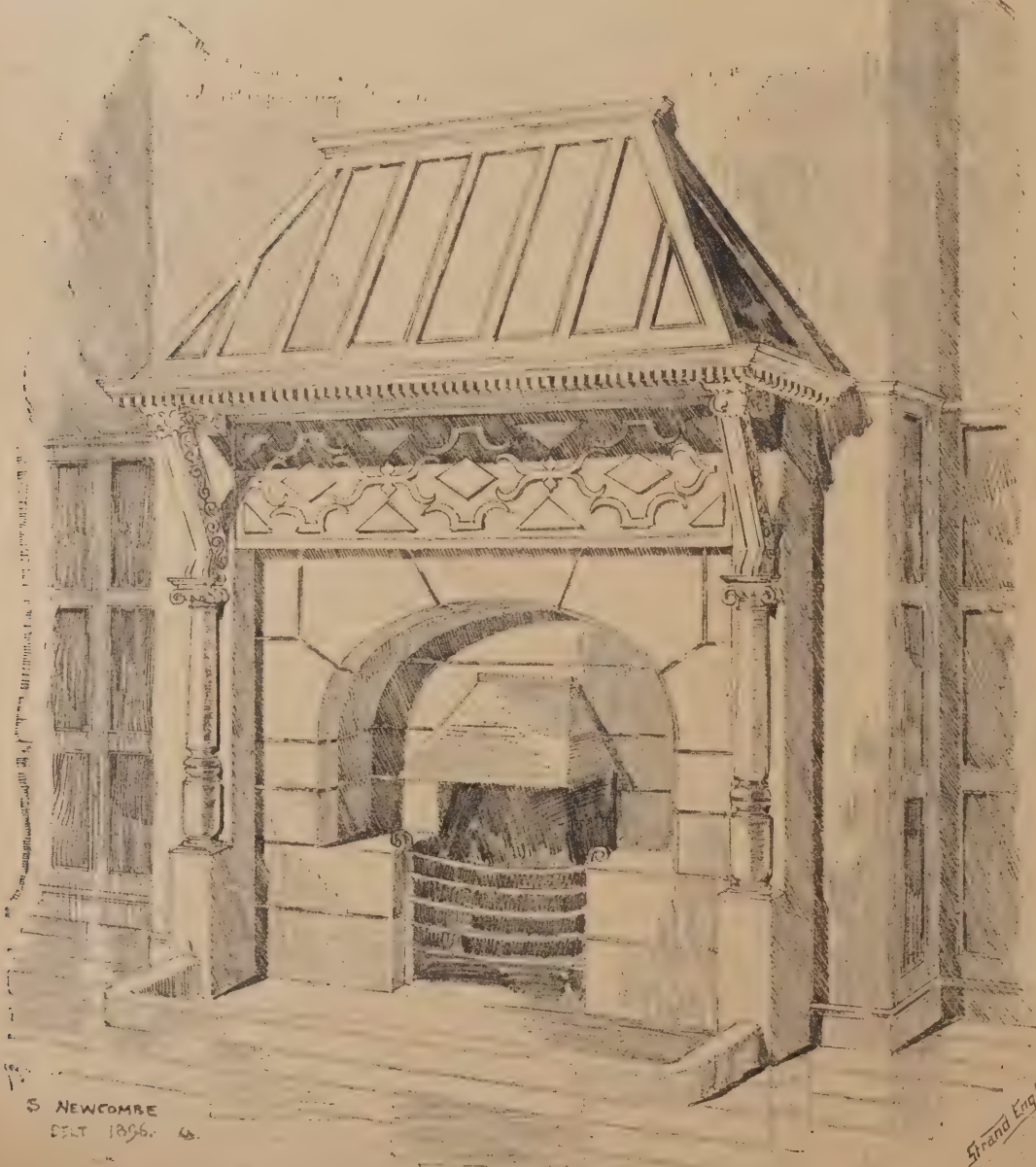
a more lively art nowadays than Architecture, in that it can boast of a far greater progression and production of new ideas. It has apparently usurped the place which Architecture occupied prior to the Renaissance, and its outcome is to train up in us a new sense of admiration and appreciation of its unconcealed simplicity, directness of intention, and the purpose of its existence. In future days will not the Forth Bridge, for instance, acquire a new significance in our eyes, for is it not a healthy offshoot of a new branch of Art. Modern engineering is to all practical intents an art which is governed by no precedents for the assistance of its votaries, and no traditions for their detriment, yet no architectural production in this century, at all events, can rival the novelties displayed in any great engineering work accomplished within the same period.

Still, at the present time there appear to be hopeful signs of a fresh revival in Architecture, for many are the evidences of dissatisfaction and the weariness of monotony. There are enthusiasts in the profession who are struggling for novelty. Even supposing their efforts may not always be considered successful by others, it must still be admitted that their work is most interesting and instructive. If its present exponents have their mannerisms, that is a fault which time will eliminate. Mannerisms are easily acquired, and far more easily copied, and therefore they are undesirable, in that imitation tends to reduce the value of the thing imitated. Will not the squat column, with its unseemly

entasis, the heart-shaped opening cut out of the now fashionable outside shutter of cottage architecture, and that darling of the present day decorative artist, the conventional tree with its complexity of spreading branches at its summit and its wonderful birds; will not all these in time become the portion of the speculative builder and the middle-class "painter and decorator," and then, their originators having placed these items under a ban, we shall class them in the category of things to be abhorred, just as we did in the case of the once well-beloved stop-chamfer, the vanished pitch pine ecclesiastical fitting, and the sash window subdivided into panes only above the meeting rail.

This a tiele has no pretence to be anything more than as it were a preface or introduction to a vastly attractive subject, each branch of which demands for its elucidation no small degree of patience and time. Its study will be found redolent with the intellectual savour of former ages, for it will enable us to grasp the evolution of thought required for the compassing of matters which we daily take for granted. Above all, its study will lead us to trace the divers paths which lead to those fresh developments and improvements which, if they are adopted by mankind, may perhaps result in placing their originators among the benefactors of our race.

**A Quarry Accident.**—An accident occurred last Wednesday at the Raemoir Quarry, Hill of Fair, Aberdeen, owned by the Hill of Fare Quarrying Company. A 10-ton crane, with a pitch-pine jib 62ft. long, was lowering a block of stone to the bottom of the quarry, 120ft. deep, when the jib suddenly snapped in being raised, and the stone fell, knocking the foreman backwards and stunning and severely bruising him. The man had a very narrow escape of being knocked into the quarry and killed.

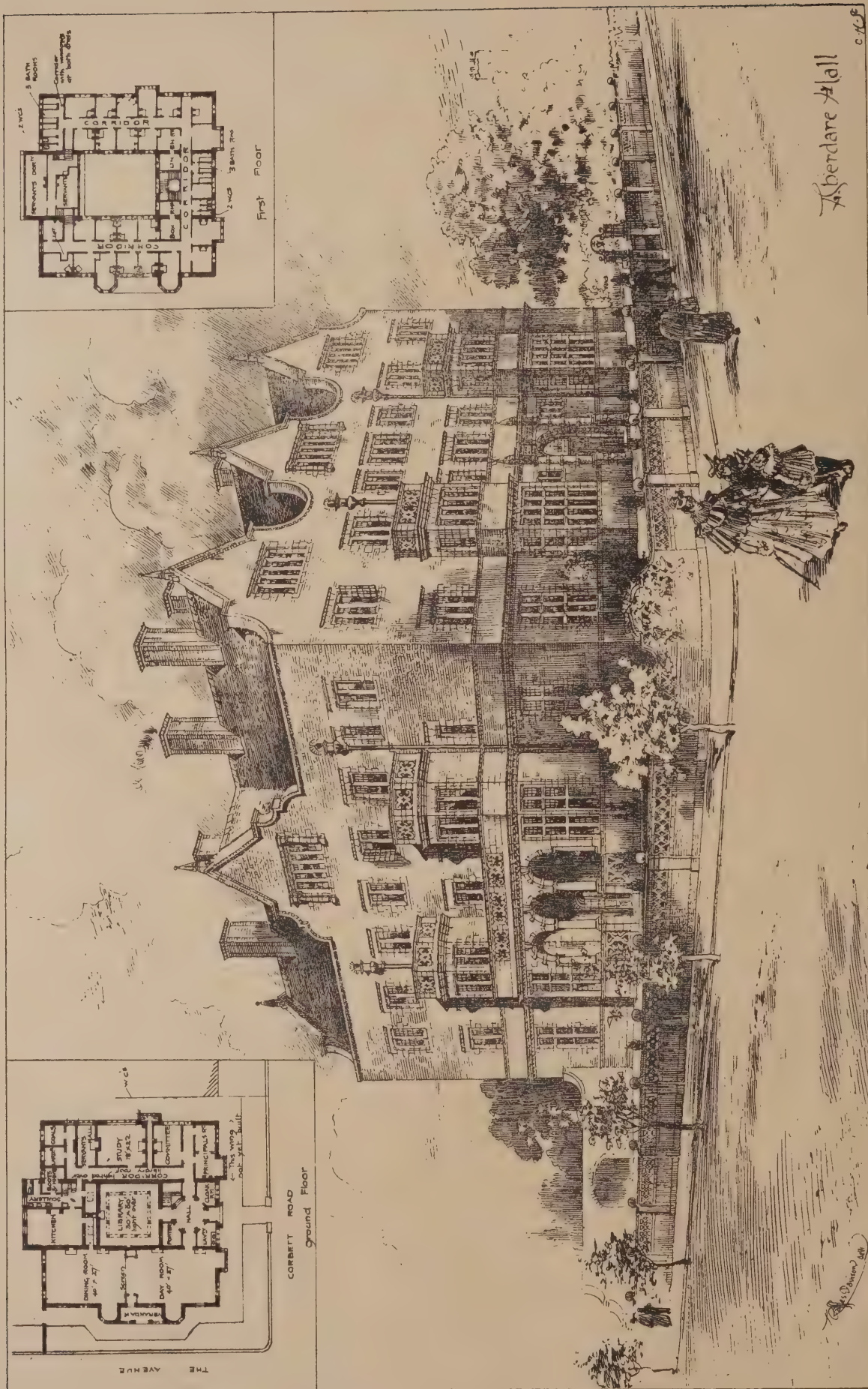


ABERDARE HALL CARDIFF: A DAY-ROOM FIREPLACE. H. W. WILLS, ARCHITECT.



UNIVERSITY OF ILLINOIS





ABERDARE HALL, CARDIFF: HERBERT W. WILLS, A.R.I.B.A., ARCHITECT.

(See page 161)





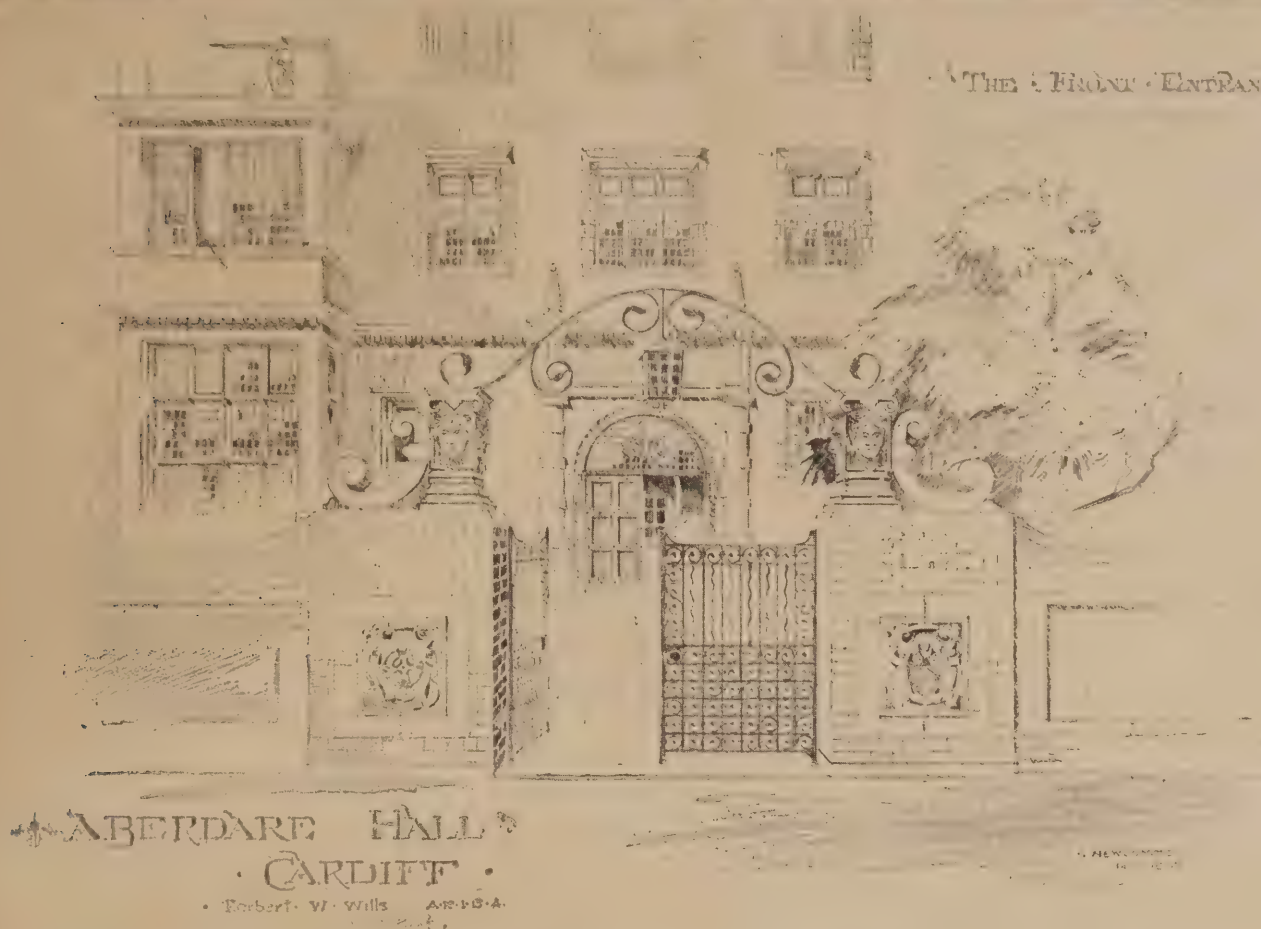
VANISHING BRISTOL: LLANDOVER TAVERN, OLD KING STREET. DRAWN BY W. LEE CLARKE.

(See page 162.)









## THE ABERDARE HALL, CARDIFF.

IN these times, when so much that is pretentious and fussy is being erected in our large towns, it is quite refreshing to find a building treated with such simplicity and breadth as the Aberdare Hall, Cardiff. The dignity of a design such as this is enhanced by comparison with the usual "public-house" type of Architecture so prevalent in most of our "growing" towns. This building, which was designed by Mr. H. W. Wills, A.R.I.B.A., of Swansea, is a Hall of Residence for the women students attending the University College of Cardiff. The portion at present erected (about two-thirds of the whole) was built in 1894 at a cost of £26500. It is built with Bracknell red bricks with terra-cotta dressings and tiled roofs. The windows are glazed with lead lights in iron casements. The wing not yet erected to the right of the entrance doorway will cost £3500, and will make the total accommodation to sufficient for 80 students. The inside work is of pine and painted. The day and dining rooms have a panelled dado, and are divided by a screen with glazed circular-headed top lights and moulded balusters, the pilasters at the sides of screen being ornamented with strap carving. The internal fittings generally are original in treatment, and bear the impress of thought, from the entrance door to a cupboard hinge. Unfortunately, now-a-days, an architect's work too often finishes with the outside of a building, the inside work being neglected, or left to the whim of a client, which generally amounts to the same thing. How often do we find in a specification that "the grates, mantels, &c., will be selected by the owner," which generally results in the acquisition of some enamelled slate monstrosities entirely out of keeping with the rest of the building. In the case of the Aberdare Hall the architect does not seem to have been so hampered, but has been allowed to work out his own salvation, with the result that the whole of the work is in keeping both internally and externally. The excellent results accruing from this are especially noticeable in the fireplace designs, two of which we publish. The entrance gateway is also characteristically treated with an

overhanging lamp and well designed wrought-iron gates, leading to the main entrance with its panelled and nail-studded doors.

The building stands in the Corbett Road, at the rear of Cathays Park, and immediately behind the site of the new Town Hall and Law Courts about to be erected from designs by Messrs. Lanchester, Stewart, and Rickards. It is skirted on the left by the grounds of Cardiff Castle, so there will be at least three places of interest in this part of Cardiff not to be missed by lovers of "Architecture as it should be."

S. N.

## THE ARCHITECTURAL MUSEUM.

BY E. B. HOARE.

THE title of the Royal Architectural Museum (open daily from 10 a.m. to 4 p.m.) conveys but little to the passer-by, who probably has not even noticed the iron flags on the lamp-posts outside Dean's Gate. The passer-by, as a general rule, does not notice much, and anything that is not obvious remains unseen. But the cult of observation is becoming more studied, and the evolution of the "poster" tends to increase this. All are agreed as to the merits of the cult of observation! Following then the direction of the little iron flags, we thread our way through Dean's Yard in safety, if the scholars are not playing football, and in considerable danger if they are. Dean's Yard is always a great disappointment to the artist mind, so black and dirty, so different from what it might have been; its Gothic windows filled with plate glass reflecting the sunlight with splendour. Through the arch at the south corner we see the object of our search in a street, which is small and squalid, full of life, and alas! full of death: for death there must be where such squalor abounds!

The "Architectural Museum" which stands in the brighter portion of the street is a pretentious building, in a style which may have taken a Venetian palace as its model. It is built in red brick, composing a scheme of pointed arches, and decorated with coloured

tiles and other protruding ornaments, with statues either side of the main entrance in canopied niches, one of which represents William Rufus holding a miniature Westminster Abbey in his hands—a strange spectacle in such a street. Strange as it is outside, it is doubly strange within. Drawing aside a heavy curtain, and passing between two Cerberus-like persons with crowns on their heads, we discover, and are surprised at the discovery, that the main hall is filled with ladies in different coloured blouses, drawing from the antique; one naturally asks whether this was the museum we came to visit, but looking round, the architectural nature of the institution is obvious.

A great centre hall, lighted from the roof, is surrounded by two galleries supported by wooden pillars, iron girders and other such methods of construction. The galleries are approached by an iron staircase in the north-west corner, and lead to different class rooms. On every possible peg, on every tie beam or strut, and in every nook and corner is there suspended some specimen of architectural detail, Gothic or otherwise, plaster casts all of them, which age has given the appearance of stone, and which dirt has mellowed into the appearance of great age; and on the ground floor, incongruous as it seems, are casts of some of the great statues of the world's history. The Venus of Milo, for instance, is almost standing on the cast of an ancient Saxon font, framed, though partly screened, by a white sheet hung there to give full value to the "contour" of the figure, in the arcading from "Notre Dame" at Paris. Her eyes are fixed on the tomb of some mediæval worthy, while above her head are festoons of Gothic caps from Westminster Abbey, Lincoln Minster, and elsewhere. Again, the "Dancing Faun," gazing at the recumbent figures of heroes of yesterday, still continues to dance, as it were, in the glades of Thessaly, to the edification and delectation of the art student.

These details are entirely unheeded by the habitués of the museum; daily do they pass through this curious maze of ancient, mediæval, and modern art; for the most part they are unaware that there is, concealed behind the dirt and dust that reigns, much of



beauty and interest. On the wall of the staircase there are some panels of Italian detail, full of grace and charm, some interesting shields with the emblems of the Passion carved on them; on the first floor several panels of excellent stained glass; stowed away in a dark corner are some models of country churches, deftly made; and more ambitious still, on the top floor, a model of Salisbury Cathedral, of a Greek temple, a cast of some Indian details, casts of the angel spandrels in Westminster Abbey, and among all these, one cannot help noticing the noble Saxon fonts, the Egyptian monolith, and the strange god or goddess, from Burmah perhaps, who, sphinx-like, sits and watches the life class men students resting during the intervals of work hard by; who listens to their idle talk of art, of the past and the present, nay, the future also; talking not without much speculation as to the places they will severally take in the world's art history.

In dirty weather the museum is gloomy. It appears to be haunted by weird Gothic spectres, by classical ghosts. Fair weather, on the other hand, shows up the grime of years, discloses all there is to see.

Without being historical it would be as well to inquire into the origin of this strange place. The architectural museum was started as an institution to be devoted mainly to the study of Gothic detail. During the early revival of Gothic architecture, the architects who were then in practice took up the scheme with pleasure; and a large number of those aspirants to the higher flights of church building formed themselves into a society which should start an institution or a museum where it would be possible to study Gothic detail. Theoretically a good scheme, it was also good in practice; and for many years these architects submitted their annual subscriptions and studied with assiduity the details which before had been difficult to approach.

The revival of Gothic Architecture was a new child, born of the absurd evolution of the classic period witnessed in the latter efforts of that period in London. It was an idea worth cultivating, and the success of it can hardly be estimated at its own value by those who practice to-day. They do not allow for the untrodden ground the early revivalists went over, nor for the mass of work they did. They, who have profited by the successes and the failures of these enthusiasts, do not realise the excellence of their ambitions and, indeed, the success of their conceptions. They do not allow all this, because experience has shown them that mere imitation will not suffice. But without the Gothic revival it is hard to say to what passes English church building would not have reached. The Gothic revivalists naturally found the architectural museum a boon to their work; where they were at sea in design, they had but to refer to the detail in the museum and all was made clear to them. Thus in these days, therefore, when modern architecture is looking up, and when design is more imbued with individuality—when, indeed, people have ceased to copy, it is not surprising that the museum for the study of architectural detail should, in its original scheme, decay.

So it came about that an art school was started, as the architectural subscriptions fell off, on Government principles; an art school which has, through the industry and excellence of its curator and teachers, raised itself to the level of the best metropolitan schools. Art reigns in this place in a way which is quite perceptible, although everything is against it, and its attendant circumstances are not ideal. Yet art seems the pervading spirit in the place. The work that is done here is good and the number of students is increasing. Owing to this increase the question of accommodation has become serious, and it has been found necessary to enlarge the premises, to free the study of the antique from its Gothic surroundings, and to make things more comfortable for the students. But, having described the museum as an architectural institution, it would be well to postpone the description of the museum as an art school till another occasion.

## VANISHING BRISTOL.

BY THE REV. H. J. FOSTER.

WITHIN very recent years there has been a great clearance of the remains of Old Bristol. So modern a book as Nichols and Taylor's "Bristol and Clifton" mentions many "bits" dear to the eye of an antiquary or an artist which have now disappeared. The Pithay, shown in the drawings by Mr. W. L. Clarke, reproduced in our inset plates, is being swept away at the present time. The gabled houses on the left, as a visitor faces up the ancient thoroughfare, are gone. A licensed house at the top of the rise is a vested interest not likely to be touched, and has as yet escaped; and the opposite side is for the present saved by the occupation of some of the houses by Messrs. J. S. Fry and Sons, of cocoa fame, and by an apparently prosperous vendor of all kinds of workmen's tools. But all that was picturesque is gone. Opposite the licensed house there faced into Wine Street a noble-looking mansion, whose parge-ted front bore an imposing set of armorial bearings, which bespoke an occupation in older days by tenants of no mean social standing; but only the merest skeleton of the timbered framing of the front is now left. The old Pithay will soon be a thing of the past; and the Llandoger Tavern in King Street, with its neighbours, shown in Mr. Clarke's other drawing, is also scheduled for early removal.

Such changes are inevitable, however one may regret the disappearance of these links between the present and the past. These "bits," which are the delight of the artist, become the despair of the sanitarian, and the difficulty of the guardians of order in the city. In the earlier years of the present century the Pithay became a "slum" of the worst type, the quarters of the beggary and violent rascaldom of the city. Mr. Charles Bird, the Bristol etcher, who has done so much to preserve Vanishing Bristol from utter forgetfulness, has given us "A Broil in the Pithay," in one of his series of plates. Broils were part of the daily life of the narrow street, whose old age had become too vile to be venerable.

Yet the old Pithay carries the thoughts back to the very beginnings of the city. The steep gradient of the short street is the slope of the face of the little plateau of New Red Marl, on which the most ancient Bristol stood, encircled and defended by the Avon and its tributary the Frome. At the upper end of the street was one of the gates in the first city wall, between whose foot and the Frome lay an open meadow, falling towards the river bank. The foundation of this wall was seen—6ft. thick—so late as 1820. The Frome runs in its old course to-day, but gropes its way in complete darkness under Union Street and other thoroughfares near at hand. The name Pithay preserves the memory of the meadow; it is the path down to the *puits de la haie*—the Well Close, as the East-end Londoner calls his Pithay. In Norman times, or earlier, a suburb sprang up in the meadow under the wall, which between 1069 and 1100 was inclosed by an outer wall that ran along the river bank. Over the Frome was built a bridge with a gate, the Pithay Gate of the later city defences. When Messrs. Fry erected their large works at the foot of the slope, portions of the masonry of bridge and gate were found. Both had disappeared in 1764. The gate carried two cannon, and the bridge, like Bristol and London Bridges, had houses on either side of its short length. Mr. Clarke's drawing shows how the ancient roadway across the meadow and down to the stream, now loses itself at the lower end in the heart of Messrs. Fry's premises. Their extensive works have also absorbed the Pithay Chapel, which stands in sadly faded respectability at the bottom of the hill, in a retired corner. It was rebuilt in 1791, but its predecessor belonged to the earliest Nonconformity of Bristol. It was built in 1653, to be the first distinctively Baptist church in the city, and from it have sprung the Old King Street and City Road churches of to-day. One

of its old pastors, Andrew Gifford, the son of a cooper in Redcliffe Street, was a strong partisan of the Duke of Monmouth, and only narrowly escaped being killed in a chance *melée* the day before Sedgemoor.

In 1618 the rector of Christ Church, Edward Shaw, had a rectory house granted to him in the Pithay, from which, in the stormy days of the Commonwealth, he was ejected to make way for a successor more pliant to the changes of the times. The well-known Bristol antiquary, Mr. W. Latimer, in his "Annals" says: "It would require a good imagination on the part of anyone now traversing the Pithay, and the sordid neighbouring thoroughfares lying between Broadmead and Tower Lane, to represent to himself the locality as a place of public recreation and fashionable resort. No more singular testimony of the local changes effected by time could well be adduced than is to be found in an advertisement published in the Bristol papers in May, 1810, announcing the sale of twenty-nine void old houses in the Pithay and Bowling-green, in the parish of Christ Church. Amongst the lots were "the timber and materials of the Old City Assembly Room, situate in the Bowling-green aforesaid"; and "the timber and materials of the Old City Assembly Rooms Tavern, in the same place." Both these buildings had been last in the occupation of a basket-maker. The ground is now occupied by Wellington Street and All Saints' Street. This Pithay Bowling-green was one of the earliest scenes of the open-air preaching of Whitefield and Wesley.

## ARCHITECTURAL ASSOCIATION.

### MODELLING AS APPLIED TO ARCHITECTURE.

BY F. W. POMEROY.

A MEETING of the Architectural Association was held last Friday evening at 9, Conduit Street, London, W., Mr. G. H. Fellowes Prynne in the chair. It was announced by the secretary that Mr. G. H. Fellowes Prynne had been re-elected president of the Association, and Mr. H. T. Hare, vice-president. Mr. F. W. Pomeroy then read a paper on "Modelling as Applied to Architecture," and gave several practical demonstrations. The author began by saying that the subject on the agenda paper was "Modelling as Applied to Architecture," but he had ventured, for the sake of comparison, to alter the title and subject of his paper to "Carving and Modelling as Applied to Architecture." He had derived much assistance from a paper by Professor E. A. Gardner, who had given much time to the subject. He was also indebted to his friends, Mr. Stirling Lee and Mr. Roscoe Mullins, for kind assistance.

#### Early Stages.

The history of art was ruled by the same great laws of Nature which influence all temporal things, and was rather a story of evolution than of creation. When the art of one nation ripened, the germs were carried to another soil, and taking root under new influences, sprung up again alike, but with climatic differences. The first enjoyment of man, beyond satisfying his animal propensities, was provided by rivalry. Hence the early history of all nations emerging out of savagery was the history of wars undertaken for the purpose of pre-eminence in a certain object. When a nation settled down, and cities were formed, the growth of handicrafts took place, and many artisans stepped forward, and a few artists. We had the builders, stonecutters, and carpenters, whose artistic development was architecture, sculpture, and painting. The house or living shrine had a threefold use: it was needed for the living man, for the dead, *i.e.*, the tomb, and for the incarnation of religion, *i.e.*, the temple or the church.

#### Primitive Ideas.

The idea of the primitive artist was to imitate his living models as nearly as possible, but the



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VANISHING BRISTOL: THE PITHAY.. DRAWN BY W. LEE CLARKE.

(See page 162.)





VANISHING BRISTOL: THE PITHAY. DRAWN BY W. LEE CLARKE.

(See page 162.)



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great merit of the early Egyptian and Greek sculptor was to reproduce in granite and marble literal copies of human or floral forms. The monumental simplicity of the Egyptian carvings showed the natural development of his resources. It was easier to trace in an unfinished work the methods employed. Mr. Pomeroy showed a picture of an unfinished statue lying near the quarries at Naxos; the legs from above the knees were lost. The first thing noticeable was the extreme flatness of the surface at the front, back, and sides. It had often been observed that many Archaic statues were square in shape—i.e., in the horizontal section—and this squareness also seemed to belong to all the schools connected with the beginning of sculpture; but in the Ionic types this squareness was rounded off at the corners. It was to be inferred that they were made on a process in which the front and side outlines were first drawn on the block, and then cut straight through parallel to the side and front lines, details being added and corners rounded off afterwards, but the general squareness of shape being preserved. Another example of an unfinished statue showed three small drill holes over the brow in the middle of the statue horizontally, made in pieces of marble, evidently left for the purpose, and intended to be worked off when the statue was finished. At the bottom were two corresponding holes, one between the feet and the other on the left foot. These holes must have served for the adjustment of a rod or line fixed vertically down the front plane of the block, to serve as a guide to the sculptor. There was not the slightest indication that a finished clay or plaster model was ever made to serve as a guide. A Greek artist of the best period may have helped himself by the use of sketches in clay. Many instances could be given that marbles were cut by a series of planes until the facets became so small that the work was completed.

#### Modelling in Clay.

From the earliest times modelling in clay was common and customary, as it was a material easy to work. The hardening by drying, baking and burning, had led to its use for a variety of ornamental purposes. Sun-dried clay was used by the Greeks for internal decorations. The use of terra-cotta was also very extensive. It was evident that modelling in clay must have preceded working in bronze or marble. Modelling in clay or soft wax was a system of building up by adding pieces of the material until the surface desired is arrived at. It could be worked with boxwood or ivory tools and wire, but the fingers and thumb were the modeller's tools *par excellence*. The art of modelling had reached its highest point in France, and there it was worked out with consummate skill. In conclusion, Mr. Pomeroy thought that a close and careful study of nature, by means of drawing, was the best means of getting at a full and proper understanding and appreciation of the great works of the past, and of producing real and living works in the future.

After the reading of the paper, Mr. Pomeroy demonstrated by means of a magic lantern the difference between the modeller and the sculptor, and showed the method of working of the modeller. Many pictures of the sculpture of the French style were shown, and also examples of bronze work. Illustrations of bas-reliefs in the Palace of Assarnasir, Venus of Milo, a bronze head in the British Museum, the statue of St. George at Florence, the gates of the Baptistery at Ghiberta, and a bronze representation of Perseus were exhibited.

#### THE DISCUSSION.

The president thanked Mr. Pomeroy for the very interesting and instructive lecture he had delivered, and thought that many of those present would realise that modelling was of great benefit to the architect. There was no single art or craft of more use to the architect than modelling. He believed that the true sculptor had more sympathy with the architect than the painter had.—Mr. Stirling Lee bore out what Mr. Pomeroy had said, and said the architect must not forget that modelling was an important help.

In designing a ceiling, a model in clay or plaster showed the architect exactly how the work would appear when finished.—Mr. Seth Smith recognised the great difference between the modelling and carving schools, and that the carver should be in perfect sympathy with the architect. A problem to be discussed was terra-cotta as a material for building purposes. Restraint should be exercised in its use. He also thought that the employment of models was a satisfactory way of arriving at an idea as to how the work would look when completed. It was a source of enjoyment to the architect to model, that is if he could find the time to do so. With regard to working over bronze castings, he considered that there was a disposition at present to leave the surface too coarse. Mr. McMillar referred to methods of modelling by means of dipping strips of canvas into plaster, with wax and with Portland cement.—Mr. Gandy offered a word or two in defence of terra-cotta, and said that any bad effects produced by its use were generally the fault of the worker, and not of the material.—Mr. Hart was in accordance with the lecturer on the importance of modelling in connection with Architecture.—Mr. E. Howley Simm wished to know what the lecturer thought about colouring sculpture.—Mr. I. Broad was another exponent of the value of terra-cotta, and thought it was the training they got which led them to its misuse. He considered that if the modeller in terra-cotta had the carver's training it would be an advantage. The chairman then proposed that a vote of thanks be passed to Mr. Pomeroy. This was done with acclamation, and Mr. Pomeroy, in his reply, said that with regard to the question put by Mr. Smith as to which was the best way to use terra-cotta, he would not attempt to answer it, as it would involve a very long explanation, but he thought it should be used more as a dressing. In some Italian and other work the terra-cotta dressing was agreeable, but he pointed out that when it was covered with a glaze or painted, it became disagreeable. Colour should be used with reticence in English buildings, although there was much scope for it in such places as London.

**A Memorial to Lady Cromer**, in the form of an asylum for foundlings and unprotected orphan children, is to be erected on ground adjoining the Egyptian Government hospital at Kasr-el-Aini, and will form a fitting monument to Lady Cromer's charitable works amongst all classes during her lifetime in Egypt.

**Bristol Association of Clerks of Works and Builders' Foremen.**—At the monthly meeting of this association, held at 11, High Street, on Tuesday, the first of a series of lectures on the five orders of architecture was given by the president of the association, Mr. W. Kidwell, and was listened to by a large number of members with interest. The lecture was illustrated by a series of limelight views, showing examples of the different orders of architecture; many views of the ancient ruins at Athens, our English cathedrals, and other interesting views being shown as examples.

**Bootle Electric Lighting.**—The question of lighting the borough of Bootle with electricity was started about fifteen months ago, when it was resolved to spend £33,500 in carrying out an electric lighting scheme, and £3,500 for the scheme generally. It is expected that the plant will be finished by this week. The supply station is situated in Pine Grove, and the system adopted is the three-wire continuous system, the current being supplied to consumers' lamps at a pressure of 220 volts. The carrying out of the work has been superintended by Mr. Thomas L. Miller, the consulting engineer to the Corporation, Mr. O. F. Francis acting as his clerk of works; the buildings are from the plans prepared by the borough engineer, Mr. J. A. Crowther. The contract has been carried out by Messrs. T. Parker and Co., Ltd., Wolverhampton, and at present Mr. F. A. Robins is acting as resident engineer.

## A "BUILDERS' JOURNAL" COMPETITION.

### DESIGNS FOR A COUNTRY HOUSE.

IN accordance with our announcements, we have arranged a competition, to be open to all our readers, for designs for a country house.

All intending competitors should read carefully the following details, which have been revised and amplified since the original announcement of the competition in our last week's issue.

As the competition is intended to meet the requirements of an individual correspondent, we append a statement of his wishes and, in making the awards, preference will be given to designs which most nearly comply with the following requirements:—

"I want a house long and low, with a large square entrance hall, to be used as a comfortable sitting-room, a wide staircase, and a gallery going partly round hall, a dining-room and boudoir for a lady, about six bedrooms, and three servants' rooms, with comfortable offices, &c. I want something a little unusual, either dark stained wood and thatch, or old timbers and thatch, and all kinds of angles and windows."

The house is to be built on a level site on the crown of a bank overlooking a large garden which is surrounded by woods. The grounds in which the house is to be built cover an area of  $6\frac{1}{2}$  acres, and are situated in the neighbourhood of Hythe. The house will face N.W., but the main entrance is to be at the back, facing S. The drainage runs N.N.E. The house is to be long and narrow; the roof may be thatch or tiles, but not slate; large eaves are desired. In addition to the requirements given above as to the rooms, it is desired that there should be a small study and two bathrooms—one in connection with the best bedroom. No stable is required. The cost of the house should be from £1,500 to £2,000.

Any intending competitor wishing to view the site can obtain the exact address by communicating with the Editor.

The designs submitted may include a perspective view, as well as plans and elevations, and must be accompanied by a brief specification (that is to say, a description of the house and the materials proposed to be used). They may be drawn to any convenient scale, but must be inked in and be without colour or wash.

Drawings must be despatched so as to reach the Editor of the BUILDERS' JOURNAL not later than May 24th; they must be submitted under a motto, accompanied by the name and address of the competitor, in a sealed envelope.

Premiums of £10 10s., £5 5s., and £2 2s., will be awarded for the three best designs. The services of a well-known architect will be secured to act as assessor. The three premiated designs will be forwarded to our correspondent, who may commission the carrying out of one of them; but it must be understood that our responsibility in the matter ends with the payment of the premiums.

The drawings will remain the property of their authors, but we reserve the right to reproduce any we think fit.

Lostwithel Wesleyan Church has been extended by the addition of a new transept.



## Enquiries Answered.

*The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.*

### ARMORIAL BEARINGS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—I have a design in which I wish to embody the arms of the Franciscan or Grey Friars. Can you tell me what they were?—Yours, &c., G. W. Great Yarmouth.

Religious orders, as such, have no heraldic insignia. Abbeys, and other religious foundations, possessed armorial bearings peculiar to each institution, generally those of the founders. G. C. R.

### EFFLORESCENCE ON TILES.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Would you kindly inform me how to stop efflorescence appearing on the tiled floor of a verandah. The tiles are laid on slate slabs, and, after they are washed, the efflorescence will appear again. Various methods have been tried, all to no purpose. Putney. "SUBSCRIBER."

The efflorescence most probably arises from the fact of inferior clay having been used in the manufacture of the tiles, or in the tiles being underburnt. There is no remedy but to relay the tiles, although in time the efflorescence may possibly sweat itself out.

### ORNAMENTAL LETTERING.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Could you give name and address of typefounder for the ornamental letters on the back cover of your Journal, March 15th, No. 214?

Do you know of any useful book giving alphabets for architects' plans and drawings? If so, title and publisher's name will oblige. Plymouth. J. B. F.

The lettering referred to is done by an artist for a special block; it is not type. However, Mr. McCoy, American type agent, of 54, Farringdon Road, London, E.C., has type very similar in style. In reply to the second question, "Alphabets, Old and New," by Lewis F. Day, price 3s. 6d., published by Batsford, 94, High Holborn, London, is a book that will probably suit your purpose.

### COLOURING PORTLAND CEMENT.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Can you inform me how cement-plastering is coloured and finished so as to appear similar to buff terra-cotta? I have seen a few jobs in red brickwork and buff dressing, similar to buff terra-cotta, but am not sure whether the dressings were coloured cement or some kind of composition.—Yours faithfully, Dundalk. STUDENT.

Portland cement work is frequently coloured to imitate Mansfield, Bath, and other natural stones, and also terra-cotta. Portland cement dressing for brick façades may be formed *in situ*, or cast and built as the work proceeds, but in either case the Portland cement is coloured as required while the cement is in a plastic state. This method gives better and more lasting results than if the work is coloured externally. The colouring of Portland cement is effected by mixing mineral oxides of the required colour and proportion with the cement used for the surface coat. The quantity of oxide to be added to the cement depends upon the strength of the oxide. Coloured surfaces, cast or formed *in situ*, are greatly improved by brushing the work as soon as set with a solution of the same colour as used for surface coat. Earthy colours, like

Venetian red and umber, should not be used for colouring external cement work, as the colour soon fades, and sometimes scales. Roman cement, Sheppey cement, and Madeira cement, were formerly in general use for concrete dressings, but their use is now entirely superseded by Portland cement, which is stronger and more durable than either of the above-named cements. Artificial stones composed of hydraulic limes, sand, and stone dust—coloured as desired, and consolidated by hydraulic pressure, are also used for dressings, &c. These artificial stones are generally cast in moulds to the required forms and in some instances they are worked by hand, similar to natural stone.

W. MILLAR.

### INSTITUTE OF SANITARY ENGINEERS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Could you inform a reader through the columns of your valuable paper the address of the Institute of Sanitary Engineers, also cost per annum to Members and Fellows; whether any other qualification is required in addition to being a consulting and practical sanitary engineer, and are there any examinations to pass? S. E. Devizes.

The address of the Institute of Sanitary Engineers is 63, and 64, Chancery Lane, London. To become a Member or an Associate of the Institute, without the formality of nomination, it is necessary to pass an examination in the following subjects:—Building construction, water-supply and drainage, sanitary science as applied to buildings, and sanitary law. The fee for the examination is two guineas, and the candidate on passing is qualified to join the Institute as a Fellow or Associate, in accordance with the marks gained, and is exempt from payment of the entrance fee and half the annual subscription. The entrance fee for Fellows is two guineas, and the annual subscription is two guineas; and for Associates, and country Fellows the entrance fee and annual subscription are in each case one guinea. Further particulars can be obtained on application to the secretary.

### SURVEYORSHIPS AND ENGINEERING INSTITUTIONS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Will you kindly inform me whether borough surveyors have to pass any examination, and if so where I could procure a syllabus of the questions; also what is the procedure to be adopted to become a member or associate member of the Institute of Civil Engineers.—Yours truly, Winslow. SURVEYOR.

No examination is necessary to qualify a candidate for the post of borough or municipal surveyor. His chances of success will, however, be immeasurably increased if he has passed some recognised examination or is a member of one of the engineering institutions. The two principal are the Institution of Civil Engineers and the Incorporated Association of Municipal and County Engineers. Candidates are admitted to the Institution of Civil Engineers as students and associate members. Students must be over eighteen and under twenty-six years of age. They must be or must have been pupils of corporate members, and must be engaged in the profession of a civil engineer. Candidates for associate memberships must be over twenty-five years of age: (a) They must have been educated as civil engineers, and passed the examination appointed by the council; or (b) they must satisfy the council as to their training, have been engaged at least five years in the occupation of a civil engineer, and must be so engaged at the time of their application, and must also furnish a satisfactory thesis on a professional subject. Applications for election must be made to the Institution of Civil Engineers, Great George Street, S.W., on the proper forms supplied by the Secretary. Candidates for the Incorporated Association of Municipal

and County Engineers are admitted as members and graduates. Members must be engineers or surveyors holding chief permanent appointments under municipal corporations, county councils, or urban or rural sanitary authorities. Graduates must have passed the examination appointed by the association. Particulars can be obtained from the Secretary, 11, Great George Street, S.W.

### BUILDING CONSTRUCTION CLASSES.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Would you be kind enough to inform me, through the valuable columns of your paper, the best and most economical institute for a young fellow to learn building construction.—Yours, &c. F. J. H. Hammersmith.

The classes at the Polytechnic, 309, Regent Street, and at the City of London College, Moorfields, may be recommended. The fees in both cases are very moderate.

## Correspondence.

### REGISTRATION OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Would you be kind enough to give me your opinion, through the columns of your valuable paper, as to what would be the chief advantages or disadvantages gained if the above came to pass?—Yours faithfully, Liverpool. W. M. R.

[We shall be glad to publish the opinions of some of our readers on this subject, and reserve, for the present, our own.—Ed. B. J.]

### MAKING BLUE PRINTS.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—The following notes may prove of service as a supplement to the information given by G. A. T. M., in your issue of April 5th, page 133. If "Bricklayer" only requires to make a few copies at a time he may find it much cheaper to prepare his own printing paper; a roll of paper will seldom keep in good condition more than a few months, and if exposed to damp will quickly become useless. Procure two solutions: "A"—citrate of iron and ammonia, 4oz., water one pint; "B"—red prussiate of potash, 3oz., water one pint; and a roll of lightly sized printing paper of the desired strength. When required, equal quantities of the two solutions should be mixed together in a saucer, and applied evenly to the surface of the paper by means of a small sponge, this operation being performed either in gaslight, or in a well darkened room. When dry, the paper should be stored in a light tight drawer, or tin case. Never mix the solutions till they are required for use, and do not attempt to save any of the mixed solution which may be left over. The printing and washing should be done in the manner described by G. A. T. M., except that if the copy is required to be the same as the original, and not reversed, the drawing must be placed in the printing frame with the lines towards the glass; this is specially necessary if there is any printing or writing on the tracing. The tracing which has all the lines in deep black ink is the best, but most coloured lines may be reproduced (particularly reds and browns) if the exposure to the light is only carried far enough to give light blue prints.

Edinburgh. ALEXANDER DREW.

The New Free Church Hall, Laurencekirk, was opened last week. It is situated at the north end, and in connection with the church. The windows are of stained glass, and the heating is by a stove of the newest principle. The contractors were:—Mason, Mr. Crabb, Brechin; slater, Mr. Scott, Brechin; joiner, Mr. Dunbar, Laurencekirk; plumbers, Messrs. Rae and Son, Laurencekirk; painters, Messrs. Bruce and Son, Laurencekirk.



## Views and Reviews.

### FOR MATRICULATION STUDENTS.

The present half year's issue of this well-known Directory contains the papers set for the January, 1899, Matriculation Examination, with model answers to them. There is also provided much information on the regulations of this examination, with suggestions as to text-books for study, and notes on the special subjects for the examinations to be held in June, 1899, and January, 1900. The University Correspondence College Calendar is also bound up with the Directory and provides a most comprehensive epitome of information on the various examinations of the University of London. This College is generally recognised as the most suitable for a candidate for the examinations to attend, for during the past six years 4347 students of the College passed, and of those 431 obtained places in honours.

The Matriculation Directory, No. XXV., January 1899, with articles on the Special Subjects for June, 1899, and January 1900. University Tutorial Series. London: W. B. Clive, University Correspondence College Press. 1s. nett.

### APRIL EXHIBITIONS.

"Enough for one day; go home and think about what you've seen."—RUSKIN.

GOUPIE'S.—If the reader does not make haste he will not be able to see a choice selection of paintings by the Norwegian artist, Fitz Thaulow,—Norwegian by birth, it may be, but by no means confined to the soil, for we find him as far from his home as Venice, New York, and Paris. The view of "Washington Place, New York" might have been taken for one of Richmond Green, were it not that the houses are redder than older red bricks could be, and that the sward is greener than green. This is a very fine painting, however, and will be surely admired by those who say that our sorry old Earth is barren till the architect happens along. The painting of "A Side Canal, Venice," can hardly be praised too highly. It would appear that there are few of Nature's aspects with which the artist is not familiar—instance, "The Torrent"—and as nothing is shown but entirely successful work, we are not in a position to say what may have baffled the painter. In the Academy to be opened now shortly, there will hardly be one in a hundred pictures to praise, and the "sad mechanic exercise" of the critical faculty will become a painful necessity, but here there are just a few pictures to praise unreservedly, and little or nothing besides.

NEW ENGLISH ART CLUB.—An unusually good exhibition, for the "eccentrics" who formed the society appear to be more or less played out, and we find ourselves applying precisely the same tests to the pictures as we should if we found them elsewhere. Coming first upon drawings and things, one wonders whether No. 41, described as a "zincograph," is only one of a number of prints; if so it would seem that colour-printing has reached perfection, for, comparing this with a water-colour by the same artist, the differences are scarcely perceptible. The student of the pre-Raphaelite movement will notice a little painting by W. L. Windus, but nothing great in scale can fairly be asked of the man who painted "Burd Ellen," in 1856, if he indeed be the same. The landscapes are many, and not a few really excellent; it would seem to be possible to distinguish two influences here: that of Professor Brown, with whose paintings "The Redlands Farm," by Graham Robertson, may be compared, and that of the Frenchmen in general. We are told by Millet's biographer that a bit of smoked glass was considered an indispensable part of his outfit, and need not proceed to say what absolute ignorance of Nature's subtlest effects may be concealed by this simple contrivance. Mr. Wilson Steer has a style of his own which could hardly be copied even if it were desirable. His attempts to realise effects of light begotten by heat are generally fussy and unsatisfactory, the convention and consequent sacrifice being more in evidence than anything

else. Mr. Bertram Priestman is too great a painter to send his most important works to this exhibition. Already the greatest in his domain amongst the subservient animals, we have here, besides landscapes, a representation in monochrome of a ship wrecked at sea, which one looks at with wonder, whilst recognising that this, though only a study, is yet a great master's work. The subject pieces are few, but one to be remembered, and possibly never forgotten, is Mons. Belleroche's "Disappointment"—a girl, who has been consulting the cards as to her fortune, seated facing the spectator on a bedstead. It would be impossible to convey an idea in words of what art there is in the work.

E. R.

### ENGLISH COUNTRY COTTAGES.

The depopulation of rural districts is a subject of vital importance to the whole community, and that it may be in some measure due to the scarcity and bad condition of cottages in many districts is hardly open to question. At a recent meeting of the Cheshire Dairy Farmers' Association, a well-known landowner remarked that the remedy for the depopulation was "more cottages and better cottages."

We have just received a little book bearing the above title, the object of which, in the author's own words, is to call attention to the state of the cottages of the agricultural labouring population in England; and to give an idea of the sort of accommodation experience shows is desirable for labourers' dwellings. The book is full of statistics and useful information, and its 200 odd pages are divided into ten chapters, which deal with the present condition of our cottages in "close" and "open" villages, their rent, cost, and requirements. Drainage and water supply are fully treated, and a chapter is devoted to the Model Bye-laws.

Interspersed throughout the book are plans and elevations of typical cottages, but unfortunately they are not well "rendered," as our American friends tersely put it. The reproductions appear to have been made from bad tracings, and the drawings lose interest and intelligibility owing to the sectional parts being left in outline. Almost all the cottages that are illustrated have been built for owners of large estates, and it is curious to note how very few really fulfil the requirements of a good dwelling. In most the staircase leads out from a room, in some the fireplaces are arranged on outside walls, and few have any architectural merit. Probably the most interesting are a pair of cottages on Sir Walter Gilbey's estates, which is an attempt to construct dwellings that shall be commercially profitable. The plan is simple, consisting of a porch leading to the parlour, with a living-room behind in which is placed the staircase close to the back door, with a small pantry underneath. Upstairs are two good bedrooms and a smaller one for a child. The washhouse, coals and earth closet from a detached outbuilding. These cottages have brick footings to a height of 9ins. form the ground floor, above this the walls are built of sun-dried clay lumps, battened, externally covered with weather boarding and plastered inside. The cost is stated as amounting to only £265 the pair, but the expense of maintenance for such a wooden-covered building should be taken into consideration.

Two designs are shown of cottages on Lord Wantage's estate, both of which have good plans. The staircase in each example is approached from a lobby, which also gives access to the kitchen, with scullery and pantry behind. Three fair-sized bedrooms are arranged above, and the outbuildings consist of a coal place, w.c., and ashpit to each cottage, with one washhouse common to both. The walls are 11in. thick, built of brick, with a cavity in the centre. Cost is given at from £390 to £460 per pair.

A single story cottage is illustrated on page 225, which is said to have cost just £100; it is a very bad type of plan and should have been condemned by the

author. The two bedrooms and pantry all open out of the kitchen, and the pantry is actually larger than one of the bedrooms. Two single story galvanised iron cottages are also illustrated, but we could find no description of them. The two bedrooms in each case are entered from the kitchens, and the pantries are in the worst possible situation, being immediately behind the kitchen fire-places!

The author considers that, with regard to soil drainage, the less there is of it in rural districts the better. Earth closets are much more suitable and far less costly than water closets, but they should be periodically inspected and properly taken care of. A chapter is devoted to the Model Bye-laws, which the author very properly considers far too stringent for country districts, and a hindrance to many who wish to erect cottages for the agricultural classes.

The conclusions that Mr. Green arrives at are that the state of country cottages is, excepting in the case of owners of large estates, mostly very inferior, and in numerous cases so deplorable as to make desirable the interference of the local authorities, or in their default the Government; that the cottages are, as a rule, much inferior in "open" villages to those on agricultural properties; that the "Model Bye-laws" issued by the Local Government Board are in most cases unnecessary, and that it is practically impossible to make good cottage property pay even 2 per cent. on the capital outlay without considerably increasing the present rents.

On the whole, we can recommend all those interested in agricultural property to peruse this little book.

J. E. N.

"English Country Cottages; their Condition, Cost, and Requirements." Price 5s. By J. L. Green, F.S.S. The Rural World Publishing Co., 110, Strand, W.C.

### AN ELECTRICAL AND CHEMICAL DICTIONARY.

This dictionary of electrical engineering and chemistry is published in three parts—German-English-Spanish, English-Spanish-German, and Spanish-German-English. The dictionary comprises such words and word-combinations as are met with in books on engineering and scientific subjects; and special attention has been paid to practical terms relating to the construction of steam engines, machine tools, lifting and hoisting machinery, foundry, metallurgy (concentration of arcs), smelting, tools, &c. Non-technical terms that may be found in any ordinary dictionary are wisely omitted, so that more space may be devoted to scientific and technical words. Idioms which have more than one signification have their differences clearly pointed out. This first attempt to publish a reliable technical dictionary for these three languages fills a distinct gap.

"Practical Dictionary of Electrical Engineering and Chemistry in German, English, and Spanish: Treating especially of Modern Machine Industry, the Foundry, and Metallurgy." By Paul Heyne, assisted by Dr. E. Sánchez-Rosal. 3 Vols. London: H. Grevel and Co.

A Wesleyan Chapel is to be erected in Fulton Road, Walkley, at an estimated cost of £6,500, and will accommodate about 700 persons.

The Restoration of St. Mary's Church, Leicester, has been a subject of discussion in Leicester, and it has been decided to carry out the necessary renovations.

Death of a Chester Architect.—Mr. D. P. Fordham, a member of the firm of architects, Messrs. Douglas and Fordham, of Abbey Square, Chester, died last week. The deceased had been ill since 1897, when he was ordered by his medical advisers to a more southerly climate.

Memorial Screen at West Retford.—The family of the late rector of the parish church of West Retford (the Rev. Watkin Homfray) have just erected a carved oak chancel screen to his memory. The screen has been designed by Mr. Hodgson Fowler, architect, and the work carried out by Mr. Bown, of Stamford.



## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,  
April 19th 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### A Reasonable Appeal.

THE authors of the memorial to the Dean and Chapter of St. Paul's on the subject of the decorations have done a wise thing in thus bringing the matter directly to the attention of those responsible for the work. While the efforts of the objectors were confined to writing more or less vituperative letters to the newspapers, the Dean and Chapter had, perhaps, an excuse for the silence they have preserved throughout this controversy. Now they have no excuse. They can hardly ignore a direct appeal signed, amongst others, by the President of the Royal Academy. The appeal is made the more forcible by its dignified and moderate tone; the suggestion it makes is the eminently reasonable one that the opinions of experts appointed by the Royal Academy and the Royal Institute of British Architects should be taken on the specific question whether the red paint stencilling and the black lettering are a form of decoration likely to impair the chief architectural features of the structure as originally conceived and carried out by Sir Christopher Wren.

### An Irrelevant Reply.

THE Dean of St. Paul's has met this letter with two arguments, of which one is irrelevant, and the other is more in the nature of a repartee. Speaking at a dinner of the Salters' Company last Wednesday, Dean Gregory enlarged upon the immense improvements that have been made within the last thirty years in the services, the music, and the general management of the Cathedral. "Therefore," said the Dean, with indifferent logic, "if the Dean and Chapter have 'spoiled' the Cathedral, they have done so by converting a disgrace to the City and the country into a credit to both City and country, and into something of which the Church of England might well be proud." We are not aware that anyone has found fault with the present custodians of the Cathedral or their immediate predecessors for the successful efforts they have made to secure larger congregations, a more reverent demeanour on the part of visitors, a higher standard of pulpit eloquence, more beautiful music and more attention to cleanliness and order. Is it inconceivable that one may heartily approve of all these things, and yet object to red stencilling and black lettering?

### The Dean and "Punch."

THE Dean's reply to Mr. F. Cavenish-Bentinck, who forwarded the memorial, is a fairly smart example of the "retort courteous," but it avoids any attempt to meet the objections raised. "I can promise you and the memorialists," he writes, "that their memorial shall have the fullest consideration. It is satisfactory to find that such distinguished and wealthy men take an interest in St. Paul's—an interest, however, which none of them evinced when we have been collecting funds for raising St. Paul's from the discreditable condition in which it was allowed to remain for a long period of

years, and which was a disgrace to the metropolis." If the "distinguished and wealthy" ones felt crushed by this rejoinder, they no doubt revived a little on finding that "Mr. Punch" was on their side. That eminent commentator on men and affairs had a cartoon last week representing the shade of Sir Christopher Wren surveying in horror the work of the decorators of the dome, and remarking to Sir Wm. R-chm-nd, "Oh, Willie, Willie, how well could we have missed you."

### Turner at Guildhall.

THE loan exhibition of pictures which the Lord Mayor opened last week at the Guildhall is at least as notable as any of its predecessors. Some fine examples are to be seen of the works of Gainsborough, Reynolds, Constable, Wilkie, Morland, Etty, and other masters of the English school. But what gives special distinction to this exhibition is the magnificent collection of the works of J. M. W. Turner. Many of these pictures have never before been exhibited to the public, and the collection, as a whole, is beyond doubt the most comprehensive that has ever been got together. The skill which has been shown in the arrangement of the pictures adds not a little to their educational value. The arrangement is chronological, so that the student is enabled to trace the development of the painter's genius, as well as to compare his work with that of his contemporaries.

### An Art Gallery Wanted.

IN the course of his speech at the opening ceremony the Lord Mayor referred to the inadequate size of the Guildhall gallery, and said it was the hope of every member of the Corporation that before long the size of the gallery would be greatly enlarged. Though they could not hope to approach in magnitude to that grand building in Paris, the Louvre, yet it was not too much to look forward to their possessing one sufficiently capacious to be worthy of the City of London and of the ancient Guildhall. It is to be hoped that the Corporation will soon find a way to realise their desires in this matter, for it is certainly something of a reproach to the City of London that its art gallery should be inferior to that of many provincial cities. In any plans that are formulated it will be remembered, we hope, that what is required is not merely accommodation for the works of art at present in possession of the City. Once the gallery is built there is not likely to be any lack of lovers of Art who will give or bequeath some of their treasures to adorn its walls.

### An Architectural Outing.

THE architectural classes of the Glasgow and West of Scotland Technical College had their annual Easter visit to Beverley and Hull. The party left Queen Street on Saturday, the 1st inst., and returned on the Wednesday afternoon following. The principal object of the visit was to measure and sketch at Beverley Minster and St. Mary's Church, Beverley. Beverley Minster is the least known and the best of the three great minsters of Yorkshire, the others being at Ripon and York. The Early English work is perhaps the finest in the kingdom, and the richness of the decorated work is superb. In the choir is the famous Percy shrine, which is one of the most beautiful and elaborate mediæval monuments in the world. St. Mary's Church, at the north end of the town, is one of the largest parish churches in Yorkshire. It belongs to the Perpendicular period, and contains some interesting old leaded glass. Beverley is almost unique among English towns in having, for its size, two such large mediæval churches. A visit was paid to the interesting little church at Cottingham and the Holy Trinity Church at Hull. The amount of work done was a sufficient guarantee of the success of this holiday trip.

### Kilkenny Cathedral.

"EVERYTHING comes to those who wait" is an old saying, and seems to be specially applicable to the Roman Catholics and their recently completed Kilkenny Cathedral. The

building of this structure was started some fifty years ago, but has only just been finished. It was commenced under the supervision of Mr. Butler, architect, and completed by the late Mr. Hague. It has no steeple, but a particular feature is its wealth of mural decorations. It was originally intended to cost £40,000, but the baptistry and other adjuncts, including rich internal decorations, entailed an additional outlay of £20,000.

### Aberdeen and its Jerry-Builders.

THE jerry-builder, as we all know, does not confine his attentions to any one locality. There are few towns—or villages even—where his handiwork may not be seen. But there are certain places in particular where he seems to flourish like a green bay tree. Such a place, until the other day, was Aberdeen. But the Aberdonians have been aroused from their lethargy; they have held a public meeting, and seem determined that their city shall no longer be the happy hunting-ground (if the metaphor may be allowed) of the jerry-builder. Even the builders themselves have taken action against the baser members of their own trade. At the last monthly meeting of the Building Trades Federation we note that the following resolution was unanimously adopted:—"The Federation, recognising the fact that many buildings erected in the city are badly designed and of faulty construction, calls upon the Town Council, in the interests of public safety and comfort, and the amenities of the city, to take such action as may be deemed necessary to thoroughly supervise the erection of all buildings, and also to prevent new houses being occupied before they have been officially certified as being fit for habitation."

### St. George's Church, Liverpool.

THE discussion on the question whether the spire of St. George's Church, Liverpool, should be removed or not has induced "an Architect" to address the following letter to the "Liverpool Mercury." He says: "'To be, or not to be, that is the question.' Are we to have a really beautiful space on the site of the above by the removal of the entire church, or have it simply spoiled by allowing the tower and spire to occupy one corner, and practically ruin all? If all be removed, what possibilities present themselves of a handsome central clock tower of noble proportions, with waiting and refreshment rooms at its base, sunny terraces round, with pedestals for statuary, circular steps and sparkling cascades on alternate faces, with grass and flowers—a fitting use for the site of our old castle. If the old tower and spire be left as suggested, what then? Being up in a corner, they would look at their best a mere makeshift, an utterly unsuitable feature which, if it survived the disappointment of the citizens long enough, would appear to our children like a second-hand monument bought cheap, and not thought good enough to put in the centre of the ground. Let the Council stand firm, and not lose the opportunity of securing for the city such 'a thing of beauty' as it is possible to make St. George's Square, by having a clear space to deal with."

### Shakespeare's Church.

THE vicar of Stratford-on-Avon has issued a statement of the work of improvement that has been carried out in his church. On the anniversary day of Shakespeare's birth, a festival is kept in his native town, and it seems that at the time of the last festival the church in question was closed for repairs. It is now open in its renovated condition. The work done has included the entire remodelling of the organ, at a cost of £840; the introduction of new heating apparatus, and the relaying of the floor after filling in the old vaults, at a cost of £1,600; and the substitution for the old pews of carved oak benches in the aisles and chairs in the nave, at a cost of £576. Including architect's charges and sundry smaller improvements, the total outlay has been £3,450, and the subscriptions received have only amounted to



£1,831. This leaves the Restoration Committee to face a debt of more than £1,600. The vicar thinks that people may blame them for rashness in incurring this debt, but, in his opinion, few would have doubted that the British public would subscribe at least £4,000 for the renovation of Shakespeare's Church. The verdict of all who have seen the work done is favourable, and he hopes that before the festival day arrives the committee may be relieved of much of their anxiety. Any subscriptions he will be pleased to receive, or they may be paid to the Stratford-on-Avon Church Restoration Fund at the Metropolitan or Lloyd's Bank.

### Rural Fire Brigades.

WE heartily sympathise with the objects aimed at by the promoters of the Fire Brigade Bill, the second reading of which was moved in the House of Commons last Wednesday by Mr. Pym. There is no doubt that an enormous amount of property is lost in the country by fire, which might be saved if efficient means of fire extinction existed in every town and village. As Mr. Birrell, who seconded the motion, remarked, every year we witness the destruction of old buildings and mellow pictures, which no architect or artist now living could replace. The Bill aimed at making fire brigades throughout the country districts equal in efficiency to the Metropolitan Fire Brigade. Whether the methods proposed by the Bill for attaining that desirable end are the best possible is, perhaps, open to question. Mr. Chaplin thinks they are not; he objected to the extra work it was proposed to throw on the Local Government Board, and suggested that the Bill should be withdrawn and a select committee of enquiry appointed. Acting on this suggestion the promoters withdrew their Bill. We hope this does not mean that the matter has been shelved until some national calamity arouses our legislators to the importance of measures for protecting life and property from fire.

### Sites.

NEW Market Buildings are about to be erected at Leicester, and a correspondent has written to a local paper pointing out the unsuitability of the site. He thinks that an expensive and substantial erection, such as this will be, should have the best site possible, and be in a thoroughfare where it would be seen and admired, and pointed out to strangers as one of the sights of the town. Leicester is not the only town that is indifferent to the important matter of site. It seems to be a peculiarly English custom to build our great public buildings in back streets; witness our London Guildhall and Italian Opera House; and now it is intended—we believe—to erect the new Central Criminal Court upon its present site, than which it would be hardly possible to find a worse. The difficulty in London of finding appropriate sites for new buildings is, of course, very great; but though it may not be possible to find such a magnificent one as that of the Palais de Justice at Brussels, some more favourable position than the Old Bailey might surely be found, though possibly not within the limits of the City. The difficulty, however, is not so great in the case of provincial towns, and it should be the first care of local authorities, when new public buildings are put in hand, that they should be erected on the best available site.

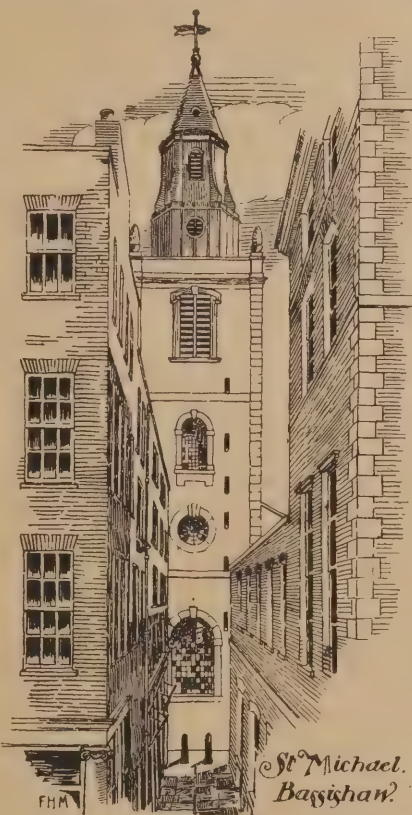
### Fireproof Construction.

THE "Times" published an article, suggested by the recent disastrous fires in America, in which the necessity was pointed out for greater precautions being taken to render domestic buildings fire-resisting. This has led to some correspondence in which various reasons are suggested for the fact that in England so little attention is paid to this important matter. Mr. Maurice B. Adams, F.R.I.B.A., says the fault does not lie with the architect, but with the public who insist on having cheap buildings; although there are many admirable methods and materials available for fireproof construction, the architect cannot employ them because they involve a little extra expense. Another correspondent

would put the blame on the insurance companies, which make no distinction, he says, between buildings constructed on the most approved fire-resisting principles and the death-traps almost universally existing in our large cities. In this connection it is satisfactory to note from a reply given to a question in the House of Commons that it is proposed to make the new Government buildings in Whitehall, Parliament Street, South Kensington, and the Patent Office as far as possible fireproof; the architects, in conjunction with Sir John Taylor, will be instructed to consider what systems are the best to adopt.

### St. Michael Bassishaw.

THE Church of St. Michael Bassishaw occupies an isolated site between Basinghall Street and Aldermanbury, being approached from the latter thoroughfare through Three Nun Court. It is from the west end of this alley that our view is taken. The church is shortly to be pulled down; but, however one may regret its demolition, the consequences are not likely to be disastrous, for the church has been closed some years, and there is another less than 70 yards distant. The authorities intend to



DRAWN BY F. H. MANSFORD.

devote part of the money realised by the sale of the site to building a rectory for the now united parishes of St. Lawrence, Jewry; St. Mary Magdalen, Milk Street; and St. Michael Bassishaw. The cost recently incurred by the parishoners for the removal of the bodies from the vaults will be re-imbursed to them, and a new church will probably be erected in some fortunate suburb. The tower of St. Michael's is of brick (probably red) with stone dressings, but the brickwork has been for many years coated in cement. The lantern is of timber, covered with lead, and is much visited by pigeons from the neighbouring Guildhall. One or two curious points are noticeable about this comparatively simple tower. Its angles are not all right angles, and its sides are unequal, but the lantern is a true octagon. Possibly Wren built on the foundations of the fifteen century structure which was destroyed by the great fire. The parapet on the south side is treated differently from that on the other sides without any apparent reason; and the carved stone pineapples at the angles are of exaggerated height in order to appear in proper proportion as viewed from below. The church itself is of

little interest except for the carved pulpit and the monument to Dr. Thomas Wharton, a physician who braved the plague of 1665.

WE have already described the work done at the Testing Station of the British Fire Prevention Committee, but many of our readers, no doubt, will be glad to procure the fuller illustrated account of the station and its work, which is given in an attractively got-up pamphlet recently published (The British Fire Prevention Committee, 1, Waterloo Place, Pall Mall). The Committee undertake tests of any fireproofing material or construction that may be submitted to them, their charges—which are set forth in this pamphlet—being based on the actual cost of the tests. But in addition to these special tests they are engaged in investigating, as their funds permit, all kinds of ordinary building materials and forms of construction, and they hope in due course to be able to record the exact fire resistance of all the more common methods of construction used in the British Isles. Such a record, it almost goes without saying, will be of the highest practical value to architects and builders, and will indirectly benefit a much wider circle. For it is a lamentable thing that much valuable property, and even lives, should be lost every year for want of a little expenditure and a little forethought.

### German M.P.'s and Architects.

THE following interesting note appeared in a recent issue of the "Globe": "This country is plainly not the only one in which irresponsible criticism makes itself ridiculous by interference with the efforts of artistic experts, or by suggesting tasteless additions to buildings that have been the admiration of centuries. A quaint illustration of the same kind of captiousness is being provided now in Berlin, where a lively quarrel is in progress between the Reichstag and the architect and artists who are responsible for the decoration of the new Parliament building. So much ill-feeling has been aroused by the attack which the Building Committee has made upon the work in progress that the architect, Herr Paul Wallot, has resigned, and Herr Franz Stuck, an eminent painter, has refused to complete a painting which was to have been placed in the Chamber. A strongly-worded protest against the attitude taken up by the Reichstag has been signed by all the leading German artists."

### The Building Trades Exhibition.

WE are glad to learn that the International Building Trades Exhibition, to be held at the Royal Agricultural Hall, from April 26th to May 6th, promises to be the most comprehensive of its kind ever held in this country. The Exhibition will be opened at 12 noon on Wednesday next by Professor Aitchison, R.A. (President of the Royal Institute of British Architects), supported by the Duke of Westminster, K.G., Lord Welby, G.C.B. (Chairman London County Council), and many of the most eminent architects and engineers. Arrangements have been made for visits on different days from the following institutions: Institute of Surveyors, Architectural Association, Society of Architects, Institute of Builders, Municipal and County Engineers, Sanitary Inspectors. The ground floor space, we understand, is now entirely let, and applications can be received for gallery space only. The Electrical Section will be held in the Minor Hall, adjoining the main hall, and applications for the remaining space must be made at once. King Edward's Hall, leading from the arcade, and connecting with the main hall, will be utilised for the Smoke Abatement Section. The committee of the Coal Smoke Abatement Society (Sir W. Richmond, R.A., K.C.B., Chairman) offer gold, silver and bronze medals, together with Certificates of Merit for the best domestic appliances for abating the smoke nuisance. The design for the medal will be drawn by Sir W. Richmond, R.A. A full description of the exhibition, with illustrations of some of the more notable exhibits will be given in the next two issues of the BUILDERS' JOURNAL.



## HOUSING OF THE LABOURING CLASSES.\*

By P. FYFE.

IN order to give a clear notion of the housing problem as it is put before us in Glasgow, it will be necessary to consider at the outset the legal aspects, because over and beyond the dictates of sympathy and humanity stand the imperative demands of the law. It is now forty-seven years since the first of the Shaftesbury Acts was promulgated dealing with the proper lodging of the labouring classes. These were in turn succeeded in 1868 by the Torrens Acts for the provision of suitable houses for artisans, and in 1875 what is known as the Cross's Acts were passed as yielding legislative improvements in the same direction. All these led up to the Housing of the Working Classes Act of 1885, which in turn was almost entirely supplanted by the Act of 1890 bearing the same designation. This important act is divided into four divisions, and has seven schedules attached to it. The first and second divisions only need be considered, as they deal with the powers to be exercised by local authorities:—(1) over unhealthy areas; (2) unhealthy dwelling-houses.

### Insanitary Areas.

In Glasgow, Part I., dealing with unhealthy areas, has been a dead letter because, firstly, the "official representation" to the Local Authority must show that "the sanitary defects in such areas cannot be effectually remedied otherwise than by an improvement scheme for the re-arrangement and re-construction of the streets and houses within such areas, or of some of such streets or houses;" secondly, because the late police clerk, Mr. Lang, reported, *inter alia*, in 1895. "The legal process provided by this part of the act is tedious, circumlocutory, uncertain, and expensive;" and, thirdly, because the Corporation possess an Improvement Trust Committee, whose special function is to arrange and carry through large city improvement schemes when such become necessary, and this committee invariably proceeds by scheduling such areas and securing the necessary statutory powers for their reconstruction by means of a Local Act. Even the County Council of London, which has done much work under the Act, has only carried out three schemes under Part I., namely (a) that at Boundary Street, Bethnal Green, by which fifteen acres of narrow streets, courts and alleys were acquired and destroyed at a net cost to the ratepayers of £280,000; (b) The Clare Market Scheme of 1898, which cost £216,500; and (c) The Churchway, St. Pancras, Scheme, costing £39,150. The three schemes will displace 9843 persons from their houses. Glasgow has done nothing. We need not, therefore, occupy time discussing legal powers which in this city have had no practical result, either in unhousing or rehousing those of the labouring classes who dwell in insanitary areas.

### Insanitary Houses.

The case is different when we come to Part II. Under this part of the Act, which affects insanitary dwelling-houses and smaller areas than are pointed out under Part I., good useful work may be, and has been done. It should be noted that here the expression "dwelling-house" means "any inhabited building, and includes any yard, garden, outhouses, and appurtenances belonging thereto, or usually enjoyed therewith, and includes the site of the dwelling-house as so defined." The initiation of the procedure necessary under this part of the Act compares very favourably with that under Part I. Under the latter no one has the duty of making representations put upon him. The whole of the gigantic and costly machinery may lie rusting while the people are suffering, and blame can attach to no individual. The all important duty of setting its powers in motion does not lie with the Medical Officer

of Health until "two or more justices of the peace within the district or twelve ratepayers complain to him of the unhealthiness of any area." The lighter and less complex machinery of Part II., is, however, placed under the immediate care of the Medical Officer of Health, as the Act here distinctly states—"it shall be the duty of the Medical Officer of Health of every district to represent to the Local Authority of that district any dwelling-house which appears to him to be in a state so dangerous or injurious to health as to be unfit for human habitation." This is Section 30.

### Rights of Citizens.

The following Section (31) applies the spur to laggard duty, as under it any four householders dwelling near the street in which the insanitary dwelling-house is situated may, by writing to the medical officer, compel him to report to the local authority, and if nothing is done under the Act, these same householders, after waiting for three months, may legally petition the Local Government Board for an inquiry. It will thus be seen that every responsible citizen whose interests or amenities may be prejudiced by the proximity of any unwholesome and insanitary building which is inhabited, has distinct rights given to him by the Legislature. A little consideration will show the reasonableness of this provision.

### The Deterioration of House Property.

It seems to be one of the great laws of city growth that, in the closely packed area near the centre, decay, once started in a property, proceeds with alarming rapidity towards rottenness. Roofs, walls, windows, doors, and floors having served their day and generation, like the worn-out organs of aged humanity, refuse any longer to do their work—refuse to be patched up—and await dissolution. But, unlike the old and done man, there is no respite for the old property. On the contrary, the older it becomes the more work it gets to do. Whereas fifty or sixty years ago it sheltered the family of the merchant prince or well-to-do tradesmen, it has, by deterioration and unwise subdivision, to do the same duty for four or five families of the artisan. Time passes, and as the patchwork and repair of this reconstruction becomes worn and dilapidated, it falls in commercial value to the level which only the labourer and the casual worker can pay. A short time now brings it to its last and most degrading duty. Rotten in the ceilings and walls, open in the flooring, with rattling windows and tottering doors, it stands at last, neglected by owner and tenant alike, the uninhabitable dwelling-house—the haunt of poor unfortunates and the degraded—the home of the flotsam and jetsam of the city. Those who dwell or have business premises near it are now in danger. Ill health and evil manners are born and bred in it now. Both are contagious and tend to corrupt the surroundings, and consequently the Government has enacted that any four householders may protect themselves by written complaint to the medical officer of health, and so bring about the destruction of a property which, like the worn-out old horse, it is painful to see doing further labour.

### Obstructive Buildings.

There is another class of property regarding which the citizen has powers of initiative granted him under this part of the Act, viz., the obstructive building. Here, again, the four householders may make a similar representation, but this time not to the Medical Officer of Health, but to the local authority itself, which for this purpose means its Town or Police Clerk. Now, what is an obstructive building? The Act says any kind of building whatsoever which "stops ventilation, or otherwise makes or conduces to make such other buildings to be in a condition unfit for human habitation or injurious to health;" or, in the second place, if "it prevents proper measures from being carried into effect for remedying any nuisance injurious to health or other evils complained of in respect of such other buildings." It appears fairly clear that this most important part of the Act (Section 38) strikes at that

class of structures known in every city as back buildings, whether these buildings are used as dwelling-houses or stores or manufactories. It is of no avail to argue that former law, or want of law, permitted of their erection. Standing as they do on the natural court or back yard of the dwelling-houses in front, preventing air and light, and proper ground space for ashpits and conveniences, they stand condemned; but the loose law of former years and vested rights must here be recognised, and consequently, unless the obstructive building is itself unfit for human occupation, the owner of it may claim compensation under arbitration, which may fall to be paid by adjoining proprietors whose properties have been improved and increased in value by its demolition.

### Why the Act is not Applied.

I need hardly say there are many such obstructive buildings still in Glasgow. In only two cases has this part of the Act been applied here, namely, in Muirhead Street and St. Ninian Street, on the south side, and in neither case did the question of compensation arise, as both these back buildings were, in themselves, uninhabitable, and, moreover, belonged to the owners who held also the front properties. Otherwise this useful and powerful section has been untried. Perhaps the main cause is the difficulty as to the acquiring of the site upon which the obstructive building is built. If the owner of the building does not wish to retain the site, which it is unlikely he would wish to do unless he could erect another payable building on it, the burden of purchasing it falls *exclusively* on the local authority, who could only use it as an open space, and that without any power to claim compensation, therefore, as betterment against adjoining proprietors whose property would thereby be improved. The weakness in this part of the Act therefore forces Local Authorities into larger schemes of improvement, and impels them to endeavour to acquire both the back obstructive property and that one in front of it, rather than pay for a site, at the expense of the ratepayers generally, which would benefit but a small section of them, and most of all, the contiguous owners.

### Other Powers of Local Authorities.

True we have the following section, 39, which gives all Local Authorities power to acquire the whole of such areas, and appropriate them for the erection of dwellings for the working classes, but we need not occupy time discussing this very important section here, as Glasgow invariably prefers to proceed with a local bill for such purposes, rather than adopt the circumlocutory methods prescribed by the general Act. The London County Council and the Vestries have, however, proceeded in fifteen cases under Part II. of this Act, displacing 5,082 persons, and intend to provide new dwellings for 3,766 of those displaced at a total estimated cost of £222,323 18s. 5d.

### Rehousing the Unhoused.

We now come to a part of such schemes, the importance of which, in a large city, dare not be overlooked, viz.:—The rehousing of the labouring classes which have been, or should be, unhoused by schemes of demolition and improvement. This phase of the problem has become so acute that it formed, at the recent Sanitary Conferences in Dublin and Birmingham, the principal topic of discussion. Necessarily at such meetings, the discussions proceed in general and broad lines, but the extreme urgency of the matter in all large cities impels me to attempt to examine the whole subject in detail, and endeavour to lay down from experience, and from facts and figures kindly given me by several gentlemen of experience, a basis for guidance and future action.

### Practice of the L.C.C.

Part I. of the Act we have been considering makes it essential that houses be erected on or near the ground from which the people have been displaced. Part II., dealing with small areas, does not make provision for re-housing compulsory, but the London County Council

\* A paper read before the Glasgow Architectural Society.



Committee appointed to deal with this question passed at the end of last November two most important resolutions, which have since been adopted by the whole Council, viz.: (1) "That housing accommodation should be provided for a number of persons equal to that of the working classes displaced by any scheme under the Housing of the Working Classes Act, 1890, or under the provisions of any improvement act; but not necessarily in the immediate neighbourhood of the displacement, due consideration being given to the needs of those living on any particular area"; and (2) under Part III. of the Act, which gives them powers to buy land and build thereon for the purpose of increasing the supply of house accommodation, they recommend: "That apart from the rehousing required in connection with clearance or improvement schemes, the Council do approve of action being taken under Part III. of the Housing of the Working Classes Act (1890), with a view to the purchase of land and the erection of dwellings thereon for the purpose of supplying housing accommodation." This Committee also emphasise the necessity of building for the poorest classes, of building much cheaper structures than they hitherto have done, and point out that under Part III. their plans do not require to be submitted to any Government department, which invariably causes an unnecessarily high standard of work to be adopted.

#### Excessive Rents.

On examining the rents of the one and two-apartment houses they have already built, one is at once struck with the impossibility of the real labouring classes ever being able to pay them, and when I say the "real labouring classes," I mean those whose weekly earnings range from 17s. to 25s. Only in one block am I able to find any houses fitted for the means of such persons, viz., that in Dufferin Street, where a one-apartment house ranges from 2s. to 2s. 9d. per week, and a two-apartment house from 4s. to 4s. 6d. a week, and of these there are only twenty-nine of the former and twenty-three of the latter. In all their other blocks the rents range from 3s. 6d. to 5s. a week for each single apartment house, and from 4s. 6d. to 8s. per week for two-apartment houses. These are impossible rents for the great mass of our labourers and poorer classes generally, and I am happy to say we can show a better record than this in Glasgow. It might be said in passing that through the courtesy of the secretaries and managers of various dwelling companies in London, I have been favoured with much information as to the rents these companies charge for their houses, but only in the case of buildings erected under the Peabody Donation Fund can I find single-roomed houses rented as low as 2s. to 2s. 3d. weekly, and two-roomed houses at 3s. 3d. to 3s. 6d. weekly, the latter, though low, being, in my judgment, more than a labouring man or a poor person in Glasgow can conveniently pay for house accommodation. All these other companies are, of course, based upon the plan of returning a full compensation to the capitalist, while providing houses yielding increased comfort and convenience for the labouring classes, and hence it may, from experience, be almost accepted as an axiom that where "full profits" are demanded by the capitalist on the money he lends for the proper housing of the labourer, the labourer must pay a rent out of due proportion to his average income. By the words "full profit" I mean any rate of interest above 4 per cent.

(To be continued.)

**Collapse of a Building.**—Two men were killed at Wellington Mill, Preston, owing to the collapse of the cotton room. At the inquest a verdict of accidental death was returned, the coroner remarking that there seemed to be a consensus of opinion that the collapse was not due to the removal of the old boiler. It was rather remarkable that the men received the first warning of the disaster from the very place where was situated the rotten beam.

## Professional Practice.

**Bradford.**—The restoration of Bradford Parish Church is now practically complete, and it was opened last Wednesday for public worship. The old galleries in the north and south aisles have been removed, and transepts have been erected so as to afford additional floor space. The building of commodious vestries to the north-east of the church will render it possible to restore the Bolling Chapel, which has been used since 1864 as a clergy vestry. The corresponding chapel on the north side of the chancel, known as the Leventhorpe Chapel, will continue to be used as an organ chamber. The chancel, which was previously laid with tiles, has been paved with marble, which has been laid on concrete. It is strange to note that when the tiles were removed it was found that they were based upon a large number of gravestones. The roof of the chancel has been re-slatted. In the nave, panels of light-coloured oak, instead of lath and plaster, have been inserted, and serve to emphasise the shape of the beams, and decoration of the old black oak roof which the church possesses. The aisle roofs on both sides of the church are now entirely new. The old ones were originally laid, in the fifteenth century, on a somewhat flat pitch, and were slated, but apparently they did not sufficiently well turn rain, and at some subsequent date the same timbers were used to rebuild the roof at a steeper pitch, the additional height being obtained by cutting off nearly a foot of the clear-storey windows. The new roofs follow the original low pitch, and are covered with lead. Several new memorial windows have been given to the church, and a very fine one has been erected by Messrs. Shrigley and Hunt, of Doncaster. It is intended to put glass mosaics into the panels, at present blank, of the reredos, and the work will be carried out by Messrs. Powell and Son, of Whitefriars, London. The pulpit has been enlarged by the insertion of niches at the corners, which will contain figures of Evangelists. The sum of £100 has been expended in the erection of a handsome screen at the west door, which will cut off a portion of the tower to serve as an entrance lobby. The church is to be lighted by means of electricity. The whole of the work has been carried out from the designs of Messrs. T. H. and F. Healey, architects, of Bradford.

**Bristol.**—A new building which has been erected by the Bristol School Board on the Broad Weir and partially in Castle Green for a Pupil Teachers' Centre in Bristol, was opened last Thursday. The building has been erected at a cost of £4,400, from the designs of the architects, Messrs. La Trobe and Westen. It is in the Renaissance style, and is carried out in terra cotta and red bricks. The chief elevation is on the Broad Weir, but entrances have been provided on both sides, and these give access to a wide fire-proof and well-lighted staircase, arranged with dados of glazed bricks. An arcading is carried up with pilasters with Ionic caps on the Broad Weir elevation, there being half-a-dozen lights on the lower and upper floors. The science and art rooms are situated at the top of the building, with a clear uninterrupted north light. Two octagonal turrets with pinnacles that reach an altitude of 70ft. from the level of the Broad Weir flank a centre gable above the arcading. On the ground floor beneath the arcading the space is occupied by the Science demonstrator's room, 44ft. long, and the front is faced with blue pennant ashlar. There is a large assembly hall, to seat 300 persons, on the Castle Green level, 56ft. by 30ft., and 17ft. high, and it is intended to use this hall for examinations and other purposes. There are six large class rooms, each about 25ft. square, in addition to masters' and mistresses' rooms, cloak rooms and lavatories for students, besides separate rooms for science and for art students, and a residence for caretaker, also a students' dining room. All the floors are of maple, the landings next the areas are inclosed by orna-

mental iron grilles, and the area for light and the class rooms and offices are faced with white bricks and tiles. The heating and ventilating have been carried out by Messrs. Skinner, Board, and Co., Rupert Street, Bristol, on the low-pressure system, the rooms being fitted with ventilating radiators, by which means the fresh air is warmed before entering the building. The general contractors have been Messrs. Hughes and Weeks, of St. Philip's.

**Cardiff.**—The memorial stones of the Presbyterian Church in Roath Park, Cardiff, were laid last Wednesday. The church stands on a site at the junction of Penylan-road and Marlborough-road, and facing the entrance to Roath Park. The church consists of nave, with transepts and chancel, with porches and a commodious vestibule. The internal length is 125ft., the width of nave 47ft., and in transepts 62ft. There will be an open timber roof of ornamental design in pitch pine, the height being 42ft. The chief external feature will be the tower and spire 150ft. high. The central doorway is a copy of Tintern Abbey doorway, while the five light-traceried window above recalls the south transept window of Melrose Abbey. The church is designed in the decorated style of Gothic, and is being built of Newbridge polled stone, with bathstone dressings. It will accommodate between 800 and 900 persons. The choir and organ will be raised above the level of the nave. The organ will be built by Messrs. Harrison and Harrison, Durham, at a cost of £1,083. At the rear of the church there is provided a suite of rooms comprising vestry, session room, manager's room, and choir room. The architects are Messrs. Habershon, Fawcner, and Groves, of Newport and Cardiff, and the contractor is Mr. James Allan, of Cardiff. The cost of the church, including organ and furnishing, will be between £9,000 and £10,000.

**Edinburgh.**—Some time ago, the Midlothian County Council resolved to reconstruct the Edinburgh County Buildings, and in following up this resolution, they have now invited architects to submit competitive designs for the new buildings. They offer two premiums, the first of £100, and the second of £50; and it is stated that if from any cause the buildings are not proceeded with, and no drawings other than the competitive drawings have been prepared, the selected architect shall receive a payment of £200 in settlement of all claims. It is likewise stated that any design which is estimated to cost more than £40,000 may be disqualified. The available site specified embraces Liberton's Wyne. In regard to the Ionic portico, which is a conspicuous feature of the Parliament Square elevation of the present building, competing architects are expressly asked to consider whether it is desirable to retain it in its present position, or in any other position in connection with the new building; and while the Council are entitled to build up to the limits of their ground, competitors who consider it desirable to remove the portico are requested to have regard to the general amenity of Parliament Square in the building line which they may adopt for the east front of the new building. In the statement of accommodation required, mention is made of a Council Chamber for forty-one members, two committee rooms, and a County Councillors' writing-room; offices for the different county officials and their assistants, and for the headquarters' staff of the county police; a public office for the collection of rates, and a Justice of the Peace Court-room, with a floor area of 1250 square feet approximately. It is suggested that the Justice of the Peace Court and offices might be placed on the southern part of the site, and in a building of less height than the other parts of the structure, so as to interfere as little as possible with the windows in the west end of the Signet Library. The designs are to be lodged with the County Clerk by June 27th.

**Leeds.**—A new dead meat market is being erected at a cost of £30,000. The chief entrance to the market exactly faces St. James's Hall, and there are thirteen entrance s

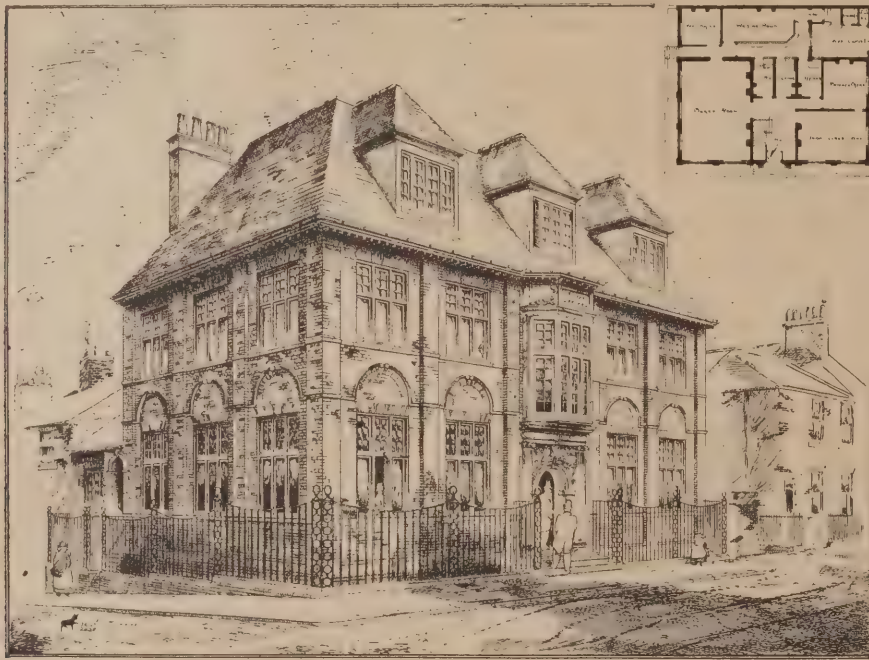


(one to each exterior shop) from New York Street. Between the two rows of shops an avenue, 12ft. wide, extends the full length of the building (200ft.) At the far end twelve offices are situated, six at each end of the pitch-pine balcony, approached by a spiral staircase. A caretakers' house is being provided at the principal entrance, and over it a clock-tower will be built to a height of some 70ft. The architects are Messrs. W. Hanstock and Son. The cost of £30,000 is inclusive of the abattoir. A covered wood-paved avenue separates the two structures, and a gangway, with a gradient of 1 in 5, will accommodate the cattle in their ascent to the lairs prior to slaughter.

**Newport, Yorks.**—A new church has been erected at Newport, Yorks, at a cost of about £7000, from a design by Mr. T. S. Brodrick, architect, of Hull. It stands on the western

**South Shields.**—The Union offices at South Shields, of which an illustration is here given, contain accommodation for the officials of the Guardians, consisting of board room, committee rooms, clerk's offices, and relief station, with rate collector's rooms on the first floor. The architect is Mr. J. H. Morton, F.R.I.B.A., of South Shields.

**Stanningley.**—A new school has been erected by the Pudsey School Board at Primrose Hill, Stanningley, from the designs, and under the superintendence of Mr. E. P. Peterson, architect, Bradford. It is built on the central hall principle for 389 boys and girls. There are three class-rooms on the north, and three on the east side of the central hall. The south side is occupied by spacious cloak-rooms, lavatories, and entrance halls—separate for boys and girls. The west side is reserved for future enlargement. There



UNION OFFICES, SOUTH SHIELDS. J. H. MORTON, F.R.I.B.A., ARCHITECT.

boundary of the parish of Wallingfen, and consists of a chancel, nave (with north and south aisles), two transepts, and a western tower, surmounted by a short steeple. The sloping roofs are of red Staffordshire tiles. The nave is pierced by four clerestory windows on each side, and the aisles are divided into three bays with three lights in each aisle, and terminated at the western end by a vestry. The nave is separated from the aisles by arches springing from capitals on circular pillars. The chancel is fitted with oak stalls, carved by Mr. Elwell, of Beverley, and the pulpit and altar table are of carved oak, from designs by the architect. A feature of the decoration of the church is the east window, the five lights of which are filled with stained glass of artistic design representing Scriptural scenes, the centre light depicting the Crucifixion. This window has been executed by Messrs. Clayton and Bell, of London. The contractor was Mr. F. Pattinson, of Rushington, Lincolnshire, and Messrs. Kelsey and Sons, of Goole, constructed the building.

**Rotherham.**—The new Corporation Swimming Bath, in Market Street, was opened recently. The bath has cost about £5000, and is the largest in the district, measuring about 26 yards by 12 yards, with a depth of 5ft. 8in. to 3ft. 8in. There are fifty conveniently arranged dressing boxes. The plans were prepared by Mr. W. Eckersley, a local engineer; and Mr. Richard Snell, of Rotherham, has been the contractor for the building; Mr. Johnson, of Tinsley, has supplied the tubes and girders; and Messrs. Newton, Chamber, and Co., Limited, of Thorncliffe, have been responsible for the ironwork of the roof.

is a full-sized playground on the Richardshaw Lane side of the building with playshed, &c., for boys, and on the lower side of the building there is also a playground and playshed for girls. The total cost, including site, playground, fencing, fittings, and furniture, is about £5,000. The school was opened on April 10th.

**A Munificent Gift** has been made to the Nottingham General Hospital. At a meeting of the monthly board a letter was read from Mr. John Robinson, J.P., of Worksop Manor, offering £10,000 for the purpose of building a new wing to the hospital. This offer was at once accepted.

**A Stained-glass Window** has been put up in the south aisle of St. Cuthbert's Church, Edinburgh. It contains illustrations from the life of St. John, and a representation of John and Mary returning from the Crucifixion. The artists who have executed the work are Messrs. A. Ballantine and Gardiner.

**Kensington Palace**, of which we gave an illustration last week, has been undergoing a process of restoration and renovation during the past year in view of its being thrown open to the public this summer. The old woodwork has been restored, the girders have been strengthened, and the place has been generally redecorated.

**New Technical College for Wigan.**—The Building Committee of the proposed College have decided to accept the design by Messrs. Briggs and Wolstenholme, architects, of Blackburn, which was submitted for competition. The structure will be in the Victorian style, in pressed bricks and terracotta, and will cost about £20,000.

## "THE SCOTSMAN'S" NEW BUILDINGS IN EDINBURGH.

**T**HE plans of the new buildings in Edinburgh, to be erected on the west side of North Bridge Street and south side of Market Street, by the proprietors of "The Scotsman," were passed at a recent meeting of the Town Council. The architects are Messrs. Dunn and Findlay, of Frederick Street, Edinburgh. The north elevation looking towards Princes Street has a frontage of 130ft., the whole frontage, including the buildings erected on the Old Fishmarket, being over 250ft. From the railway level to the highest point of the central pediment of the gable next the bridge the building is 190ft. in height. From the railway to Market Street is about 30ft., from Market Street to North Bridge Street 50ft. more, and the rest of the height, 110ft., is above that level. The style of architecture adopted is a free treatment of Renaissance, with French chateau features. The outstanding features on the northern elevation are two gables, the higher to the east, the lower to the west—both treated in a decorative fashion. They are joined together by a lower building. The eastmost gable has a breadth of 54ft. Prominent architectural adornments relating to it are octagonal turrets or tourelles, which, starting from the level of the second floor above the bridge, are carried up to a height of about 100ft., and are finished on top with circular stone domes surmounted by sculptured figures. The octagon is brought into the circle by means of corbelled work and angular rusticated pillars with entablatures. Between the towers is a triangular pedimented gable rising above the domes about 25ft.

The lower part of the basement immediately above the North Bridge is treated with strongly-rusticated ashlar work, pierced by three circular-headed windows. The windows over these are deeply recessed with architraves and intervening coigns. From this base there rises a row of four Ionic columns, running through the height of two storeys, with bases, capitals, and entablature. The cornice above the columns, with its plain modillions or brackets, is treated as the main cornice of the building. In the centre of the floor above rise pilasters with ornamental trusses carrying shafts which support the main ogee-shaped pediment of this gable. Over this pediment will rise a group of sculptured figures.

The west gable has a breadth of over 50ft. Its height above the railway level is 180ft.; above Market Street it is 150ft. At the angles are circular tourelles running up from the third storey above Market Street to a height of 70ft. The three-light windows with which these tourelles are pierced on every floor have architraves and coigns with carved frieze and cornice. Between these tourelles, and rising through four storeys of the building, is a series of four light oriel windows. The central portion of the gable is broken up by means of pilasters and a broad sculptured frieze, ornamental crow steps, and finials. The west gable projects 35ft. in front of the Market Street line of the east gable, and 45ft. in front of its North Bridge Street line. Entering from the North Bridge Street level is a terrace 10ft. wide. Below the level of the terrace to Market Street, the front of both gables is treated as a basement pierced by circular-headed windows. In the lower building between the east and west gables will be placed an inner staircase giving access mainly to the upper floors of the west building.

Further west, on the site of the old Fish Market, and separated from "The Scotsman" building proper by a low screen, in which is the entrance to the Flesh Market Close, is a building seven stories in height. By agreement with the Town Council "The Scotsman" proprietors, when they purchased this site, were bound to erect a new building upon it which would cost at least £15,000. The design shows a building, the cost of which will be about £50,000. It is designed in a style to harmonise with the pile to the east of it. Its frontage to Market Street is 100ft., and it rises to a height above that thorough-



fare of 110ft. at the ridge of the roof. On the street floor the arcade is 15ft. in height. At the height of 80ft. from Market Street there is a wall head cornice with ornamental modillions, rising over which are five dormer windows with side pilasters. Between the dormers is a pierced balustrade. This building has a straight sky line. Between the railway level and Market Street there is a height of 30ft. In connection with the erection of "The Scotsman" buildings, it has been arranged that the retaining wall on the railway side is to be removed along the length of the Market Street frontage; that this section of the street will be carried on concrete arches and steel pillars strong enough to bear a great weight, and that a railway tunnel entering from the North British Railway system shall be constructed underneath the street.

The north block, which has a frontage of 125ft., rises to about 100ft. above the street level. The central building of the North Bridge Street frontage is divided vertically through three stories into three compartments by means of pilasters and elliptical arches. Above the main wall head the building takes the form of a high pitched gable which is carried upwards with a variety of curved and straight lines, with obelisks intervening, until it terminates in a gablet with rusticated shafts, sculptured panel, pediment, and finial. The side wings balance each other, and are treated to harmonise with the main block. Dormers rise over the wall head and these are surmounted by gablets. The most northerly building has a frontage to the street of 60ft. The whole of the lower floor will be devoted to a hall, 53ft. by 43ft. by 26ft. in height, with a gallery carried round it on the first floor level. Above the central doorway rises through three flats a curved projecting gable, framed with rusticated pilasters, showing two-light windows, divided at the floor stages by sculptured panels, and finishing on top with a triangular pediment inclosing a carved tympanum.

The High Street corner block has a frontage to North Bridge Street of over 50ft. It has features in common with the rest of the elevation. The buildings to Cockburn Street will have Scottish features corresponding to the style of architecture of that thoroughfare; but the designs for these have not yet taken shape. The street level of the North Bridge Street elevation shows a range of shops with saloons behind and cellars below. The constructional feature of the whole of the pile will be that from basement to attics they will be carried on steel pillars and girders, so that partitions dividing up the internal floor space can be placed anywhere as may be required.

The cost of excavating the site of "The Scotsman" building proper was £6,000. This was done by Messrs. Waddell and Sons. This firm also secured the contract for taking down the old buildings and putting in the concrete foundations. The price was £14,000. The first contract for the buildings from Market Street to the North Bridge Street level, the public stair, and the tunnel, has been let to Messrs. William Beattie and Sons, the price being £30,000. This is exclusive of steel work, the contract for which has gone to Messrs. Redpath, Brown and Co. It is estimated that the total cost of the buildings, including the site, will exceed £300,000.

**A new Bridge over the Derwent.**—It is proposed to erect a bridge over the river Derwent, about three miles below Malton, at a cost of £1,200.

**Electricity at Bangor.**—The first installation of the electric light in Bangor and district, was switched on at Port Penrhyn Slateworks last week.

**An Agricultural Hall for Glasgow**—An agricultural hall is to be erected at Scotstown, which is about seven miles from Glasgow, at a probable cost of £70,000.

**The West of England Eye Infirmary** is now in course of re-erection. It will cost about £8,500, and will provide for the accommodation of eighty-five patients.

## Keystones.

**A new Catholic chapel** was opened last week at Aylsham.

**A Chinese Educational Institute** is proposed to be erected at Peking.

**Inverness Cross.**—An undertaking is on foot to restore the old Inverness Cross.

**An Electric Light Station** is to be erected at Lowestoft from plans by Mr. Hawtayne.

**A new Post Office** has been opened at Welshpool. It is situated in Broad Street.

**The Gladstone Statue** to be set up at Westminster is to be executed by Mr. Hamo Thorneycroft, R.A.

**A Primitive Methodist Chapel** has been erected at Skegness at a cost of £1,850, and was opened last Thursday.

**A swing bridge** is to be built across the River Avon (Bristol), to connect Hotwells and the Ashton Gate district.

**The Great Central Railway Company** have opened their depôts throughout their new extension line to London.

**Devonport National School.**—A girls' department of St. John's, Devonport, National School was opened last week.

**A Highly Placed Clock.**—The new clock in the tower of the Philadelphia City Hall is 370ft. above the pavement. It has cost 21,000 dollars, and is worked by means of compressed air.

**Glenbucket Public Hall.**—The foundation-stone of this hall was laid recently. The building is estimated to cost £300, and will be erected partly of freestone and partly of granite.

**A new Drill Hall at Ormskirk** is in course of erection. The cost of the building will be about £2,000, and it is being constructed from plans by Mr. H. Rimmer, architect.

**The Reconstruction of Holy Trinity Church Tower**, at Long Melford, is estimated to cost about £5,000. The corner stone was laid on the 10th inst., and when the tower is completed it will be 118ft. high.

**Llanarmon Memorial Column.**—A column has been erected in the village of Llanarmon, to the memory of Mr. John Parry, an anti-tithes and land reformer. It is of red Aberdeen granite, and 17ft. high.

**A new Hospital for Glasgow** was recommended by a majority at a meeting of the House Committee of the Glasgow Parish Council. It is expected to involve an expenditure of over £200,000, and will accommodate 1200 patients.

**New Baptist Chapel at New Tredegar.**—A new Baptist Chapel is to be erected at New Tredegar at a cost of about £2,000. It is to be built of native stone, with ornamental dressings of red brick, and the site will be in the main road leading to Elliot Town.

**Public Improvements at Gainsborough.**—In connection with the improvement of Gainsborough streets, the Urban District Council discussed an offer from Mr. Barnes to dispose of his property at £2,000, for widening Church Street, and refused to entertain the offer.

**Midford Castle, near Bath**, was built about 200 years ago. It is of singular construction, being in the form of the ace of clubs, the angles being rounded off and embattled. A gambler is said to have built the mansion with the proceeds of a night's gambling, and had it built in this peculiar style because his run of luck resulted from backing the club suit.

**The Society of Antiquaries**, of Scotland, held their monthly meeting last week. A paper was read describing a crannog, recently discovered at Hyndford, near Lanark, and one at Lochan Dughail, Argyllshire. Another paper, by Mr. T. Ross, architect, described a series of six paintings of the Sibyls, found on a wooden partition in taking down the House of Wester Livlands, near Stirling.

## Architectural Students' Spring Visit.

The spring holiday visit of the students attending the Architecture and Building Construction Classes of the Glasgow and West of Scotland Technical College took place on Monday, last week, to Motherwell and Hamilton. The party numbered about forty, Mr. A. Cullen, F.R.I.B.A., acted as guide, and many buildings were visited.

**An Electric Light Map** of the United States railway system will be an interesting feature of the Paris Exhibition. This map will be 137ft. high and 225ft. long, and every line will be marked out with electric lights. From time to time the position of a number of express trains will be shown on the map by means of moving electric lights.

**The Renovation of Leeds Church Institute** has been carried out at a cost of over £2,000. The improvements consist of an installation of the electric light, new heating apparatus, the provision of a smokeroom on the ground floor, the addition of a ladies' retiring room, a suite of lavatories, and an extra room to seat fifty persons. The apartment known as the council room upstairs has been enlarged so that it will seat about 150 persons. The entire premises have been redecorated.

**A Policeman Artist.**—Police-constable Jones, of Leeds, has succeeded in getting one of his pictures accepted for the Royal Academy. The artist is thirty years of age and a native of Shrewsbury. He has been nearly ten years in the force, and was injured during the Hull dock strike in 1893. He is a self-taught artist, and took to painting on receiving his injury at Hull. He pursues his studies while engaged in looking after committee rooms. Mr. Jones has exhibited pictures at Leeds, York, and Manchester.

**The new Friars' School.**—The memorial-stone of this new school at Bangor was laid last Wednesday. The building is in Elizabethan style on simple lines, with mullioned windows. The walling is of Llysfaen stone, with red sandstone dressings. On the south front is the principal entrance, to the right of it being the dining hall and assistant masters' rooms, while class-rooms are on the left. Above the class-rooms is the assembly hall, a room 58ft. long; the dormitories are placed over the dining room.

**"The Thermostat"** is a modest little eight-page sheet designed to disseminate such information as shall lessen the frequency of fires, and when they do take place—let everyone know how best they are extinguished. The first number is bright, interesting and readable throughout. Its promoters probably do not look for "the largest circulation in the world," but in pursuit of their definite and very useful aim, they ought not to lack a fair measure of support. "The Thermostat" is published monthly, price 1d., by Edgar Norman Duffield, 32, Beech Street, London, E.C.

**The Bristol Society of Architects and Surveyors.**—The annual meeting was held at the School of Art on April 11th, Mr. R. W. Fowler in the chair. The treasurer's statement of accounts, which showed a balance in hand of over £124, and the annual report, which dealt chiefly with technical matters, were adopted. The total membership is 116. The following were elected officers and council for the year 1899-1900: President, Mr. J. Smith; vice-president, Mr. A. Smith Denton; hon. treasurer, Mr. F. Fowler; hon. secretary, Mr. W. C. Fenton; council, the above and Messrs. E. M. Gibbs, C. Hadfield, C. J. Innocent, T. Winder, J. B. Mitchell Withers, and J. R. Wigfull.



## THE CARBONISATION OF WOOD.

WOOD, as a combustible, is divisible into two classes—first, the hard, compact, and comparatively heavy descriptions, such as oak, beech, elm, and ash; and, secondly, the light coloured, soft, and comparatively light woods, such as pine, birch, and poplar. In France, firewood is classed as fresh wood (*bois neuf*) and peeled wood (*bois pelard*), or oak stripped of its bark. According to M. Leploy, green wood, when cut down, contains about 45 per cent. of its weight of moisture. In the forests of Central Europe, wood cut down in the winter contains, even at the end of the following summer, more than 40 per cent. of water. If kept for several years in a dry place, wood retains from 15 to 20 per cent. of water, and even after it has been thoroughly desiccated, it will, when exposed to air under ordinary circumstances, absorb 5 per cent. of water in the first three days, and will continue to absorb moisture until it contains, say, from 14 to 16 per cent. The amount fluctuates above and below this standard, according to the state of the atmosphere.

M. Violette found that by exposing green wood to a temperature of 212deg. Fahr. it lost 45 per cent. of its weight, which accords with the observation of M. Leploy. He further found that by exposing small prisms of wood, half an inch square and 8 in. long, cut out of billets that had been stored for two years, to the action of superheated steam for two hours, they lost from 15 to 45 per cent. of their weight, according to the temperature of the steam, which varied from 257deg. Fahr., to 437deg. Fahr. The hardest woods lost more weight than the softer ones. At a temperature of 392deg. Fahr., wood becomes visibly altered, and the decomposition may, perhaps, commence at a lower temperature. It may be that the loss of weight is not entirely due to a reduction of hygrometric water. A higher temperature than 212deg. Fahr. appears to be necessary to disengage all the water.

Ordinary firewood contains, by analysis, from 27 to 80 per cent. of hygrometric moisture. M. Chevandier, in 1844, published the analysis of five woods, beech, oak, birch, poplar and willow. The woods were reduced to powder, and desiccated at a temperature of 284deg. Fahr., before being submitted to analysis. The results show that the composition of woods is practically as follows:—Carbon 50 per cent., hydrogen 6 per cent., oxygen 41 per cent., nitrogen 1 per cent., and ash 2 per cent., a total of 100, thus proving that there is only 56 per cent. of combustible matter, but that there is a large quantity of oxygen, nearly enough to neutralise the whole of the hydrogen, and that there is only a small quantity of ash. The above mentioned analysis is corroborated by the experiments of M. Violette, who desiccated the wood at a temperature of 176deg. Fahr. He found that the composition of the wood is about the same throughout the tree and bark; that the wood and the bark have almost the same proportion of carbon (49 per cent.), but that the bark has more ash than the wood. When wood contains 25 per cent. of water, there is only 75 per cent., or  $\frac{3}{4}$  lb. of wood substance in 1 lb., and the total heat of combustion is 75 per cent. of 7792 units, or 5844 units, which is only 41 per cent. of that of average coal. Similarly the equivalent power is reduced to  $\frac{3}{4}$  of 605 lb. of water at 212deg., of which the equivalent of a  $\frac{1}{4}$  lb. is appropriate to the vaporising of the contained moisture. For 1 lb. of dry wood the products are 13 cubic feet of gaseous products. M. Violette, in his experiments on the carbonisation of black elder wood, formed it into prisms 24 in. long and 0.4 in. diameter, made up in sets of twenty. Each set was dried separately at a temperature of 300deg. in a current of superheated steam, to which it was subjected during two hours.

The carbonisation was effected by the same medium, at least, up to 660deg. Fahr., and in crucibles placed in a furnace at higher temperatures. The degree of heat in the furnace was checked by the melting of small pieces of various metals, placed in the crucible

along with the samples. From the results it appears that charcoal, properly so called, is not formed until a temperature of 536deg. Fahr. is reached. From 536deg. to 644deg. Fahr. brown charcoal (from 36 to 31 $\frac{1}{2}$  per cent.) is formed. Beyond 644deg. Fahr. the charcoal is black, and the yield decreases with the increase of temperature, until, at the unknown temperature of melting platinum, it becomes just 15 per cent. of the weight of the dried wood from which it is produced. Brown charcoal is flexible, unctuous, and soft to the touch; while black charcoal is rigid, brittle, and harsh to the touch. According to Mr. Sauvage, the charcoal manufactured in French forests is composed as follows: Carbon 79 per cent., free hydrogen 2 per cent., hydrogen, oxygen, and nitrogen 11 per cent., and ash 8 per cent.—total 100. W. N. B.

## Under Discussion.

### MINOR POINTS IN PRACTICE.

At the meeting of the Edinburgh Architectural Society, on the 12th inst., Mr. J. Fairweather, of Glasgow, who represented the E.A.A., delivered a most useful and interesting paper on "Minor Points in Practice." Mr. Alfred Greig, vice-president, occupied the chair. The lecturer, as it were, laid his most private notebook before the audience as he gave his opinion on a variety of those little matters on which the success of a job ultimately depends. After some wise advice on the management of clients, all manner of materials and constructions were in turn taken up and contrasted from the points of view of efficiency and economy. The case between hollow and solid walls was carefully discussed, and the lecturer gave his verdict in favour of solid stone walls where such could be had. Many modern constructions and dodges were referred to, and the value of the paper was enhanced by the severely practical basis of all the criticisms, founded as they were on personal experience. A very hearty vote of thanks to the lecturer concluded the meeting.

### SHOP FRONTS.

The usual meeting of the Glasgow and West of Scotland Technical College Architectural Craftsmen's Society, was held at the rooms on Friday evening, the 7th inst., Mr. R. W. Horn, A.R.I.B.A., occupying the chair. A paper was read by Mr. Jas. Lochead, A.R.I.B.A., on "Shop Fronts, Past and Present." The author showed what an important branch of architecture shop-building is—how essentially modern—and he illustrated by limelight views the evolutions of the shop front from the fifteenth century up till the present day—from the old-fashioned "Rows and bulk shops," to the modern plate glass and colonnaded recessed fronts. He expressed the opinion that 8 ft. above the pavement was sufficient for the display of goods in the average shop window, and pointed out how the space above lent itself to architectural treatment. The average shop front was also criticised, and improvements were suggested. A very good selection of views of shop fronts, particularly local ones, was shown, and served to illustrate the author's remarks. A hearty vote of thanks was awarded Mr. Lochead for his very practical and interesting paper.

### MACHINE TOOLS.

At a meeting of the Society of Engineers, held at the Royal United Service Institution, Whitehall, on April 10th, 1899, Mr. John C. Fell, President, in the chair, a paper was read on "Machine Tools" by Mr. Ewart C. Amos, M.I.Mech.E. In his opening remarks the author pointed out the importance of engineers being well acquainted with the most modern practice in regard to the construction of machine tools. He further added that, owing to the important part in the world now played by machinery, the progress of this country in relation to others would be largely determined by its capacity to turn out the best and most improved tools. The author

then referred to the distinctive features of modern tools, directing particular attention to the fact that it had now become the practice to substitute for one machine doing a great variety of work a number of machines, each dealing with one class of article. Modern practice also called for greater accuracy and more automatic machinery. He observed that ball thrust, hollow spindles, cut toothed gear, and other refinements had now become very general, and resulted in the production of better work at less cost. He then divided his subject under a series of headings, which included, amongst others, lathes, drilling, boring, milling, planing, shaping, slotting, keyway-cutting, punching, and shearing, plate bending, metal sawing, and forging and welding machines. The author devoted considerable space to a description of various forms of capstan lathes with wire feeds and chasing apparatus, pointing out what an important tool this has become. Of drilling machines several useful types were described and illustrated, including a semi-radial drill of American design, which is of entirely novel construction. His reference to milling machines indicated the importance he attached to this class of tool, which is now in so much demand in all well-appointed shops, and is made in such a variety of shapes. The author then described several hydraulic power machines, and under another heading gave a description of a class of tool now coming very much to the front, viz., the pneumatic. Some useful information was given as to their advantages and economy. Some figures and data given in this connection showed that in drilling, four times as much could be done as compared with hand drilling, and that they effected a saving of some £50 to £75 per annum per tool, even in a comparatively small drill. Under the British v. American heading the author closely compared the two makes; and whilst he said he felt bound to give considerable credit to American manufacturers for their ingenious and well thought out designs and well finished machines, he also considered that the home products would probably excel them if our manufacturers could see their way to discard some of their old patterns. He concluded this section by pointing out that, although our markets were already encroached upon by the American makers, yet the prospect of a largely increased demand for machinery in the near future would tend to provide business for makers of both countries, securing at the same time a healthy competition. Under the title of cheap v. good tools, the author expressed himself very strongly in favour of good tools, and showed that they were, in the long run, cheaper than the so-called cheap tools, although higher in the first cost.

**Stalybridge Journeymen Painters** have struck for  $\frac{1}{2}$ d. per hour advance. Their pay at present is 8d. per hour.

**Electric Extensions at Southport.**—It has been estimated that £55,000 will be required for the necessary electric extensions at Southport, and the electricity committee of the corporation has decided to apply to the Local Government Board for permission to borrow that amount.

**Asylum Ventilation.**—In the ventilation of the Ballinasloe County Lunatic Asylum great attention is being paid to the efficiency of the ventilation, which is carried out by means of "Cousland's Improved Climax" patent direct-acting Louvre ventilators of an ornamental design, supplied by the "Climax" Ventilating and Heating Co. Ltd., 93, Hope Street, Glasgow.

**Drainage of Edgbaston and Harborne, Birmingham.**—A Local Government Board inquiry was held on the 12th inst., with respect to an application by the Birmingham City Council to borrow £155,000 for sewerage works, £1,100 for public walks and pleasure-grounds. The sewers in the two districts are unsatisfactory and the money is required to reconstruct them. No opposition was put forward to either scheme.



## Trade and Craft.

### LEAD SEALS.

Messrs. Marshall and Co., electrical and mechanical engineers and instrument makers, motor-car builders, exporters of machinery, &c., of Belsize Works, Clayton, Manchester, are the owners of valuable patents facilitating the manufacture of lead seals, which are so extensively used by corn millers, cement and seed merchants, &c., in sealing up the string used to tie up the necks of the bags, preventing their being tampered with, or the use of the bags (bearing the firms' brands) by other persons to sell an inferior quality of material. These lead seals are very easily and quickly used, and do away with all the trouble and mess of the old wax seals, and cost very little—viz., from 1s. to 7s. 3d. per thousand. The makers also supply special pincers to impress the seals with any design or lettering.

### TERRA COTTA.

Mr. Walwyn T. Chapman, architectural modeller and terra-cotta manufacturer, Grimsby Road, Cleethorpes, has just issued a revised price list of his goods. A most comprehensive list of stock goods is provided, illustrating what can be done in this well-known material. Mr. Chapman undertakes to execute architects' designs with the greatest fidelity and dispatch, by competent workmen, and this is a thing to be noted when building with terra-cotta, for another specially designed block may often be required at very short notice, and may stop the job for some time. He makes a speciality of architectural modelling, and the prices of his goods are extremely low.

### BLINDS.

Messrs. G. A. Williams and Son, of 21, Queen's Road, Bayswater, W., have sent us their illustrated catalogue. This well-known firm have been established as blind manufacturers for many years, and endeavour to make their blinds as unobtrusive as possible, in order to avoid clashing with the architecture. The question of the supply of good and suitable blinds to a building is often neglected by architects, and this results in annoyance to the occupants of the buildings as well as great loss of dignity to a building otherwise perhaps, entirely happy in treatment. The firm's catalogue gives many useful hints on the selection of blinds, and deals with inside cloth blinds, ornamental embroidered blinds, festoon blinds, reefing blinds, blinds for roof lights, lantern screens, inside and outside shop blinds, Venetian blinds, wire blinds, cane blinds, Japanese panels, curtains and curtain poles, spring box blinds, Florentine blinds, Spanish blinds, awnings, Oriental blinds, helioscenes, blinds for doors, shutters or balconies, verandas, &c. They also alter old blinds to suit new positions.

### BRICKS FOR ROADWAYS.

Although bricks have for some time been very largely used in America for street paving, English engineers and surveyors have hitherto confined their attention chiefly to granite, grit, or limestone sets, asphalt or wood blocks. There seems no reason, however, why the American system of brick roadways should not become quite a general one in this country, for there is abundant evidence to show that the American brick roadways compare very favourably in point of economy, durability, cleanliness and convenience with any of the more familiar systems. Messrs. G. Wooliscroft and Son, Limited, of Hanley, Staffordshire, have manufactured a quantity of specially made bricks for street paving, out of which Mr. J. T. Eayrs, M.I.C.E., of Birmingham, took a number promiscuously, and submitted them to severe tests for absorption, abrasion, and impact. The results of these tests are before us in tabular and diagrammatic forms; they may, however, be briefly summarised. The bricks were tested for abrasion and impact by being placed in a tumbler or rattler, 24in. diameter by 30in. long, and revolved for 1,000 revolutions at a speed of twenty-five per

minute. The bricks were carefully weighed before testing, and after 250, 500, 750, and 1,000 revolutions respectively. The average loss in weight on five bricks at the completion of the test was 7.15 per cent. The test for absorption was carried out with rattled bricks in order that they might be tested under such conditions as would obtain in actual use after considerable wear. Before testing, the bricks were dried in a stove for sixty-five hours, and then immersed in water, where they remained for fifty-three hours. The average gain was 1.57 per cent. Applying similar tests to a number of bricks manufactured by representative American firms, Mr. Eayrs finds that the bricks of Messrs. Wooliscroft give considerably better results, and he expresses the opinion that these bricks, if they can be supplied of uniform quality, equal to those tested, and are properly laid, are eminently adapted for the wear and tear of traffic in streets. Visitors to the forthcoming Building Trades' Exhibition at the Agricultural Hall will have an opportunity of inspecting the brick-paving, as a part of the carriage-way of High Street, Islington, is being laid with these bricks, and will, it is expected, be open for traffic by the time the Exhibition opens.

### WOOD CARVINGS AND MOULDINGS.

The Wood-Carving Company Limited, Windsor Works, Windsor Street, Birmingham, are making some patent ornamental solid wood mouldings, friezes, panels, finger plates and lock furniture, picture mouldings, dado and picture rails, electric wire casings, etc., etc. They also execute carved panels and hand-carving of every description to any design. Some wonderful work is being done by this company, for in sharpness and delicateness of detail the carving is, in many ways, quite equal to handwork. The great advantage these mouldings have over the ordinary kind is that they are solid and do not chip or look unsightly, as do the composition mouldings generally sold, and those who have to use the ordinary kind on account of cost will learn with pleasure that the price of these improved ones is extremely low. We notice in the catalogue some extremely pretty overdoors. The great speciality of the Company, however, is their Saracenic Twisted and Turned Mouldings, of which they are the sole makers. These can be laced together in an infinite number of ways, and can be used with excellent effect as enrichments, panel mouldings, hosings, &c.

### A WASHABLE DISTEMPER.

Again we desire to call attention to Hall's Sanitary Washable Distemper (Patented). This water paint sets hard, and being a strong disinfectant, is recommended by medical men for use after all infectious cases; it even destroys fleas, bugs, and other objectionable insects. It is perfectly washable three weeks after being applied, and will stand better than oil paint when applied to a damp wall. It will not scale off, is free from caustic and alkali, and can be painted on or varnished without sizing. It requires no solution or liquid, other than (hot or cold) water, to mix it ready for use, thus making it very cheap; it is also non-poisonous, cleanly in working, and applied easily. Its covering power is considerable, for one hundredweight is stated to cover double the surface coated by an equal quantity of pure white lead paint. The labour per square yard is about forty per cent. less with the distemper than when oil paint is applied, and the saving in the cost of materials and labour together is stated to be eighty per cent. as compared with oil paint. Cracks and holes may be filled with the stiff material, which will set harder than plaster of Paris, white ceilings coated with it will not turn black with sulphur, as it contains no lead, and will not crack or fall off, as is the case with ordinary whitewash. A great advantage of this material is that unlike similar articles it can be made in rich, deep colours, as well as in tints, as is testified by the colour card we have received, and any shade required can be matched. It is sold in tins or in bulk, and may be obtained from

all leading Chemists, Drysalers, Ironmongers &c., or from the manufacturers, Messrs. Sisson Brothers and Co., Ltd., Paint, Colour, and Varnish Works, Hull.

## Keystones.

**Dispute in the Engineering Trade.**—In connection with the conference which we reported last week, it is stated that the employers cannot see their way to grant an advance at present, but are willing to reconsider the question at an adjourned conference, to be held not later than Friday, June 22nd next. The question of then giving one shilling per week advance, to take effect from the first day in July, will be left to the decision of the executives.

**A Bradford Builders' Federation Started.**—A well-attended meeting was held at the Bradford Building Trades and Stone Exchange last Wednesday evening for the purpose of discussing the question of forming an employers' federation for the Bradford district. Rules of the Leeds and other federations were laid before the meeting, and the proposition having been favourably commented upon by the representatives of each trade concerned, it was decided to form such a federation. Rules were adopted, but no officers were appointed. The proceedings were private, and it was decided not to give the names of anyone present. No discussion took place with reference to the plasterers' strike.

**Labourers' Dwellings for Cork.**—A Local Government Board inquiry was held last week, in the Council Chamber of the Cork Municipal Buildings, in reference to the application of the Corporation for a loan of £5,881 to construct buildings for the working classes at a cost of £5,500, and certain sewage works at a cost of £381. The scheme is to erect eleven three-storey dwellings to accommodate about 165 persons, as a part of a large scheme on the site of the present Harpur's Lane Market. There was also a necessity for building several sewers in different parts of the city.

## CURRENT PRICES.

FORAGE.			
Hay, best	per load	£ s. d.	£ s. d.
Sainfoin mixture	do.	3 0 0	3 10 0
Clover, best	do.	3 0 0	3 15 0
Beans	per gr.	3 10 0	4 15 0
Straw	per load	1 4 0	1 4 6
OILS AND PAINTS.			
Castor, French	per cwt.	1 5 1	1 5 8
Colza, English	per cwt.	1 2 3	—
Copperas	per ton	2 0 0	—
Kerosene, water white	per cwt.	1 5 0	1 15 0
Lard	per cwt.	1 9 0	—
Linseed	per gal.	0 18 12	0 18 3
Neatsfoot	per gal.	0 2 6	0 4 0
Paraffin	per cwt.	0 10 0	0 19 0
Pitch	per barrel	9 8 0	—
Tallow, Town	per cwt.	1 1 6	—
Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 13 0	1 13 3
Glue	per cwt.	1 19 6	2 18 6
Lead, white, ground, carbonate per cwt.	do.	0 17 0	—
Do. red	per cwt.	0 17 0	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	3 11 0	—
Do. sticklac	per cwt.	2 2 6	2 15 0
Pumice stone	per ton	0 8 9	—
METALS.			
Copper, sheet, strong	per ton	79 0 0	81 0 0
Iron, bar, Staffs. in London	do.	7 0 0	8 10 0
Do. Galvanised Corrugated sheet	do.	11 15 0	12 0 0
Lead, pig, Spanish	do.	14 10 0	14 18 9
Do. English common brands	do.	14 8 9	15 3 9
Do. sheet, English, 6lb. per sq. ft. and upwards	do.	16 10 0	—
Do. pipe	do.	17 5 0	—
Nails, cut clasp, sin. to sin.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Straits	per cwt.	113 0 0	—
Do. English ingots	do.	116 0 0	117 0 0
Zinc, sheets, English	do.	27 10 0	28 10 0
Do. Vieille Montaigne	do.	31 0 0	—
Do. Spelter	do.	27 17 6	28 0 0
TIMBER.			
Sort Woods.			
Fir, Dantzic and Memel	per load.	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Laths, log, Dantzic	per bath.	4 10 0	5 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Deals, Archangel 2nd & 1st per P. Std.	do.	10 15 0	12 10 0
Do. do. 4th & 3rd.	do.	8 5 0	8 15 0
Do. do. unsorted	do.	7 5 0	8 5 0
Do. Riga	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow	do.	14 15 0	—
Do. do. 2nd	do.	13 0 0	—
Do. do. Unsorted	do.	8 0 0	10 10 0
Do. do. White	do.	7 15 0	9 15 0
Do. Swedish	do.	8 10 0	13 5 0
Do. White Sea	do.	10 15 0	18 0 0



Deals, Quebec Pine, 1st...	do.	18 5 0	—
Do. do. 2nd	do.	15 5 0	16 15 0
Do. do. 3rd & c.	do.	6 10 0	7 10 0
Do. Canadian Spruce, 1st	do.	7 15 0	8 10 0
Do. do. 3rd & 2nd	do.	6 7 6	6 10 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds...	do.	7 10 0	8 15 0
Flooring Boards, 1 in.			
prepared, 1st	per square	0 11 3	—
Do. 2nd...	do.	0 10 9	—
Do. 3rd & c.	do.	0 9 9	0 10 0
HARD WOODS.			
Ash, Quebec...	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 12 6	3 17 6
Box, Turkey...	per ton	7 0 0	15 0 0
Cedar, 1 in., Cuba	per ft. sup.	0 0 4	0 0 4 1/2
Do. Honduras	do.	0 0 3 7/8	—
Do. Tobasco	do.	0 0 4 1/2	—
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price			
for Cargo, Honduras	per ft. sup.	0 0 5 1/8	—
Do. African	do.	0 0 3 11/32	—
Do. St. Domingo	do.	0 0 5 1/16	—
Do. Tobasco	do.	0 0 3 21/32	—
Oak, Dantzic and Memel	per load	3 5 0	3 15 0
Do. Quebec	do.	4 12 6	5 0 0
Teak, Rangoon, Planks	do.	8 10 0	13 15 0
Wainscot, Riga (Bauk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub. ft.	0 1 9	0 2 7

## COMING EVENTS.

## Wednesday, April 19.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers).—Inspection and demonstrations in the Parish of St. George's, Hanover Square, conducted by Mr. A. Taylor. 2 p.m.

BRITISH ARCHAEOLOGICAL ASSOCIATION.—Mr. C. Dack on "Survival of Old Customs at Peterborough." 8 p.m.

SOCIETY OF ARTS.—Mr. Walter Hunter, M.Inst.C.E., on "London's Water Supply." 8 p.m.

BUILDERS' FOREMEN AND CLERKS OF WORKS' INSTITUTION.—Quarterly meeting of the Members. 8 p.m.

## Thursday, April 20.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers).—Mr. J. W. Clarke, on "Details of Plumbers' Work."

INSTITUTION OF CIVIL ENGINEERS.—The seventh "James Forrest" Lecture, to be delivered by Professor J. A. Ewing: "Magnetism." 8 p.m.

ROYAL INSTITUTION.—Professor Dewar on "The Atmosphere." II. 3 p.m.

SOCIETY ON ANTIQUARIES.—8.30 p.m.

## Friday, April 21.

INSTITUTION OF CIVIL ENGINEERS.—The seventh "James Forrest" Lecture, to be delivered by Professor J. A. Ewing: "Magnetism." 4 p.m.

ARCHITECTURAL ASSOCIATION.—Annual Soirée, St. George's Hall, Langham-place, W. A musical play will be performed, entitled: "The Druids' Elect: An Episode of the Ancient Britons." 8 p.m.

GLASGOW AND WEST OF SCOTLAND TECHNICAL COLLEGE AND ARCHITECTURAL CRAFTSMAN'S SOCIETY.—Business meeting. 8 p.m.

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## Saturday, April 22.

SANITARY INSTITUTE (Demonstrations for Sanitary Officers).—Inspection at the Sewage and Destructor Works, Ealing. 2.15 p.m.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Visit to Drum House.

## Monday, April 24.

SOCIETY OF ARTS (Cantor Lecture).—Prof. H. R. Proctor on "Leather Manufacture." Third lecture. 8 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers).—Prof. H. Robinson on "Sewerage and Sewage Disposal." 8 p.m.

## Tuesday, April 25.

SOCIETY OF ARTS (Foreign and Colonial Section).—Meeting at 4.30 p.m.

## Wednesday, April 26.

EDINBURGH ARCHITECTURAL SOCIETY.—"Notes on Romanesque and Byzantine Churches in S.E. Italy," by Mr. Frank Deas.

SOCIETY OF ARTS.—Ordinary meeting. 8 p.m.

INTERNATIONAL BUILDING TRADES EXHIBITION.—At the Agricultural Hall, Islington, N., open until May 6th

## Thursday, April 27.

SOCIETY OF ARTS.—Mr. R. Cameron, M.P., on "The Growth of Art in our Public Schools."

SOCIETY OF ARCHITECTS.—Meeting at 8 p.m.

INSTITUTION OF MECHANICAL ENGINEERS.—Ordinary general meeting. 7.30 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers).—Mr. Charles Jones on "Scavenging, and Disposal of House Refuse." 8 p.m.

INSTITUTION OF ELECTRICAL ENGINEERS.—Meeting at 8 p.m.

## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

BOURNEMOUTH.—For constructing sewers through the Upper Gardens, from manhole opposite the "London Hotel," to the borough boundary, and other works in connection therewith. Mr. F. W. Lacey, Borough Engineer and Surveyor:—

Grounds and Newton (informal) ... 10,402 Cooke and Co., 16, Victoria-st., S.W. \* £10,000

F. Osman ... £10,050 \* Accepted.

BRIXHAM.—For alterations, reseating, and renovations at the Wesleyan Chapel, Brixham. Mr. W. G. Couldrey, architect, Paignton. Quantities by Mr. Vincent Cattermole Brown, Paignton:—

H. Pharo ... £1,490 0 R. Waycott ... £893 0

E. Pike ... 935 0 R. F. Yeo, Torquay \* 829 0

W. Smaridge ... 898 10 \* Accepted.

CARDIFF.—For the erection of a pavilion, Cathay's Park, for the Committee of the National Eisteddfod. Mr. G. Thomas, architect, Queen's-chambers, Cardiff. Quantities by the architect:—

W. H. Ingleson ... £1,974 Jones Bros., Cardiff \* £1,860

Geo. Martin ... 1,900 \* Accepted.

DOVER.—For the erection of the superstructure of new branch premises at Cherry Tree-avenue, Dover, for the

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River and District Co-operative Society Limited. Mr. A. H. Steele, architect, Folkestone-road, Dover. Quantities by the architect:—

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W. G. Lewis ... 3,960 0 Dawkins, Dover ... 3,222 0

Denne ... 3,790 0 Hall ... 3,045 10

\* Accepted.

GREAT BADDOW.—For the erection of a cottage at Falcon's Farm. R. Mawhood, architect:—

H. Potter ... £255 J. Ely ... £205

W. Fincham ... 250 F. Weight, Springfield \* 192

F. Johnson ... 225 \* Accepted.

HIGHAM FERRERS (Northants).—For the erection of three houses, for Mr. W. Spong. Mr. H. Adnitt, architect, High-street, Rushden. Quantities by the architect:—

C. E. Bayes ... £765 0 H. Sparrow ... £741 0

F. Henson ... 763 0 R. Marriott ... 724 0

T. Wilmott ... 759 0 E. Mitchell ... 720 10

J. Harrison ... 750 0 Whittington & Tomlin ... 720 0

T. Swindall ... 745 0 lin, Rushden \* 699 0

Hacksley Bros. ... 745 0 T. and C. Berrell ... 699 0

\* Accepted.

HIGHAM FERRERS.—For the erection of three houses, for the Freehold Land Society. Mr. H. Adnitt, architect, High-street, Rushden. Quantities by the architect:—

T. Wilmott ... £768 10 E. Mitchell ... £724 0

A. Trayner ... 745 15 Hacksley Bros. ... 724 0

H. Sparrow ... 759 10 F. Henson ... 720 0

Whittington and Tomlin ... 730 0 T. and C. Berrell ... 710 0

R. Marriott ... 725 0 Swindall, Rushden \* 691 0

\* Accepted.

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[Architect's estimate, £490.]

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 \*Accepted.

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 Stammers ... .. 575  
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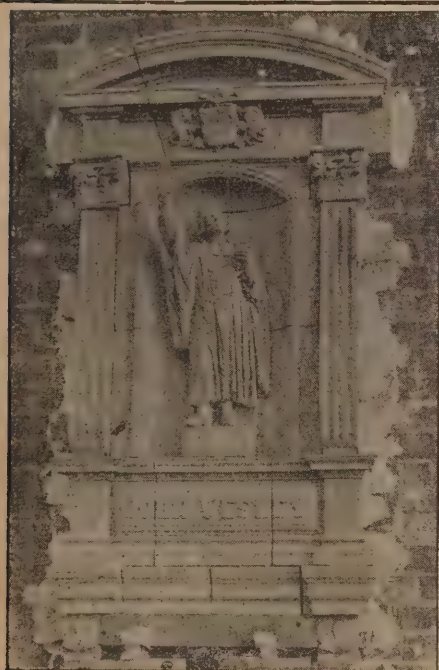
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The Darlington Corporation invite TENDERS for the various works required to be executed in the ERECTION of BUILDINGS to be used as an Electric Lighting Station in the Borough.

Plans and specifications may be seen and forms of Tender and schedule of quantities obtained (on payment of the sum of £2 2s., which sum will be returned on receipt of a bona-fide Tender, with the schedule of quantities thereto attached properly filled in) on application to the Borough Surveyor, Town Hall, Darlington, on and after the 15th inst.

The contractor will be required to enter into a formal contract for the due performance of the work containing a clause that he will undertake to pay to his workmen the standard rate of wages, and observe the hours and conditions of labour obtaining in the Borough.

Tenders, sealed and endorsed, must be delivered at my office not later than MAY 8th next. Separate Tenders will be entertained for the different trades, but no pledge is given that the lowest or any Tender will be accepted.

H. G. STEAVENSON, Town Clerk.

Town Clerk's Offices,  
Darlington.

April 6th, 1899.

1

**BOROUGH of KEIGHLEY.**

The Corporation are prepared to receive TENDERS for the MASONRY required in ERECTING BRIDGE at Aireworth, and for CONSTRUCTING APPROACH ROAD to same.

Tenders to be in by APRIL 20th.

Further particulars may be obtained at the Office of the undersigned.

W. H. HOPKINSON, A.M.I.C.E.,

Borough Engineer.

**CITY and COUNTY of NEWCASTLE-UPON-TYNE.  
TO IRON ROOF MANUFACTURERS.**

The Finance Committee are prepared to receive TENDERS for the CONSTRUCTION and ERECTION of an IRON ARCHED ROOF over the wide aisle of the Grainger Market, 319ft. long and 56ft. span, built with lattice girder ribs and purlins, to take the place of the present timber roof.

Plans and specifications can be seen, and quantities and further information obtained, at the Property Office, Town Hall, Newcastle, on and after MONDAY, MARCH 27th, 1899.

Sealed Tenders, addressed to the City Engineer, Town Hall, Newcastle, to be delivered before TEN a.m. on THURSDAY, APRIL 20th, 1899.

The Committee do not bind themselves to accept the lowest or any Tender.

By order,

HILL MOTUM,

Town Clerk.

Town Hall,

Newcastle-upon-Tyne,  
March 25th, 1899.

**TO BUILDERS and CONTRACTORS.**

The Joint Committee of the Library Authorities for Croydon and Lambeth invite TENDERS for the ERECTION of a PUBLIC LIBRARY in Westow-hill, Upper Norwood.

The specification, plans, and form of contract may be inspected, and forms of Tender, with copies of the bills of quantities, may be obtained of the Architect, EDWARD HASLEHURST, Esq., 7A, Lawrence Pountney-hill, E.C., upon application, and payment of £3 3s., deposit, which amount will be returned on receipt of a bona-fide Tender.

Tenders (sealed) must be addressed and sent to the undersigned, at the Lambeth Vestry Hall, Kennington Green, S.E., on or before APRIL 24th, after which date no Tender can be received.

The Committee does not bind itself to accept the lowest or any Tender.

HENRY J. SMITH,

Clerk to the Committee.

April 6th, 1899.

**COMPETITIONS.****BOROUGH of HARROGATE.****KURSAAL COMPETITION.**

In deference to the wishes of some of the Competitors in the above Competition, the Council has decided to extend the Time for sending in Drawings to JULY 3rd next.

SAMUEL STEAD,

Borough Surveyor.

Municipal Offices,

Harrogate,

April 13th, 1899.

1

**TO ARCHITECTS.**

The Frome Urban District Council are prepared to receive COMPETITIVE DESIGNS, &c., for their proposed NEW SCHOOL OF SCIENCE and ART.

Premiums £25 and £10.  
Full particulars and plan of site may be obtained of the undersigned upon deposit of fee of 10s., to be returned on receipt of bona-fide Designs, &c.

Designs, &c., to be received by me on or before APRIL 29th, 1899.

By order of the Board,

GEO. W. BRADBURY,

Clerk.

Public Offices, Frome.

March 29th, 1899.

**MIDLOTHIAN COUNTY COUNCIL.****TO ARCHITECTS.**

The Council, having in contemplation the rebuilding of the County Buildings in Parliament-square, Edinburgh, invite Architects to submit COMPETITIVE DESIGNS for the new buildings.

Conditions of the architectural competition and instructions to competing architects, along with a plan of the site, may be obtained on application to the undersigned.

A. G. G. ASHER, W.S.,

County Clerk.

County Rooms,

Edinburgh,

April 6th, 1899.

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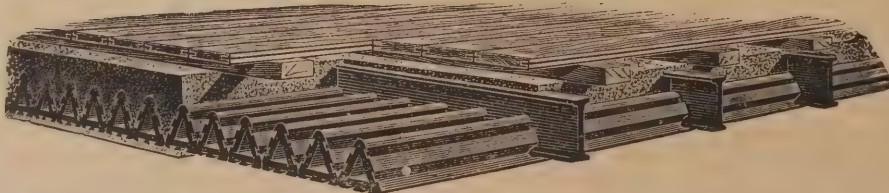
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*See Large Advertisement, Back Page, Monthly.*

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## HOSPITAL REFORM, FROM A SANITARY POINT OF VIEW.

By T. GARRETT HORDER.

(Hon. Sec. Hospital Reform Association.)

AT first sight there does not appear to be a very close connection between hospital reform and sanitation, but I hope to be able to show that the measures that have been advocated by the Hospital Reform Association, would, if carried out, prove distinctly beneficial to the community at large. That much more attention is paid nowadays to the sanitation of hospitals is happily true. That many defects still remain, especially in the older institutions, can hardly be denied, and it is probable that no measures that could be taken, short of rebuilding, would prove entirely satisfactory. Although much has been done to improve the accommodation for the resident medical and nursing staff, yet I think it must be allowed that much still remains to be done in that direction. That all persons who have to live under the hospital roof should have airy and cheerful living and sleeping rooms goes without saying. I should not on my own responsibility go so far as to say that possibly the Committees of Management have not in the past taken that interest in the well being of the resident staff that they ought to have done, but I am confirmed in my opinion by such an experienced hospital manager as the Honorable Sydney Holland. In a paper read by him at a meeting of the Hospitals' Association in 1896, he made use of the following language: "If I have been deeply impressed with one fact more than another it is this; that a large number of the Committee men of many London hospitals are absolutely ignorant of almost every detail connected with their hospital. They knew their way about it, some of them, not all by any means; they know enough of their matron and secretary to believe her and him when they are told that their hospital is the best in London; but they do not know the condition or inside of any other hospital to compare with their own; they do not know the pay or hours of their own nurses nor where they feed or sleep. They have never given the smallest personal attention to making the lives of the young women easier or happier. They do not know the procedure as to out-patients or in-patients, and they know nothing whatever about the in-patients themselves. This is a fact tested by me in many cases."

Such a statement appears to me to prove the necessity of establishing in all our large cities Hospital Councils or Central Boards, to whom the public could apply for guidance and help before making their contributions. Although this question has not yet been brought to a satisfactory solution in London, yet it is extremely gratifying to note that the Council of the Prince of Wales's Hospital Fund has determined to inspect every hospital before making any further grants to their funds. One can hardly help expressing surprise that a similar course has not been adopted by the Council of the Metropolitan Hospital Sunday Fund. Recent investigation has proved that in this particular respect Dublin is far ahead of any other city in the United Kingdom. Not only is every hospital which applies for a grant regularly inspected by a special committee appointed for that purpose, but the results of that inspection are printed and published for the use of the public. Moreover, every detail in connection with receipts and expenditure is set forth in these reports.

To come now to the more particular object of this paper, I will place this proposition before my readers: That the aggregation of large numbers of sick people in the out-patient department of our hospitals and infirmaries is detrimental to the well-being of the patients, is unnecessary, and is likely to cause the spread of infectious disorders.

Take the usual waiting-room of a large city hospital, and what do you find? A large congregation of men, women and children (and more particularly the two latter) suffer-

ing more or less from every conceivable disease, mixed indiscriminately together, patiently waiting their turn to be called before the physicians and surgeons in attendance. Can the waiting room attendants be expected to distinguish between infectious and non-infectious cases? You could hardly expect them to distinguish between a case of mumps and a case of ordinary swollen face, or between a case of roseola and a case of scarlet fever, or between a case of erythema and a case of measles. I am not in a position to give many statistics bearing on this particular point, simply because few hospitals publish statistics of the diseases met with in their out-patient departments. I can give, however, figures from one hospital in Manchester, and one in Liverpool, which will prove that the danger of infection is a real and not a fancied one.

In the Clinical Hospital, Manchester, in 1895, the following cases were treated in the out-patient department: Measles, 8; whooping cough, 9; chicken pox, 6; enteric fever, 2; erysipelas, 2; pediculi, 40; scabies, 50.

In the Liverpool Infirmary for Children, in 1896, the following cases were treated in the out-patient department: Typhoid fever 9; scarlet fever, 15; measles, 7; whooping cough, 55; chicken pox, 32; mumps, 17; diphtheria, 17; pediculi, 47; scabies, 32.

It may be assumed that a similar condition of things occurs in the majority of the out-patient departments.

Apart from the danger of spreading infectious diseases, I maintain that much suffering is caused by the long hours of waiting in a densely crowded apartment, that patients who suffer from acute disorders are made worse by long waiting in a vitiated atmosphere, and that the physicians and surgeons (especially the former, for, as a rule, there are twice as many medical as surgical cases) are wearied out by having to attend to such a large number of patients, and are consequently often not able to do full justice to cases that require their best energies to treat. The out-patient department of our general and other hospitals is fast becoming unmanageable, and it will really be necessary to make some radical changes.

In the Report of the Birmingham Hospital Reform Inquiry Committee, I find it stated "that the actual number of persons who received hospital treatment during the year 1889 can only be arrived at as a matter of estimate, and the Committee think that it may be put down as being somewhere between 140,000 and 150,000 persons. The figures (the Committee go on to say) are of very serious import. On the one hand they bear conclusive testimony to the high estimation in which the hospitals and their staffs are held by the public. On the other hand, the existing medical staffs are overworked by reason of the swarms of out-patients who crowd to the hospitals for treatment. This puts unfair pressure upon the visiting physicians and surgeons, and is detrimental to the patients themselves in two ways. In the first place, serious or complicated cases cannot receive that careful and prolonged medical investigation which would otherwise be afforded them, and secondly, the length of time which a patient has to wait before his turn comes to see the doctor must often be injurious to him. There is a further evil which results from the overcrowding of the out-patient departments—namely, that from want of time the physicians and surgeons cannot adequately utilise them for purposes of medical instruction to the students. If the number of patients go on increasing at anything like the rate at which they have increased of late years, an utter breakdown of the present arrangements must be the result."

Then referring to the question of the ailments of out-patients, the committee say: "A man who cannot afford to pay for the proper treatment of a severe or complicated malady, or a long illness, may well be able to pay ordinary medical fees for a trivial ailment of short duration, and it is an abuse of hospitals to take up the time of the eminent physicians and surgeons who constitute the visiting staff with crowds of trivial cases, to the detriment

of the really serious cases which call for all their skill and attention."

It is plain that the question whether a patient is a fit subject for hospital treatment depends partly on pecuniary and partly on medical considerations. No one but a skilled medical man can be trusted to say whether a case is serious or trivial. But wherever the line should be drawn between fit and unfit cases, the great weight of the evidence shows that as regards out-patients it is widely transgressed.

The recommendations agreed upon by this committee were as follows:—

1. The formation of a general council representative of all the public medical institutions of the city.
2. The formation of an Inquiry Agency to investigate the circumstances of applicants for treatment at the hospitals.
3. That apart from first aid and urgent cases, regulations should be passed by the hospitals to exclude trivial cases and cases where either the patients are in a position to pay for such treatment as they may require, or which could be more properly dealt with under the Poor Law.
4. That facilities should be given for cases, so excluded, being dealt with by dispensaries or provident dispensaries.
5. That any person recommended by an approved provident dispensary or by a qualified medical practitioner, should as a rule be admitted to the out-patient department of the hospitals without further formality.

In conclusion, may I say that in addition to the above valuable recommendations it would be advisable to make provision for the periodical inspection of all hospitals by the Medical Officer of Health, and that officer should be requested by the sanitary authority to publish a report dealing with defects that have come under his notice. We have rules and regulations dealing with overcrowding, &c., in lodging houses; why shouldn't we therefore take every possible precaution to ensure that the sick in our hospitals are being dealt with under the most favourable hygienic conditions? In order to avoid all chances of conveying infectious diseases in waiting rooms, and also to discriminate between trivial cases and cases that really require hospital treatment, it seems advisable in all large hospitals to appoint a special resident medical officer to carry out such duties. It is well to note that such a system has been in operation for some years at St. Thomas's and St. George's Hospitals, and that recently the authorities of St. Mary's Hospital have made a similar appointment.

**Shambles at Wednesbury.**—The Wednesbury Town Council has decided to make an application to the Local Government Board for sanction to borrow £2,810 for the purpose of purchasing shambles, and to carry out street improvements.

**Ludlow Sewerage Scheme.**—A provisional order, applied for by the Ludlow Town Council, for the purchase and taking of seven acres of land on the Hucks Barn Estate, Ludford, near Ludlow, otherwise than by agreement, has been received, and the sanitary committee are making preparations for plans for the septic tank system.

**Upperstone Valley Sewerage.**—At a meeting last week of the Upperstone Valley Main Sewerage Board, the question of making alterations and additions to farm buildings at Whittington was considered. The chairman said he wished the board to realise that the farm did not require so many buildings as were planned, but it would require them in about two or three years, and probably more, because as the farm developed into a sewerage farm so would the requirements for buildings continue to increase. Ultimately, after much discussion, it was decided to leave out of the scheme a range of buildings on a part of the farm. This will bring the cost of the scheme, which was £3,000, down to £2,000. It was also decided to erect five cottages, two at the Whittington farm and one each at Tivdale, Tetford, and Cradley Pool, at a total cost of £1,750.



## THE PLASTERERS' DISPUTE.

THE dispute has had one good result, and that is, the bringing of the masters into closer touch with one another, and the formation of a national association. In the past they have been organised only by the federation with the Master Builders' Association, but at a meeting in the rooms of the Bradford Stone Exchange it was decided to form a national association to safeguard the interests of master plasterers in particular, and also to work in conjunction with the Master Builders' Association. At the meeting in Bradford nearly one hundred delegates were present. An executive committee was also formed, and Mr. J. H. Sugden, of Bradford, was elected as the association's first president, with Mr. Hodkin, of Sheffield, as secretary *pro tem*. Subsequently the present dispute was discussed, and it was decided to forward a communication to the Master Builders' Association on the subject.

In a letter to the "Daily Chronicle" of the 11th inst., signed by "Provincial Employer," attention was drawn to the possibility of arbitration, which the writer thought would be the wisest course to take under the circumstances.

With regard to the meeting held on the 6th inst. the opinion of the members of the Plasterers' Union on the action of the Executive Council is in favour of what was done. The men state that if the proposals of the masters had been accepted, their position would have been made worse than it was before the ten weeks' strike of 1896, and the rights they won by that fight would have been lost.

In the provinces the men seem to be still firmly resolved to abide by instructions from headquarters in London. Various associations have been formed. It is stated in a Yorkshire paper that architects are in thorough sympathy with the action of the master builders, owing to the excessive cost of work during the last two years. At a meeting in Bradford last Thursday of the Yorkshire Federation of the Master Builders a letter was read from the National Association of Master Plasterers, calling on the builders to declare a lock-out in all branches of the building trades; and at a meeting in Derby to-morrow it is intended to advocate this step. The co-operative society in Leeds has engaged the whole of the hands who have not left the district for jobs elsewhere.

Last week's issue of "The Guardian" has an interesting leader on the dispute. It says: "Every trade dispute runs the same wearisome course, through misunderstandings to mutual recriminations, charges and counter charges, it drags its way through a costly strike or lock-out, and issues, for the most part, in a compromise that settles nothing. In nine cases out of ten the real point at issue, overlaid in the course of the dispute by half-a-dozen subsidiary quarrels, is one which admits of no compromise, and is only decided by *force majeure*. Thus in the case of the plasterers a dispute, which a newspaper so friendly to workmen as the "Daily Chronicle," has characterised as "senseless," is in reality concerned with the question whether unionists are to allow non-unionists to work with them, or are to coerce them and the employers by striking or threatening to strike if they are employed. In itself the question seems a perfectly simple one, and in proportion to its simplicity is the impossibility of a solution likely to be acceptable to both parties. Either the non-unionists will be coerced, or they will not; either the unionists will work with them, or they will not. . . . On the merits of the case it is less difficult than usual to pronounce, inasmuch as the claim put forward by the men was more aggressive than usual. They demand not merely that the workmen employed shall be unionists, but that the foremen should be coerced into joining the union. This seems to us a claim so impossible to admit as to be little short of impudent."

## Builders' Notes.

**The Allenton Schools, Derby,** are being warmed and ventilated by means of Shorland's patent Manchester grates, supplied by Messrs. E. H. Shorland and Brother, of Manchester. The same grates have been supplied to the Girls' Intermediate Schools, Cardiff.

**Builders and Bye-laws.**—At the Tyne-mouth County Petty Sessions last week, J. C. Hope, Crown Street, Elswick Road, Newcastle, was summoned for failing to give proper notice in writing to the local surveyor before commencing to erect certain buildings, at Wallsend, on the 16th ult. Mr. W. S. Daglish, clerk to the Wallsend Urban District Council, prosecuted, and said the plans were strictly in accordance with the bye-laws, but the defendant had neglected to give the proper notice to the authority before commencing to build. He had received a letter from Mr. Hope, regretting the irregularity.—A fine of 1s. and costs was imposed. William Thompson, builder, Ninth Avenue, Heaton, was summoned for a similar offence. Mr. Daglish read a letter from Mr. Thompson, expressing regret that he had unwittingly made a technical error, and explaining that he was always anxious to comply with the bye-laws.—Defendant was also fined 1s. and costs.

**A Point in Bankruptcy Law.**—At Rochester County Court, Edward Edwards, a jobbing builder, sued William Ward, the owner and occupier of Florence Villa, Grove Road, Frindsbury, for 10s. 6d., for work done in opening up a cesspool, &c., and attending the City Surveyor in relation to plans and awaiting instructions. The plaintiff complained that the job had been given to someone else to finish.—Defendant's wife alleged that the work had not been done properly, nor with reasonable despatch, and someone else had to be got to finish it.—Plaintiff had made a similar claim against George William Rotherham, owner and occupier of the next villa, in respect to the same work. The defence in that case was the same as in the first, and it was further stated that in 1895 the plaintiff had been adjudicated bankrupt in the same court, and the work in question had been done just prior to his bankruptcy.—His Honour said that in that case the plaintiff could not recover this money. Whether the Official Receiver would was another matter. There would now be a non-suit.

**Damage Caused by Falling Mortar.**—In the City of London Court, before Mr. Commissioner Kerr, an action was brought by Alfred Pickard, 106, Liverpool Road, against F. F. and J. Wood, builders, Cleveland Street, Mile End, to recover damages for having a suit of clothes, &c., spoiled through the negligence of their men. It appeared that the defendants, on January 11th, were engaged in building operations at premises in Houndsditch. When the plaintiff walked along the pavement some mortar and lime fell through the scaffolding on to his hat, clothes, tie, &c., all of which were spoiled. Mr. Stephenson, the defendants' counsel, said that they had permission from the City Corporation to erect the scaffold, which was properly fixed. The plaintiff must have gone inside the building. Mr. J. H. Welfare, the plaintiff's solicitor, said that was simply ridiculous. Mr. Commissioner Kerr thought there was plenty of evidence of the scaffolding being insufficient. The mortar would not have poured down on the plaintiff otherwise. Fortunately the damage was not considerable. There would be judgment for the plaintiff for £3 10s. and costs. The defendants' men should have been more careful.

**The Workmen's Compensation Act—A Broken Ankle.**—Mr. Adshead Elliott, barrister, sat at the Manchester County Court last Thursday, as arbitrator under the Workmen's Compensation Act, 1897, to hear a claim for compensation made by Harry Lodge, a foreman

bricklayer, residing at Tiverton Place, Ardwick, against Benjamin Morton, a sub-contractor, in connection with the erection of the Midland Hotel, Peter Street. Mr. Symonds, barrister, appeared for the applicant, and the respondent was represented by Mr. Acton, barrister. On December 23rd last the applicant, in the course of his work at the site of the new Midland Hotel, was knocked down by a travelling crane. The ankle of one leg was broken, and that of the other was severely sprained. He had since been under medical treatment. At the time of the accident he was in receipt of £2 10s. per week. Dr. Russell, Longsight, called for the applicant, said he thought it would be three or four months before the applicant would be able to get about at all, and that it would be at least twelve months before he would be able to trust himself on the leg of which the ankle had been broken. Dr. Brown, Higher Broughton, for the respondents, considered that the applicant would be able to resume work in six months. The arbitrator awarded the applicant £1 per week during total incapacity to work, and intimated that application might then be made to him again.

**Building Regulations at Felixstowe.**—At the Woodbridge Petty Sessions a case was heard in which Messrs. Spencer, Santo, and Co., Ltd., of London, were summoned for erecting a certain building, and further with continuing the process of erection, after receiving notice to desist. Mr. Jennings, who appeared for the Felixstowe Urban Sanitary Authority, said that according to Bye-law 53, every person who erected a building was bound to leave an open space at the rear exclusively belonging to that particular building. At the commencement of the bye-laws there was a definition of a domestic building, in which the present case was clearly embraced. The house they had before them had been divided, and a portion taken off and made into a new building. Part of this building was now let as a shop in Hamilton Road, and it would be claimed that the air space for the one behind was sufficient for both. Mr. G. H. Horton, the surveyor who drew up the plans deposited, said that in August a shop front was placed in Hamilton Road, and alterations were effected which practically made it into two buildings, and the air space for the hindmost had to serve for both. Mr. Glen, who represented the defending firm, said that the buildings were not separately rated, and the premises had existed exactly as at present since he had known them, with the exception of the shop front and counters. When the house was separately occupied, the door communicating between the two parts was bolted on one side at least. The new water-closet and drainage in substitution for the old ones were the points disapproved of by the Council in July. According to Mr. C. G. Havell, medical officer of health for Felixstowe and Walton, the buildings, as at present situated, had not sufficient air space, and he considered them objectionable.—Mr. Glen, in defence, said that, beyond Section 159 of the Public Health Act, the prosecution had no authority at all, for the premises were built before the regulations were made. Bye-laws made with reference to new buildings did not apply to old houses. It would be very hard to make them affect houses which were built before the regulations came into force. There had been no contention that the premises had been built latterly, or that they had been converted. His clients had not converted the houses, and had only bolted the door leading between the two parts of the house. If there were two buildings now, there were two buildings before; and he held that the new shop front alone did not affect the question at all. What had been done was done in the original erection of the house. If it was not effected then, it was done subsequently, but before his client had come into possession, and was, therefore, done before the regulations affecting it came into force.—The Bench retired, and on returning, the chairman said that the majority did not consider the premises a new building. They would, therefore, dismiss the case, each side to pay its own costs.



## Masters and Men.

**Plumbers' Wages.**—The operative plumbers of Ashton, Stalybridge, Hyde, and district made an application for an advance in wages from 8½d. to 9d. per hour, to commence on June 24th next. If the increase is not granted it is expected that arbitration will be resorted to.

**The Scarborough Master Builders' Association** have informed the Labourers' Union, in answer to their request for a conference, that if they are prepared to discuss without prejudice their objection to working with non-Union labourers, and will give their deputation full authority to settle the dispute, a committee of the Masters' Association will be appointed at once to meet them.

**Close of the Arbroath Joiners' Strike.**—At a mass meeting of the Arbroath operative joiners last Thursday it was intimated that the masters at a meeting held the previous night had agreed to sign the bye-laws. The masters had already granted the men an increase of wages—from 7½d. to 8d. per hour—but they had refused to sign the bye-laws which had existed last year as to country work and other matters.

**The Carpentry and Joinery Trades.**—According to the employment returns issued by the Amalgamated Society of Carpenters and Joiners, the above-mentioned trades have not been materially affected by the Plasterers' dispute. This society has only 828 members on unemployed benefit, out of a total of 58,000, representing a proportion of 1·4 per cent., and in the Manchester branches there are about 24 members on donation, which is about 4·5 per cent. of the local membership. Demands for higher wages are in the hands of the employers in various districts. In Manchester, Liverpool, and Fleetwood, the men have asked for a penny per hour advance, the notice to expire at the end of the present month. A similar demand has been put forward in Rossendale, where the notice will expire a month later. In Wigan the workmen have asked for a penny per hour advance, the notice expiring at the end of this month. At Barrow the employers have already granted an increase of wages to the men. No friction of any serious character has arisen or seems likely to arise in connection with the wages movements referred to above.

**Halifax Joiner's Strike: Judge's Decision.**—In last week's issue we gave a full report of this case, which was before Mr. Justice Sterling in the Chancery Division, and was an action brought by the plaintiff Charnock and twenty-five other master joiners, of Halifax, to restrain the defendants, two prominent members of the Union of Joiners, at Halifax, from watching or besetting the plaintiffs' premises or interviewing their workmen with the object of inducing or persuading the men not to work for the plaintiffs. The case came on again on April 12th, when His lordship referred to the Acts relating to trades unions, and, having reviewed the evidence on this part of the case, expressed the opinion that what the defendants had done at Fleetwood, both at the landing stage and the railway station, amounted to an illegal act, and, therefore, the plaintiffs were entitled to an injunction. But as regarded what happened at Halifax when the men arrived there, there was a great conflict of evidence. The defendants said that they only interviewed the men with the legitimate object of obtaining and communicating information. Having carefully read the evidence on the one side and the other with respect to what happened at Halifax, he came to the conclusion that it was not a case in which he ought to grant an interlocutory injunction, and therefore that portion of the plaintiffs' case failed. This point could only be decided at the trial. His lordship granted an injunction as to Fleetwood, or any other place where the men might be landed, as he had already intimated. Judgment was given accordingly.

## Engineering Notes.

**Sir Courtney Boyle** presided last week over the Board of Trade inquiry into applications by the Smithfield, Metropolitan, and Charing Cross Companies for Provisional Orders, enabling them respectively to compete in the supply of electric lighting in the City as against the City of London Company. After some discussion it was decided that the Board of Trade should communicate with the Corporation before coming to any conclusion in the matter.

**Lowestoft Electric Lighting.**—A Local Government Board inquiry was held by Lieutenant-Colonel A. C. Smith, R.E., last week, into an application made by the Lowestoft Town Council to borrow £30,000 for purposes of electric lighting. The estimate of capital outlay is as follows:—Buildings, £4,000; generating plant, including boilers, engines, dynamos, accumulator, battery, switchboard, pipework, pumps, engine-room overhead travelling crane, and station lighting, £7,973; underground mains for private lighting, £8,162; public arc and glow lighting, £757; meters and house service connections, £2,000; engineering and legal expenses, £1,500; contingencies and unforeseen, £500; extension to Belle Vue Park, seven arc lamps, and private distributing mains, £480; also the Grand Hotel, Kirkby, thirteen acres for private distributing mains, £2,800; total £28,172.

**A Contract Case.**—At the West Bromwich County Court, before his Honour Judge Young, an action was brought by James Lees, engineer, of Manchester, against J. and S. Roberts, of the Swan Iron-foundry, West Bromwich, to recover £7 2s. 4d. paid by plaintiff for goods in excess of price fixed in a contract alleged to have been entered into between the parties. It appeared that early in October plaintiff ordered a quantity of tubing and special fittings from defendants, to be delivered in fourteen days. The goods, it was stated, were not delivered by the time arranged.—Mr. Ward, for the plaintiff, contended that the plaintiff was entitled to recover the amount claimed, which he had paid to another firm of tube manufacturers in excess of that which the defendants had quoted for the goods.—Mr. Darby, for the defendants, handed in the correspondence, and urged that there was no contract, as before the place of delivery was settled the plaintiff cancelled the contract.—The Judge held that there was no contract, and gave judgment for the defendants, with costs.

### South-Eastern Railway Improvements.

—A large number of improvements, involving the expenditure of many thousands of pounds, are to be effected in connection with the South-Eastern Railway. Extensive locomotive sheds and shops, costing about £60,000, with machinery and cottages for workmen to cost about £50,000, are being constructed at Slade's Green. At Bricklayers' Arms Station there are to be new sheds which are estimated to cost about £30,000. The old low-level station at London Bridge is to be thoroughly renovated, and trains from Redhill and Caterham will be able to go on to Cannon Street or Charing Cross. The alterations at the low-level station will practically involve complete reconstruction; there will be a new entrance, and a new booking office, and the rearrangement of part of the present general offices will be effected. The total cost of this work is estimated at £25,000. At present from the Surrey Canal to St. John's there are four lines, and under a new scheme two more lines are to be put down from St. John's to Orpington, involving an outlay of about £400,000. Beyond Orpington the double sets of rails will be provided at railway stations only; but this scheme will practically necessitate the reconstruction of every railway station on the main line. As soon as the necessary Parliamentary powers have been obtained a start will be made at Tonbridge

Junction, where it will be needful to alter the levels of the bridge which carries the main road across the railway. The expenditure at Tonbridge is estimated at £40,000. For Ashford Station plans are being prepared which will provide for six separate roads, so that Dover and Margate trains can both pull up in the station at the same time, instead of having to wait for each other as at present. The outlay at Ashford is calculated at over £60,000. The smaller stations between these important junctions will be taken up later, but eventually every station is to be rebuilt and have its four sets of rails, so that an express can always pass through without interfering with local traffic. At Maidstone about £22,000 is being spent on station improvements.

### Lord Kelvin on Refuse Destruction.

Lord Kelvin has just prepared a report on some investigations made by Professor Archibald Barr and himself in Edinburgh, Bradford, and Oldham, on the subject of the destruction of town refuse. The report is altogether a remarkable document, and is not only of great interest to local authorities, but to the general public. In one instance he experimented on damp ashpit refuse, containing a large proportion of night soil and vegetable matter from markets and shops. This was consumed without the slightest trace of smoke. In addition to this solution of the smoke difficulty, the residual products proved to be of great commercial value. In another case the steam produced by the process of destruction was utilised for the driving of electric lighting machinery and other power purposes. No coal or coke whatever was employed, and in this instance also there was an entire absence of smoke. Lord Kelvin's report demonstrates that our public bodies have no longer any excuse for referring to "waste products," but have within their reach the means of turning the most unpromising kinds of refuse to a highly profitable account.

**The City's Electric Lighting.**—A specially convened meeting of the Court of Common Council, presided over by the Lord Mayor, was held at the Guildhall recently for the purpose of considering electric lighting questions. At the beginning of the proceedings the Town Clerk read the opinion of Mr. Danckwerts, barrister-at-law, who had been consulted as to whether, under the provisions of the 42nd Section of the Sewers Act, 1848, and the 53rd Section of the Act of 1851, contracts made with the City of London Electric Light Company were not null and void in consequence of Sir Joseph Savory, M.P., and other members of the Corporation, who were shareholders or promoters of the Electric Lighting Company, having taken part in granting the contracts. Mr. Danckwerts was emphatically of opinion that the contracts were, in consequence, null and void. On the recommendation of the Streets Committee, and acting on the advice of the City solicitor, it was resolved to take further legal opinions on the matter before finally deciding as to the course which should be adopted with regard to the existing contracts. The Court then proceeded to discuss at great length recommendations of the Streets Committee suggesting that evidence should be tendered on the part of the Corporation at the adjourned Board of Trade City electric lighting inquiry, and that the Board of Trade should be advised against granting more than one provisional order for the supply of electric light in the City. The report of the committee further recommended that if the Board of Trade should be advised to allow competition in the City, the Corporation should have the right to purchase upon terms the whole of the undertaking, whether within or without the City, and that safeguards should be enforced for the purpose of preventing an amalgamation of the competing companies. The report was agreed to, with the exception of that portion which recommended only one provisional order for the City, and in regard to this it was resolved, in view of the opinion of counsel, to advise that no preference ought to be given to one company over another.



# Surveying and Sanitary Notes.

**Street Widening in Leeds.**—Holbeck Lane is to be widened, and a new street constructed from it to Springwell Road.

**Ardrossan Drainage Scheme.**—The Ardrossan Commissioners have agreed to adopt a scheme which will carry the main drainage outlet from Montgomerie Pier to a point outside the harbour. This will cost about £3,400.

**Proposed Shambles at Arbroath.**—The sub-committee of the Cleansing Committee of the Police Commission of Arbroath has decided to advertise for competitive plans for new shambles.

**Ilkeston Requirements.**—The Ilkeston Town Council having applied to the Local Government Board for permission to borrow £4,630 for improvements in Bath Street, and £450 for the construction of an underground sanitary convenience in the Market Place, Inspector Robert H. Bicknell, attended at the Town Hall recently to inquire into the circumstances. The Town Clerk explained that £3,730 was required for the purpose of widening the street adjoining premises No. 155, Bath Street, and £900 for improvements at the south end of the street, near the Market Place. With respect to the £3,730, the price given for the property

was £2,775, the proposed alteration to the premises was estimated to cost £565, and there were premises in the rear which would have to be rebuilt in order that the property might be put in a complete condition, the expense of this being £350; the footpath in front would cost £12 7s. 6d., and the legal expenses would be £25, making a total of £3,727 7s. 6d.

**The City Engineer's Annual Report** to the Corporation states that the length of new sewers constructed in London during the year was 137ft., and the number of houses drained, 176. Negotiations had been continued to acquire the various interests in the premises required for the widening of the southern side of Fleet Street. Several claims had been settled, and one frontage set back to the new line. The remaining claims were ready for settlement. The premises 19 and 20, Fleet Street, nearly opposite St. Dunstan's Church, being about to be rebuilt, a favourable opportunity occurred for widening Fleet Street at its western end, and the London County Council had agreed to contribute £20,000 towards the cost; this the Corporation had accepted. The improvement at the western end of Cheapside had occupied attention, and many interests had been acquired. All remaining claims were under negotiation. The London County Council had declined to contribute to the widening of London Wall, on the ground that the land in Finsbury Circus, &c., having realised a higher price than it would have otherwise fetched owing to the intended widening, the Corporation were not entitled to compensation. With regard to the large area destroyed by the great fire in Cripplegate, when three and a half acres were demolished, the Corporation gave

great attention to the question of effecting improvements. Many schemes and estimates for widening the existing thoroughfares and for forming new streets were prepared, but the London County Council had declined to contribute towards any of them. Failing to obtain any contribution from the London County Council, the Corporation, considering that any improvement, if carried out, would be of a metropolitan and not a local nature, did not feel justified in proceeding by themselves. The result had been that the properties on the site had been rebuilt on the old lines of frontage, and no improvement effected. An arrangement had been made for widening Lothbury on the south side between Prince's Street and the Old Jewry. The London County Council had agreed to contribute one-third of the cost of making the street 50ft. wide. The Corporation were forming a new street between Fenchurch Street and Crutchedfriars—40ft. wide, the owner of the land paying £6,000 towards the cost—and, on the invitation of the London County Council, were contributing one-half the cost of widening Mansell Street, one of the direct approaches to the Tower Bridge. The price paid to the Gas Light and Coke Company for public lighting had been 2s. 3d. per 1000 cubic feet. As regarded the electric light, 502 arc lamps were being used, but the question of lighting the side streets by electricity was still under consideration. The number of defective lamps observed was 886, for which the company was fined in each case. On the application of the Drinking Fountain Association, the whole of the cattle troughs and drinking fountains belonging to them within the City were transferred to the Corporation, who had undertaken to maintain them.

## COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—			
April 21	Applegarth, Richmond, Yorks.—Addition to Farmhouse	British Co-operative Society	Clark and Moscrop, Architects, Darlington.
" 21	Barnsley—Store and House	"	G. Moxon, 26, Church-street, Barnsley.
" 21	Dewsbury—Semi-detached Villas	"	J. L. Fox, Architect, Bond-street, Dewsbury.
" 21	Manchester—Bandstand	Parks, &c., Committee	Cily Surveyor, Town Hall, Manchester.
" 21	New Tredegar, Mon.—Alterations to House	J. Price	H. Sketch, Architect, New Tredegar.
" 21	Stockton-on-Tees—Alterations, &c., to Schools	School Board	T. W. F. Richardson, 57, High-street, Stockton.
" 21	Halifax—Rebuilding, &c., Church	St. Paul's Spiritual Church	W. G. Gray and Sons, 28, George-street, Halifax.
" 21	Seacombe, Cheshire—Church Works	Welsh Congregational Church	Secretary, 125, Brighton-street, Seacombe.
" 22	Chinley, near Chapel-en-le-Frith—Hospital Buildings	High Peak Hospital Committee	W. R. Bryden, 1, George-street, Buxton.
" 22	Melksham—Two Shops	H. White	H. Brakespear, High-street, Corsham, Wilts.
" 22	Bexhill, Sussex—Three Cottages	East Sussex County Council	F. J. Wood, County Surveyor, County Hall, Lewes.
" 22	Malpas, near Truro—Pair of Cottages	E. and R. Burley	W. Swift, 38, Lemon-street, Truro.
" 22	Morecambe—Cottage	T. Woodhouse	A. L. Lang, 12a, Pedder-street, Morecambe.
" 22	Crossgar, Ireland—Dwelling-house	W. Hutton	F. W. Lockwood, 16, Waring-street, Belfast.
" 23	Leeds—Warehouse	Pilkington Bros., Ltd.	T. Winn, 92, Albion-street, Leeds.
" 23	Reigate—Isolation Hospital	Town Council	W. H. Prescott, Market Hall, Redhill.
" 24	Bourne, Lincs.—Alterations to House	W. North	F. G. Shilcock, Architect, Bourne.
" 24	Drumin, Scotland—Dwelling-houses, &c.	Lancs. & Yorks. Rly. Co.	— Skinner, Factor's Office, Drumlin.
" 24	Low Moor—Alterations to Passenger Station, &c.	Union Guardians	Engineer, Hunt's Bank, Manchester.
" 24	Runcorn—Shed	R. Deuchar	The Master, Workhouse, Dutton.
" 24	Low Buxton, near Alnwick—Farmstead	Croydon and Lambeth Library Authorities	M. T. Wilson, Architect, Alnwick.
" 24	Upper Norwood—Public Library	Gasworks Committee	E. Haslehurst, 7a, Laurence Pountney Hill, E.C.
" 25	Oldham—Erect House, Chimney, &c.	School Board	Gas Offices, Greaves-street, Oldham.
" 25	Walthamstow—Enlargement of Workshop	County Council	W. A. Longmore, Bridge Chambers, Hoe-st., Walthamstow.
" 25	Hereford—Bridge Repairs	"	A. Dryland, County Surveyor, Shirehall, Hereford.
" 25	Horbury—Chapel and School	Lancs. and Yorks. Railway Company	W. H. Dinsley, Architect, Chorley, Lancs.
" 25	Liverpool—Extension of Goods Station, &c.	Sir V. Caillard	Engineer, Hunt's Bank, Manchester.
" 25	Trowbridge—Alterations, &c. to House	United District School Board	W. H. Stanley, Architect, Market House-chas. Trowbridge.
" 25	Harrow—Enlarging School	Commissioners of H.M. Works	Houston and Houston, 5, York-buildings, Adelphi, W.C.
" 25	Hyde, Manchester—Post Office	Leeds Industrial Co-operation Society Ltd.	Offices, Storey's Gate, Westminster, S.W.
" 25	Ilkley—Stores	"	J. W. Fawcett, 10, Albion-street, Leeds.
" 26	Crewe—Liberal Club Premises	St. Mary's Vestry, Islington	W. Sugden and Sons, Architects, Leek.
" 26	London, N.—Shelters, &c.	Council	J. P. Barber, Surveyor, Vestry Hall, Upper-st., Islington, W.
" 26	Poole—Alterations, &c. to Public Baths	Hackney Union Guardians	J. Elford, Borough Surveyor, Poole.
" 26	London, E.C.—Taking-down and Rebuilding Walls	Donegal Railway Company	W. A. Finch, 76, Finsbury-pavement, E.C.
" 26	Londonderry—Station Houses	Metropolitan Asylums Board	J. Barton, Engineer, Exchange-buildings, Dundalk.
" 26	London, S.E.—Alterations to Boiler House, &c.	Weybourne U. D. School Board	C. S. Peach, 23, Victoria-street, Westminster.
" 27	Kelling, near Holt, Norfolk—Enlarging School	Bersham School Board	F. Andrews, Clerk, Holt, Norfolk.
" 27	Rhosyllen, Wales—Infant School	"	T. Bury, Clerk, Regent-street, Wrexham.
" 27	Workington—Semi-detached Villas	Corporation	W. G. Scott & Co., Architects, Victoria-blds., Workington.
" 27	Brighton—25 Artizans Dwellings	Corporation	F. J. C. May, Borough Engineer, Town Hall, Brighton.
" 28	Barrow-in-Furness—School, &c.	School Board	Woodhouse and Willoughby, 100, King-street, Manchester.
" 29	Halifax—Schools	Corporation	W. C. Williams, 29, Southgate, Halifax.
" 29	Chester—Public Baths	County Council	Douglas and Minshall, Architects, Abbey-square, Chester.
" 29	Prudhoe, Northumberland—Police Station	"	J. Cresswell, Architect, Moot Hall, Newcastle-on-Tyne.
" 29	Ynysybwl, Wales—Public Hall	"	J. Rees, Architect, Hillside Cottage, Pentre, Pontypridd.
May 1	Gwbert-on-Sea—Hotel Wings	"	C. Morgan-Richardson, Cardigan.
" 1	Lisburn, Ireland—4 Dwelling-houses	H. G. Larmour	H. Hobart, Architect, Dromore, County Devon.
" 1	Southampton—Stables, Police Cottages and Cells	County Council	W. J. Taylor, County Surveyor, The Castle, Winchester.
" 1	Paddington, W.—Reconstruction of Bridge	Vestry	C. Weston, Vestry Hall, Harrow-road, W.
" 1	Breamore, Hants—Bridge Works	County Council	W. J. Taylor, County Surveyor, The Castle, Winchester.
" 5	Alcarr, near Liverpool—Royal Naval Reserve Buildings	Admiralty Works Department	Director, 21, Northumberland-avenue, W.C.
" 6	Halifax—Schools, &c.	School Board	W. C. Williams, 29, Southgate, Halifax.
" 6	Gloucester—School, &c.	School Board	P. Cooke, 9, Berkeley-street, Gloucester.
" 6	Brecon—Concrete Wall, &c.	County Council	H. E. Thomas, Clerk, County Hall, Brecon.
" 8	Darlington—Electric Lighting Station	Corporation	Borough Surveyor, Town Hall, Darlington.
No date.	Norwich—Seven-storey Factory	A. J. Caley and Son, Limited	E. Boardman and Son, Queen-street, Norwich.
"	Bristol—Offices	Prudential Assurance Company	A. Waterhouse and Son, 20, New Cavendish-street, W.



COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—</b>			
April 21	Hereford—Steam Road Roller ... ..	Rural District Council ... ..	T. Llanwarne, Clerk, Hereford.
" 21	Sunderland—Electric Lighting ... ..	Union Guardians ... ..	W. and T. R. Milburn, 20, Fawcett-street, Sunderland.
" 23	Port Louis, Mauritius—Electric Lighting ... ..	Corporation ... ..	Agent-General for Mauritius, 9, Idol-lane, City.
" 24	Perth—Railway ... ..	Locheanhead, St. Fillans, and Comrie Railway Co. ... ..	Crouch and Hogg, 175, Hope-street, Glasgow.
" 24	Ashton-under-Lyne—Sluices, Valves, &c. ... ..	Corporation ... ..	J. T. Earnshaw, Surveyor, Town Hall, Ashton-under-Lyne.
" 24	Lipney, Clackmannanshire—Reservoir and Filters ... ..	County Council ... ..	W. R. Copland, 146, West Regent-street, Glasgow.
" 24	Reigate—Steam Conduit, Laundry Machinery, &c. ... ..	Town Council ... ..	W. H. Prescott, Borough Surveyor, Market Hall, Redhill.
" 24	Troon, Scotland—Concrete Sea Wall ... ..	Commissioners ... ..	J. & H. V. Eaglesham, Engineers, Wellington-chbrs., Ayr.
" 25	London, E.—Electric Plant ... ..	Poplar Board of Works ... ..	L. Potts, 117, High-street, Poplar, E.
" 25	London—Alterations at Pumping Station ... ..	County Council ... ..	Engineer's Department, County Hall, Spring Gardens, S.W.
" 25	Erith, Kent—Overhead Traveller ... ..	London County Council ... ..	Engineer, County Hall, Spring-gardens, S.W.
" 25	West Ham—Engines, Alternators, and Exciters ... ..	Town Council ... ..	Borough Electrical Engineer, Abbey Mills, West Ham.
" 25	Kingston-on-Hull—Electric Lighting School ... ..	School Board ... ..	D. J. O'Donoghue, Board's Offices, Albion-st., Hull.
" 25	Tyldesley, Lancs.—Firebricks, Clay, Retorts, &c. ... ..	District Council ... ..	C. Austin, Manager of Gasworks, Tyldesley.
" 26	London, S.E.—Boilers, Steam Pipes, &c. ... ..	Metropolitan Asylums Board ... ..	T. D. Mann, Clerk, Norfolk House, Norfolk-street, W.C.
" 26	Donegal—Stations, &c. ... ..	Donegal Railway Company ... ..	J. Barton, Engineer, Exchange-buildings, Dundalk.
" 27	Gravesend and Milton—Engines, Pumps, &c. ... ..	Waterworks Company ... ..	J. Mansergh, 5, Victoria-street, S.W.
" 28	Launceston—Reconstructing Bridge ... ..	Broadwoodwider R. D. Authorities ... ..	C. G. S. Acock, County Council Surveyor, Totnes.
" 28	Mansfield—Purifiers, &c. ... ..	Corporation ... ..	A. Graham, Engineer, Gasworks, Mansfield.
May 1	Reigate—Electric Lighting Plant ... ..	Town Council ... ..	F. Hastings, 13, Victoria-street, S.W.
" 1	Merthyr Tydfil—Sewage-straining Tanks, &c. ... ..	Urban District Council ... ..	T. F. Harvey, Engineer, Town Hall, Merthyr Tydfil.
" 1	Morecambe—Structural Steel Work of Tower ... ..	Tower Company Limited ... ..	R. T. G. Read, 1, Great Chapel-street, Westminster.
" 1	New Ross and Waterford—Railways ... ..	Dublin, Wicklow, & Wexford Rly. Co. ... ..	M. F. Keogh, Secretary, Westland-row Station, Dublin.
" 2	Perth, Western Australia—Electric Lighting Concession ... ..	City Council ... ..	Agent-Generals for Western Australia, 15, Victoria-st., S.W.
" 2	Clacton-on-Sea—Filter Beds at Waterworks ... ..	Urban District Council ... ..	J. Taylor, Sons, and Santo Crimp, 27, Gt. George-st., S.W.
" 2	Abercynon, Wales—Steel-ropes Suspension Footbridge.. ... ..	Mountain Ash Urban District Council ... ..	J. Williams, Surveyor, Town Hall, Mountain Ash.
" 8	Epsom—Electric Lighting Plant ... ..	Urban District Council ... ..	W. C. C. Hawtayne, 9, Queen-street-place, E.C.
" 15	Egremont, Cheshire—Gas-holder, Tank, &c. ... ..	Wallasey Urban District Council ... ..	J. H. Crowther, Engineer, Great Float, near Birkenhead.
" 17	London, E.—Construction of Wells, &c. ... ..	Poplar Union ... ..	E. J. W. Stevens, 34, Victoria-street, S.W.
" 18	Egremont, Cheshire—Gas-holders ... ..	Wallasey Urban District Council ... ..	J. H. Crowther, Engineer, Great Float, near Birkenhead.
" 18	London, N.W.—Electric Lighting Plant ... ..	St. John's Vestry, Hampstead ... ..	A. P. Johnson, Vestry Clerk, Vestry Hall, Hampstead, N.W.
June 30	Shanghai—Tramway Concession ... ..	Municipal Council ... ..	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
<b>IRON AND STEEL—</b>			
April 24	Ashton-under-Lyne—Cast-iron Pipes, &c. ... ..	Corporation ... ..	J. T. Earnshaw, Surveyor, Town Hall, Ashton-under-Lyne.
" 24	London, E.C.—Railway Stores ... ..	Bombay, Baroda, and Central India Railway Company ... ..	T. W. Wood, Secretary, 45, Finsbury-circus, E.C.
" 24	London, E.C.—Bridge Work, Stores, &c. ... ..	Burma Railways Company Limited ... ..	Offices, 76, Gresham House, Old Broad-street, E.C.
" 24	Egremont, Cheshire—Pipes, Meters, &c. ... ..	Wallasey Urban District Council ... ..	Gas and Water Engineer, Great Float, near Birkenhead.
" 25	Stratford, Manchester—Iron and Steel, Pipes, &c. ... ..	Gas Company ... ..	H. Kendrick, Gas Engineer, Gas Works, Stratford.
" 25	London, S.W.—Underframes, &c., for Dining Saloons... ..	Secretary of State for India in Council... ..	E. G. Burls, Director-General of Stores, India Office, S.W.
" 25	Burnley—Cast-iron Floor Plating ... ..	Gas and Electricity Committee... ..	W. R. Wright, Borough Electrical Engineer, Burnley.
" 26	Glasgow—Various Goods ... ..	Corporation Tramways ... ..	J. Young, 88, Renfield-street, Glasgow.
" 26	Amsterdam—Ironwork for Light Railway Bridges ... ..	Ministry for the Colonies ... ..	—Nyhoff, Publisher, The Hague.
" 29	Ealing—Name Plates ... ..	Urban District Council ... ..	C. Jones, Engineer, Public Buildings, Ealing.
May 3	Watford—Iron Pipe Sewers, &c. ... ..	Urban District Council ... ..	D. Waterhouse, 14, High-street, Watford.
" 8	London, S.E.—Railings, Gates, &c. ... ..	County-Council ... ..	Architect's Department, 13, Spring-gardens, S.W.
<b>PAINTING AND PLUMBING—</b>			
April 24	London, S.W.—Plumbers' Fittings, Paints, &c. ... ..	County Council ... ..	Clerk, County Hall, Spring-gardens, S.W.
" 25	Manchester—Painting Seven Libraries ... ..	Libraries Committee ... ..	City Surveyor, Town Hall, Manchester.
May 8	London, S.W.—Painting Bandstands, &c. ... ..	County Council ... ..	Architect's Department, 13, Spring-gardens, S.W.
<b>ROADS AND CARTAGE—</b>			
April 21	Ashford, Kent—Broken Granite ... ..	Urban District Council ... ..	W. Terrill, Surveyor, North-street, Ashford.
" 21	East Molesey—Materials, &c. ... ..	Urban District Council ... ..	Surveyor, District Council Office, East Molesey.
" 22	Batley, Yorks.—Street Works ... ..	Town Council ... ..	O. J. Kirby, Borough Surveyor, Market Place, Batley.
" 22	Cardiff—Roads and Sewers ... ..	Corporation ... ..	W. Harpur, Borough Engineer, Town Hall, Cardiff.
" 24	Long Ashton, Bristol—Works and Materials ... ..	Rural District Council ... ..	J. Hawkins, District Surveyor, Brockley, Bristol.
" 24	Morley, Yorks.—Paving and Flagging ... ..	Borough ... ..	W. E. Putnam, Borough Engineer, Town Hall, Morley.
" 24	Runcorn—Granite Macadam ... ..	Rural District Council ... ..	J. Ashton, Clerk, Runcorn.
" 24	Thakeham, Sussex—Materials ... ..	Rural District Council ... ..	A. F. Mant, Clerk, Storrington.
" 24	Waterloo, Lancs.—Street Works ... ..	Urban District Council ... ..	F. S. Yates, Surveyor, Town Hall, Waterloo.
" 25	Felixstowe—Making-up Roads ... ..	Urban District Council ... ..	Surveyor, Town Hall, Felixstowe.
" 25	Hambledon, Guildford—Materials, &c. ... ..	Rural District Council ... ..	G. Lintott, Surveyor, Cranleigh.
" 25	London, N.—Wood Paving ... ..	Stoke Newington Vestry ... ..	E. Brown, Surveyor, Offices, 126, Church-street, N.
" 25	Winford, near Bristol—Widening Road ... ..	Long Ashton Rural District Council ... ..	J. Hawkins, District Surveyor, Brockley, near Bristol.
" 26	Twickenham—Materials ... ..	Urban District Council ... ..	F. W. Pearce, Surveyor, Town Hall, Twickenham.
" 26	Hull—Tramway Street Works ... ..	Corporation ... ..	A. E. White, City Engineer, Town Hall, Hull.
" 26	Hertfordshire—Cartage, Materials, &c. ... ..	County Council ... ..	U. A. Smith, 41, Parliament-street, Westminster, S.W.
" 26	Neston, near Chester—Team Labour ... ..	Urban District Council ... ..	Surveyor, Town Hall, Neston.
" 29	Hellingly, Sussex—Road ... ..	East Sussex County Council ... ..	F. J. Wood, County Surveyor, County Hall, Lewes.
May 1	London, W.—1,260,000 Creosoted Yellow Deal Bricks... ..	Paddington Vestry ... ..	Surveyor, Vestry Hall, Harrow-road, W.
" 1	London, S.E.—Tar Paving Materials ... ..	County Council ... ..	Parks Department, 9, Spring-gardens, S.W.
" 2	Haywards Heath, Sussex—Road Works ... ..	Urban District Council ... ..	E. Waugh, Clerk, Bolto-road, Haywards Heath.
" 3	London, S.W.—Road Making and Paving... ..	Fulham Vestry ... ..	C. Botterill, Town Hall, Walham-green, S.W.
<b>SANITARY—</b>			
April 24	Morley—Sewering Road ... ..	Urban District Council ... ..	W. E. Putnam, Borough Engineer, Town Hall, Morley.
" 24	Croston, near Preston—Sewers, &c. ... ..	Burgh Commissioners ... ..	F. E. Dixon, 49, Lime-street, Preston.
" 27	Dalkeith—Cleaning and Watering Streets... ..	Urban District Council ... ..	T. Sturrock, Clerk, Dalkeith.
" 27	Tring, Herts.—Sewers, &c. ... ..	Urban District Council ... ..	J. J. Taylor, 1, Victoria-street, Westminster.
" 28	Gorton, Lancs.—Sewering ... ..	Urban District Council ... ..	C. J. Lomax, 37, Cross-street, Manchester.
" 29	Haslingden—Materials for Outfall Sewerage Works ... ..	Outfall Sewerage Board ... ..	H. L. Hinnell, 41, Corporation-street, Manchester.
" 29	Garlands, near Carlisle—Drainage Works... ..	Asylum Committee of Visitors ... ..	J. Little, Sanitary Engineer, Viaduct-chambers, Carlisle.
May 1	Mountain Ash, Wales—Sewers ... ..	Urban District Council ... ..	J. Mansergh, 5, Victoria-street, Westminster.
" 1	Darenth, near Dartford—Sanitary Appliances at Asylum ... ..	Metropolitan Asylums Board ... ..	T. D. Mann, Norfolk House, Norfolk-street, Strand, W.C.
" 9	Mortlake—Lime... ..	Richmond Main Sewerage Board ... ..	W. Fairley, Engineer, Works, Mortlake.
" 12	Johannesburg—Sewerage Scheme ... ..	.....	Town Engineer, Johannesburg.

COMPETITIONS.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
April 24	Arbroath—Infectious Diseases Hospital ... ..	£20, £15, £10 ... ..	W. F. Macintosh, Clerk to Arbroath Burgh Commissioners.
" 29	Frome—School of Science and Art ... ..	£25, £10 ... ..	Urban District Council.
" 30	Ramsgate—Concert Hall, Reading Room, Lavatories,&c. ... ..	£50, £20, £10 ... ..	T. G. Taylor, Surveyor, Broad-street, Ramsgate.
May 1	Dover—Pier Concert Pavilion... ..	£25 ... ..	Promenade Pier and Pavilion Company Limited.
" 1	Stockton-on-Tees—Market Hall ... ..	£25, £15, £10 ... ..	Corporation.
" 9	Salford—Laying-out Site of Barracks ... ..	£30, £20, £10 ... ..	Corporation.
June 1	Leeds—Market Hall and Shops ... ..	£150, £100, £50 ... ..	Corporation.
" 3	Leeds—Kursaal ... ..	£150, £100, £75 ... ..	Corporation.
" 27	Edinburgh—County Buildings ... ..	£100, £50 ... ..	Midlothian County Council.
No date.	London, S.W.—Public Baths ... ..	£157 10s., £78 15s., £52 10s. ... ..	Commissioners of Fulham Public Baths and Washhouses, Town Hall, Walham Green, S.W.



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Thursday, April 20th	Thursday, August 3rd
Thursday, May 18th	Thursday, October 19th
Thursday, June 8th	Thursday, November 23th
Thursday, July 13th	Thursday, December 14th

Sales will be held on other dates as required. In all cases Messrs. Trollope will be glad to have as long notice as possible respecting any property they may be instructed to offer by auction.

Forthcoming Sales for the Year 1899.

MESSRS. E. and H. LUMLEY (Lumleys, of St. James's House, 22, St. James's-street, London, S.W.) beg to announce the following days of SALE by AUCTION, for the forthcoming year, at the Mart, Tokenhouse-yard, E.C.; but, in addition, other dates can be arranged for special sales. Terms on application.

Tuesday, April 25th	Tuesday, Aug. 15th
Tuesday, May 23rd	Tuesday, Sept. 12th
Tuesday, June 6th	Tuesday, Oct. 17th
Tuesday, June 20th	Tuesday, Nov. 14th
Tuesday, July 4th	Tuesday, Nov. 28th
Tuesday, July 18th	Tuesday, Dec. 12th.

Messrs. E. and H. Lumley announce in the advertisement columns of the "The Times" on Saturdays a complete list of their sales, which will include estates in England, Ireland, and Scotland, town and country properties, ground-rents, reversions, gas and water shares, stocks, &c. In cases where property is to be included ample notice should be given in order to insure due publicity.—St. James's-house, No. 22, St. James's-street, S.W.

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## An Architectural Causerie.

**"Why Can't You Let it Alone?"**

WHEN the Queen's first Prime Minister, Lord Melbourne, uttered that peevish query, he was criticising the action of Reformers unnecessarily tinkering at the Constitution of the realm, and he echoed the sentiments of many worthy citizens who saw in the tactics of amateur politicians nothing save a fussy and childish thirst for change, for the sake of change alone. It was, perhaps, most fortunate for his peace of mind that Lord Melbourne was gathered to his fathers, in the early days of that dawning Era of Unrest which has uprooted so many ancient landmarks, and is known humorously as the "Age of Progress"; for our rulers, greater or lesser, through the whole gamut of Government, from Imperial Parliament, through the County Councils, down to Corporations, Vestries, and Rural Councils, have long since forgotten the beautiful art of "letting it alone." It would be possible to preach a very eloquent lay sermon on the quite unnecessary fads, experiments, and alterations that have been, and are being made, in all manner of things; from the municipal common lodging-houses of London, and the rate-aided workmen's dwellings of experimentalising provincial towns, down to the latest piece of man-millinery devised by the wiseacres of the War Office for the clothing of the "thin red line." This, however, is scarcely the place for such an excursion in criticism. The occasion for these remarks is a much more simple, though not less important, issue. Let us state the facts. A year ago, or thereby, died an admirable lady, a member of the Royal Family, and one respected for her interest in charitable and philanthropic affairs. The Duchess of Teck, thus suddenly cut off, took a leading part in such things. She did not, as many suppose, contribute to those objects out of her own purse, but she endured and cultivated the acquaintance of those snobs who are ever ready to contribute largely to any scheme, good or ill, so long as their subscriptions bring them into bowing acquaintance with Royalty. The fact works prettily when Royalty interests itself in works of benevolence, and when Royalty dies, then the good it did sometimes lives after it in the shape of memorial almshouses, and the like. The Duchess of Teck was a well-known figure at Richmond. The local tradesmen remember her keenly, and so do the local toadies and tuft-hunters. It is these latter who have raised money to erect a memorial drinking fountain to her in what they are pleased to call that "Royal Borough," and thereby hangs the thread of this discourse. The view from Richmond Hill is world-famed. From it, and from the Terrace, the eye ranges over a panorama of pasture, wood, and water, unrivalled in the Home Counties. Some

years ago the Corporation of Richmond purchased the Duke of Buccleuch's estate here, to prevent building and to preserve the famous view for all time, and only last year the local authorities defeated a scheme for an electric tramway along this very terrace, solely on the plea that it would injure what the committee of butchers, bakers, and candlestick-makers, who sit on such subjects at Richmond, grandiloquently term the "amenities" of the place. Yet these are the very people who will not "let it alone," and who have for the past month been trying to select a site for the Duchess of Teck Memorial here. A wooden model has been temporarily placed in every conceivable position on the ridge of the Hill, on trial, and has justly aroused the anger of those residents of Richmond who, not having the peculiarly favoured opportunities for becoming versed in Art enjoyed by the average member of a Town Council, are exceedingly indignant that such a monstrously

find such a tribunal "must make up his mind that when he begins to select that tribunal every possible fault will be found with every selection that he makes, and whatever he proposes it will be pointed out that he has made the worst possible selection that can be thought of." Is there then no restraining force that can be applied to supercilious deans and experimenting decorators? We think there is, and that the force is public opinion. And for that reason we think the action of Lord Wemyss, though it failed in its immediate object will have done much good. Already the expression of public opinion in this very matter has proved to a certain extent effective. The Dean of St. Paul's, having relieved his feelings by administering a snub to the authors of the moderate and courteous memorial we referred to last week, proceeded at once to climb down—if such an expression may, without impropriety, be applied to a Dean. The first step was to accord a cordial reception to a Committee of



YORK STAIRS, THAMES EMBANKMENT. INIGO JONES, ARCHITECT.

funereal thing, resembling one of the familiar cemetery monuments from the Euston Road, should find a place on this spot to cut up the view. So widespread, indeed, is this feeling that probably this really wicked idea will be given up, and those who ought to know better be thus taught a much-needed lesson.

C. G. H.

### The House of Lords and St. Paul's.

THE EARL OF WEMYSS rendered a public service by initiating a debate in the House of Lords last Friday on the subject of the St. Paul's decorations. Lord Salisbury was perfectly right in meeting with a *non possumus* the question addressed to him. It is neither possible nor desirable that any government should constitute itself an arbiter on matters of artistic taste. We do not suppose Lord Wemyss will take up the Premier's challenge, and himself draft a bill for the establishment of a special tribunal to deal with these matters; such an attempt would be beset with difficulties, and would be foredoomed to failure. As Lord Salisbury wittily said: the man who would attempt to

the Royal Institute of British Architects, to whom he stated that the stencil ornament to which so much objection has been taken, is "largely experimental. The second step was to stop the stencilling altogether. Many must have read with pleased surprise the announcement in last Friday's "Times," that the stencilling of the stone surfaces has been stopped, by order of the Dean, until the decoration committee meets early next month. In view of the practically unanimous condemnation of this form of decoration we cannot believe that it will be resumed, more especially as Sir W. Richmond himself is stated to be but ill pleased with the result of his handiwork. As to the larger question touched upon by Lord Wemyss of the preservation of our cathedrals as a whole from the hands of unwise decorators and restorers, there again we shall have to look more and more to an enlightened and instructed public opinion. Our artistic and architectural societies might well exercise greater vigilance in these matters than they do at present, but something also is to be hoped from an increase of artistic appreciation on the part of that much despised person "the man in the street."

H. B. P.



# DESIGNS FOR A COUNTRY HOUSE. PREMIUMS DOUBLED.

The correspondence that has reached us since we first announced our intention of arranging a "BUILDERS' JOURNAL AND ARCHITECTURAL RECORD" COMPETITION, shows that the scheme has aroused a large measure of interest.

Many Architects of standing desire to participate in the Competition, and in order that those who compete may be adequately remunerated, we have decided to

**DOUBLE THE PREMIUMS** Originally Offered.

We, therefore, now announce that Premiums of

**TWENTY GUINEAS, TEN GUINEAS, AND FOUR GUINEAS**

will be awarded for the Three Best Designs for a Country House sent in to this Office in accordance with the Conditions set forth in our last week's issue (page 163).

## A FURTHER DEVELOPMENT

of this scheme—a Competition for the Erection of A VILLA ON THE RIVIERA—will be announced in the

**MAY NUMBER of "THE ARCHITECTURAL REVIEW."**

### On Reflection.

#### A Surveyor's Qualifications.

SOME remarkable proceedings at a recent meeting of the Heath Town Urban District Council are reported in a Wolverhampton newspaper. The Council met to elect a surveyor and inspector of nuisances; the salary was about £120 a year, and three candidates presented themselves. The first candidate (a young fellow of twenty-one) was called into the council room, asked a few unimportant questions, and then dismissed. The second candidate, Mr. Enoch Griffiths, on being asked by one of the councillors how he would test a manhole 36ft. deep before sending a man down, declined to answer on the ground that this was a technical question! Asked how he would test levels, he replied, "the same as any other man would test them." Had he had any experience in an architect's or surveyor's office? No; but he had studied sanitary questions. He admitted that it was the simplest thing in the world to ask him technical questions that he was not qualified to answer; but before he had served the public for a month he should be an expert. The third candidate, apparently, had not the same objections to technical questions, for he answered several satisfactorily. Nevertheless a majority of the Council favoured the grotesque candidature of Mr. Griffiths, who was accordingly elected by seven votes to three. The explanation is very simple: *Mr. Griffiths is a member of the Council.* We do not wonder that one of the three Councillors of Heath Town who do not believe in jobbery protested against the election, and threatened to communicate with the Local Government Board. We hope he will do so.

#### Fires in Tall Buildings.

THE recent fire at the Hyde Park Court Mansions has directed attention in a startling manner to the question of the best means of protecting tall buildings against fire. The best plan undoubtedly is not to build them at all; you cannot build a dwelling-house beyond a very moderate height without a loss of architectural proportion. But that, perhaps, is not the question. Cities are not built, unfortunately, on æsthetic principles. The desire to make every square foot of land yield as much rent as possible is responsible for the hideous "sky-scrapers" of Chicago and New York,

and would no doubt set English builders to work constructing similar monstrosities if the law permitted it. Without going to the American extreme, however, our architects have provided not a few hotels and blocks of residential flats of sufficient height, to make the question of the protection of life from fire in such buildings a very serious one. As was shown at the Hyde Park fire, our fire brigade appliances are not adapted for coping with fires in the upper storeys of "sky-scrapers." It behoves the architects and builders concerned in the erection of tall buildings that are to be used as dwelling-houses to pay the greatest possible attention to their fire-proof qualities. Of course, in the strict sense of the word there is no such thing as a "fire-proof" construction. The best of the materials and processes before the public are only to a greater or less degree "fire-resisting." Nevertheless, some of them are extremely valuable, and thanks to the efforts of the British Fire Prevention Committee, to whose useful testing work we have more than once referred, architects and builders are likely soon to have a mass of absolutely reliable data to guide them in their choice of fire-resisting methods and materials. In this connection it may be useful to mention a recent publication of the Committee, "The Tall Building under Test of Fire," which gives some very valuable and interesting information, illustrated by photographs, on the manner in which certain lofty American buildings have withstood or failed to withstand, the attacks of the fire fiend.

#### The Lame Horse Again.

A CORRESPONDENT, whose letter will be found in the Enquiry Department columns of the present issue, writes to ask us to explain the meaning of the Conditions of Competition issued by the School Board of St. Thomas, near Exeter, for the proposed new Board school at that place. We have been unable to explain the enigmas complained of by our correspondent with any exactness, but any humiliation which that inability may have aroused in the omniscient Editorial mind is cleared away by the perusal of a printed form of "Queries and Answers on Conditions of Architects' Competition," which has just been issued by the School Board, and reaches us as we go to press. By this it seems that the Clerk to the Board who drew the Conditions cannot settle the material issues raised by our correspondent, and to several of the twenty-five enquiries of frantic, tortured competitors, blandly replies: "This

clause might as well be withdrawn," or to that same effect. Yes, my good sir, but why delay this useful suggestion till a fortnight before the drawings are to be sent in? What we should fail altogether to understand (were not our experiences of Architectural competitions extensive and various), is why, when an assessor is appointed he should not be required to draw, or revise the conditions; and why an eminent architect should consent to assess under conditions drawn in a slovenly and ignorant manner. The primal necessity for the advice of an Assessor in this early stage of competitions is well exemplified by the last enquiry on the form to which we have referred. The competitors wish to know whether certain existing boundary walls involved in the design are good enough to serve, or whether they should be rebuilt. To which the Clerk: "These must be answered by the competitors themselves." Yes, my good sir, but St. Thomas is not near Exeter, and Exeter is not the hub of the universe. Do you expect your probable five score would-be competitors to travel severally from Brighton, Nottingham, or Durham on such an errand. An assessor could have supplied this essential piece of information. But although these very usual "Replies to Competitors" reveal frequently enough a lax forethought in the drafting of the conditions, they also exhibit a peddling, nervous attitude on the part of competitors which could never produce a worthy design, and should not exist. To succeed in a competition design is not to succeed in piecing together the requirements of the conditions like the parts of a puzzle. The only just cause for a man to compete, is that he has an idea, and it has been established many times over that the man with a sound idea may over-ride the letter of the conditions, and win success thereby. There is a great uproar when a competitor who has used brown ink instead of sepia (this is the subject of one of the enquiries before us) has his design placed, but if the design be selected for its genuine merit, it is in all interests surely best that this freedom in the interpretation of the conditions should exist. No one knows so much of the possibilities of the site, or plan, as those who make the design, and any limitations and restrictions of the committee or the assessor must in reason be subject to their always imperfect appreciation of the points on which ideas are sought by way of competition. For this reason we would prefer always to see such clauses of the conditions as refer to the design, set forth as suggestions only.





WILTON HOUSE, WILTSHIRE. THE CLASSIC FRONT ONLY BY INIGO JONES.

## SOME NOTES ON THE WORKS OF INIGO JONES.

BY H. INIGO TRIGGS, A.R.I.B.A.

(Concluded from No. ccviii., page 143.)

IN 1626, Jones designed the water-gate of Old York House, which was executed by Nicholas Stone; the gateway still remains in the Embankment Gardens, at the end of Buckingham Street; there has been doubt expressed whether Jones designed this gate, owing to a statement in the account book of works done by Nicholas Stone (Soane Museum) in which he says: "The water-gate att York House, he dessined and built;" by "dessined" he probably meant making working drawings, but judging from the work itself, there can be little doubt that it was designed by Jones, especially as there are drawings of it in existence bearing his name.

In 1620, he was made a member of a commission to enquire into all new buildings erected in London since the beginning of the reign of James I., and to enforce compliance with certain building regulations. He was also a member of a commission formed in 1620 for conducting the repairs of Old St. Paul's.

During one of the Royal Progresses in 1620 Jones was sent for by the Earl of Pembroke at Wilton, and "received his Majesties' commands to produce out of his own practice in Architecture and experience in antiquities whatever he could possibly discover concerning Stonehenge." The result of his inquiries appeared in a folio volume published three years after his death "from some few undigested notes" which Inigo had left behind him, and which Webb, who calls them such, had moulded together for the purpose of publication.

Inigo Jones declared Stonehenge to be a Temple, of the Tuscan Order, raised by the Romans, and consecrated to the god Coelus. One can hardly believe, considering his learning, that these were the actual views held by Jones, although in after years Webb, who was intimately acquainted with him, and should have known his views, thought fit to publish a "Vindication" when Jones' theories were so violently attacked. Probably Jones' position as a courtier, only too willing to uphold and enlarge on the views of the "wisest fool in Christendom," as his Royal master had been called, led him to express such an opinion.

The Chapel of the Infanta, at Somerset House, in the Strand, one of Jones' best works, was destroyed by Sir William Chambers when the present Government offices were erected on

the site of the Protector's palace. The Beaufort House gateway, also about this date, which was given by Sir Hans Sloane to Lord Burlington in 1740, is now at Chiswick House. Lord Burlington was a great admirer of Jones, and gave considerable assistance to Kent, when he published his designs. On either side of the great external staircase of his villa at Chiswick are two statues—the one of Inigo Jones, the other of Palladio, his great master.

Another gateway erected about this time—that to the Physic Garden, Oxford—is often wrongly attributed to Jones; it was designed and executed by Nicholas Stone. There are several buildings at Oxford attributed to Jones, amongst which are the vaulted staircase at Christ Church College, and the garden front to St. John's. The work at Christ Church has been attributed to him, simply because it was reported to have been done by a London architect named Smith; and Peshall, who made this report, is supposed to have been mistaken, and meant Jones.

The work at St. John's was first attributed to Jones by Heylyn in 1688, but there is only a vague tradition that he had anything to do with the building. There is no reference to him in the college books, whereas Lesueur, who made the excellent bronze figures, is mentioned, and it seems hardly likely that Jones, so steeped in Palladianism at this time, could have been responsible for the semi-Flemish detail of St. John's. He was little employed at either Oxford or Cambridge, and it is almost certain that the Christ's College Buildings at Cambridge are not by him.

In 1631 he commenced the Piazza and Church of St. Paul, Covent Garden, for the Earl of Bedford. The Piazza, which was never completed, was carried along the whole of the north and east sides, the church occupied the west side, and a grove of trees the south. The church was not consecrated till September 27th, 1638, when Juxon performed the ceremony.

When the Earl of Bedford sent for Inigo, he told him he wanted a chapel for the parishioners of Covent Garden, but added he would not go to any considerable expense, "in short, he said, I would not have it much better than a barn." "Well, then," replied Jones, "you shall have the handsomest barn in England." The building was of brick, with stone Tuscan columns to the portico, and a red tiled roof. In plan it clearly departed from ancient tradition, being a parallelogram 99ft. long, 48ft. wide, and 38ft. high. The roof was not supported by columns, and the church had galleries on all the four sides. The two disastrous fires which have occurred here have destroyed every vestige of Inigo Jones' work; but it is interesting as being

the first church on the new model of which galleries were to form an important part, and was one of the recognised models of ecclesiastical art in the two or three decades preceding the great fire.

St. Paul's Cathedral was in a sad state of decay, and Inigo Jones, who had been asked some ten years previously to report on the fabric, now joined the commission appointed in 1637 to further report. Both the King and Archbishop Laud were desirous that Jones should rebuild the whole fabric, but from the state of the exchequer this was impossible, and Jones was only able to proceed with the west portico. In considering this design one must not forget that the high gable over the portico was necessitated by the pitch of the nave roof, and on the completion of the whole building he would probably have altered the design. Laud succeeded in raising £101,300, and the works were begun in 1633; and continued until the outbreak of the Civil War, when the balance in hand was annexed by the Parliament. The works had now got as far as the south transept, when they were stopped. In order to improve the approach to the portico, the Church of St. Gregory by St. Paul's was marked out for removal by Jones. This greatly incensed the parishioners, who made every effort to preserve their church, and had the King's affairs been then in a more prosperous condition, he might have gained his point; but the parishioners laid their case before the House of Commons, who referred it to the Lords, adding a declaration that the parishioners deserved redress, and that proceedings should be taken against the King's architect for the demolition he had caused. Jones is accused by the parishioners of saying he would not undertake the repairs at St. Paul's "unless he might be the sole monarch, or have the principality thereof," a harmless charge, but interesting as confirming Jonson's satire.

He first pulled down a portion of the church, and then threatened "that if the parishioners would not take down the rest of it, they should be laid by the heels." The declaration of the Commons brought Inigo Jones before the Lords, when he pleaded not guilty; but the decision was against him, and he had the mortification of seeing his work at St. Paul's stopped, the materials remaining being given to the parishioners to rebuild their church.

In 1636-7 he was employed on the Barber-Surgeons' Hall, but none of his work there remains; most of the woodwork which he designed was sold in 1782. In 1637-8 he designed the choir screen, since destroyed, of Winchester Cathedral, and about this time also designed Shaftesbury House, Aldersgate Street.



The outbreak of the Civil War found other occupations for King and nobles than considering designs for palaces, and Jones, who, especially after the St. Gregory dispute, found London too warm for him, joined the King's forces at Basing House, near Basingstoke. Being now a man of considerable wealth, which he was obliged to hide, he, assisted by faithful Nicholas Stone, buried it in a private place in Scotland Yard; but finding this place too insecure, they removed the valuables once more, and buried them in Lambeth Marsh.

For many years the brave Marquis of Winchester withstood the efforts of the Parliamentarians to reduce Basing House, which was considered impregnable, until at last Cromwell became so incensed that he conducted the siege himself. Peake and Faithorn, the artists, and Hollar, the engraver, together with Inigo Jones, were taken prisoners; the latter, having lost all his clothes, was carried out in a blanket, but he was well treated, as he had a friend in one of the officers of Cromwell's army. For his allegiance to the King he was condemned in 1646 to pay a fine of £545, and a further sum of £500.

country. About 1647 he made additions to Kirby, much on the same lines as at Wilton, and also prepared designs for re-building Durham House, drawings of which, prepared by Webb, are in Worcester College. In the same year he added the west wing, with its great quoins, and projecting eaves to Cranborne Manor. Amongst other domestic buildings are works at Fort Abbey, Colehill, Castle Ashby, Northamptonshire, all of which were interrupted by the Civil War. His latest design was one for re-building the College of Physicians, dated 1657, and marked "not taken."

The latter part of his life is one of disappointment and anxiety. After Basing House, the office of surveyor was taken from him, but that had never been a very lucrative one. He survived most of the companions in art, the great patrons of his early life, and his royal master, who by the irony of fate was executed in front of the noble Banqueting House he had watched being built in his boyhood days.

Jones died, full of grief and misfortune, at Somerset House, in the Strand, June 21st, 1652, and by his own wish was buried in

tion not to be found in his great successor, Wren. He was a man of proud temperament, and commanding in manner, and this may account for the apparent ease with which he swept away the German influence and substituted the Classic styles, which were accepted by the best intelligence of this country for the next 150 years, and after a century's lapse again show signs of revival.

#### LIST OF INIGO JONES' WORKS.

- 1607—12. Charlton House, Kent, built for Prince Henry, west front afterwards by Kneivitt.
- 1607 (?) Bramshill, Berkshire, for Prince Henry.
- 1615—21. Houghton Hall, Bedfordshire, for Countess of Pembroke; porticoes copy of La Carita of Palladio. In ruins.
1616. Dorfield Hall, Cheshire, for Ralph Wilmham.
- 1615—36. Crew Hall, Cheshire; restored 1837, greatly burnt 1866.
- 1618—35. Aston Hall, Warwickshire, for Sir Thomas Holte.
1617. Star Chamber, design and model.
- 1617—23. Lincoln's Inn Chapel (Gothic); open cloister under it, estimated cost £2000.
- 1617—35. Greenwich, Queen's House, to cost £4000; now the centre of the the Royal Naval School.
1618. Lincoln's Inn fields laid out.
- 1619—22. Banqueting House, Whitehall, built for James I.; cost £14,940; restored 1831.
1620. Queen's Street, Lincoln's Inn Fields, and houses on the south side, having fleur-de-lis thereon.
1612. Beaufort House, Chelsea; gateway removed 1740 to Chiswick.
- 1622—23. New-hall, Essex; alterations to modern fashion for Duke of Buckingham, who bought it in 1622; house had cost £14,000 in building.
1623. Queen's Chapel, St. James's.
1625. Catafalque for funeral of James I.
1626. York Stairs.
1629. Holland House, Kensington: Piers to a gateway near the east side, carved by N. Stone. Cost £100.
1630. Rainham Hall, Norfolk, for Sir Roger Townshend.
1631. Covent Garden Piazza, for Duke of Bedford.
- 1631—38. St. Paul's, Covent Garden, Church, for Duke of Bedford. Cost £4500. Jones was present at its consecration.
1632. Sion House, Isleworth: Additions.
1632. Winchester Cathedral: Screen.
1632. Denmark (afterwards Somerset) House: Chapel for Queen Henrietta Maria, who "on Friday, September 20th, at eleven in the forenoon, with her owne handes, helpt to lay the two first square corner stones, with a silver plate of equall dimensions between them."
- 1633—49. St. Paul's Cathedral: Modernization of the transepts and nave and erection of the portico to west front, 200ft. long, 40ft. high, 50ft. deep.
1634. Tomb to Chapman, south wall of the Church of St. Giles's-in-the-Fields. At Jones's expense.
- 1636—37. Barber-Surgeons' Hall, Monkwell Street.
1637. Porch to St. Mary's Church, Oxford; for Dr. Owen, chaplain to Archbishop Land, cost £230, carved by N. Stone.
1639. Whitehall, general designs for new palace.
1640. Ashburnham House, Little Deans' Yard, Westminster; greater part burnt in 1731; two rooms, a staircase, and an alcove remain.
1640. Lindsey House, No. 59, Lincoln's Inn Fields, for Earl Lindsey.
- 1640—48. Wilton, Wiltshire, for Lord Pembroke.
1641. College of Physicians, Warwick Lane; buildings in the rear.



DESIGN FOR THE WEST FRONT OF OLD ST. PAUL'S.

After this stormy passage in his career he resumed work again unmolested, and to this period belongs his work at Wilton. Charles persuaded the first Earl of Pembroke to build the garden front, intending Jones to be the architect, but he being much engaged at this time on Greenwich and other works, suggested De Caux a Gascoigne, who eventually did the work. The buildings were burnt down in 1647, and were rebuilt from the designs of Inigo Jones, under the superintendence of Webb. The only work now remaining by him is the south block, but views preserved at Wilton show his whole design, which consisted of an oblong court and towers at the four corners, raised above the adjacent building. He preserved the sixteenth century gateway-tower on the east side.

De Caux's work on the east façade was allowed to remain. Fire eventually destroyed all Jones' work except the south block, which includes the suite of rooms on the first floor, now remaining much as he left them. The great room, a double cube like the Banqueting House, Whitehall, with a superb mantelpiece and panelling, is one of the finest rooms in this

St. Benet's Church, Paul's Wharf, by the side of his father and mother.

Brympton Manor House, a few miles from Yeovil, was erected during the reigns of Henry VII. and Charles II. The garden front was ascribed to Inigo Jones by Horace Walpole. Whether the work was carried out under the architect's supervision or not is a debateable point; what evidence is obtainable tends to support the theory that Jones only furnished the design, the work being carried out under the superintendence of a pupil. There is some similarity between the garden front of Brympton and that of Hinton St. George (also attributed to Jones), the seat of Earl Poulett, situate not many miles away.

There are two portraits of Jones existing by Vandyck, who was his friend during many years of his life. One of these is now in the National Portrait Gallery.

Inigo Jones was one of the most accomplished architects this or any other country has produced, no man ever mastered more completely the difficulties of his art. He had naturally a wonderful artistic feeling and sense of proportion, together with an imagina-



Slaves to Liberty  
of the  
Library





AN OLD SCOTTISH TOWER AT QUEENSFERRY. DRAWN BY W. BEVAN. (See p. 177).





AN OLD SCOTTISH TOWER AT BURNT ISLAND. DRAWN BY W. BEVAN. (See p. 177).

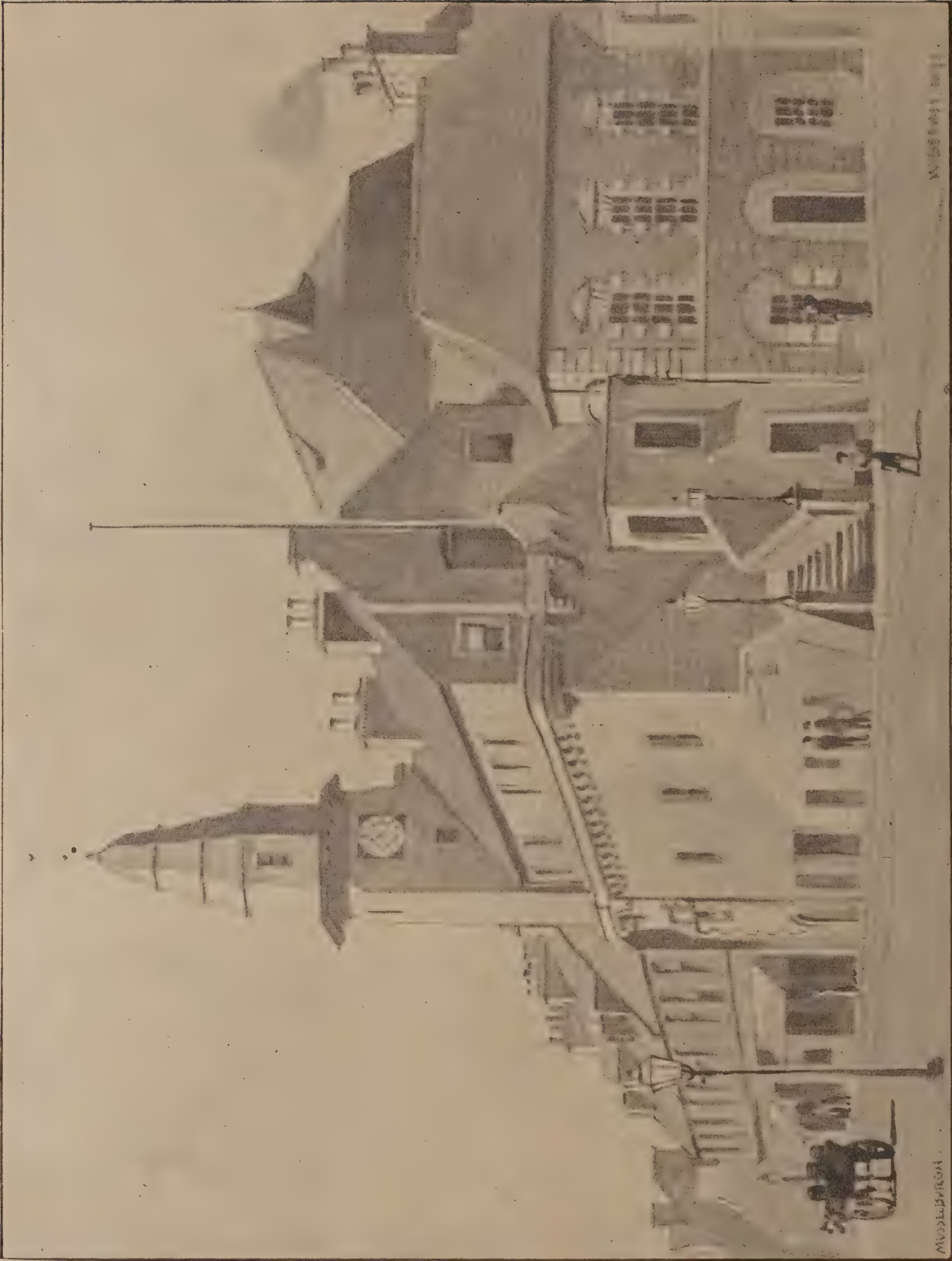


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AN OLD SCOTTISH TOWER AT MUSSELBURGH. DRAWN BY W. BAVAN. (See p. 177).





AMIENS CATHEDRAL. DRAWN BY EDWIN DOLBY. (See p. 181).



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1647. Additions to Kirby.  
 Dates not known. Designs for rebuilding Durham House.  
 " West wing of Cranborne Manor, Coleshill, Berkshire, for Sir M. Pleydell.  
 " Thanet House, 35 and 38, Aldersgate Street, for Earl Thanet.  
 " Burnley-on-the-Hill, Rutlandshire, for Duke of Buckingham, burnt 1645.  
 " Whitehall, Cabinet for the King's pictures.  
 " York House, Strand, for the Duke of Buckingham.  
 " Newmarket, design for a palace.  
 " Windsor Castle, piers.  
 " The Grange, Hampshire, for Lord Chancellor Henley.  
 " Oatlands, Berks, gateway to the old palace, since removed and repaired.

## SOME OLD SCOTTISH TOWERS.

BY BULKELEY CRESSWELL.

(Illustrated by WILLIAM BEVAN.)

THE three curious old towers which are illustrated in our supplement plates, all belong to the neighbourhood of Edinburgh, and quite apart from their historic associations, or their remarkable qualities of the romantic and the picturesque which have been so skilfully presented in Mr. Bevan's clever drawings, they have a peculiar attraction for architects in the quaint and individual architectural character attaching to each. Indeed, this group of towers is in a manner unique. It is essentially local, and it may be described as indigenous, for though there is no question that these designs are due to Dutch influence,

Musselburgh evidently had no shame of her origin, and this is well, for it was by fish also that she came by her clock tower, or "Knock Hoose" (as it was once termed). The clock is dated "1497," and there is evidence to show that it was a gift to the town from the Dutch States; and it is generally supposed that Musselburgh acquired the distinction of a clock, which is now one of the three oldest serviceable turret clocks in Great Britain, by virtue of her herrings. The Dutch, always notorious in the Middle Ages as a maritime nation, were at that time adepts in curing the fish, and it was through following the shoals into Scottish waters that they came to value the good fellowship of Musselburgh folk and woo their favour. A "A Knock Hoose" was a proud distinction to a township in those days.

The "Municipal Buildings," as the block is now called, which include Town Hall, council chamber, town clerk and chamber-



BRYMPTON HOUSE, SOMERSETSHIRE. ASCRIBED TO INIGO JONES.

- " Ascot House, Bucks, "a noble room" for Sir W. Dormer; pulled down 1720.  
 " Cobham Hall, Kent, for Duke of Richmond and Lennox, central portion of front and a ceiling.

**SS. Michael and All Angels' Church, Sheffield,** has just had the chancel paved with black and white marble in memory of the late vicar, the Rev. T. Wilkins; also a marble tablet in his memory, has been executed by Mr. Fred Wilkins, sculptor.

**A New Chapel at Morrision** has been erected for the Welsh Calvinistic Methodists. It is built of native stone, and is 52ft. by 42ft., and has accommodation for 500 persons. The contractors were Messrs. Thomas and Jones, of Morrision, and Mr. W. W. Williams, of Wind Street, Swansea, was the architect.

the respective buildings themselves are the work of the people, and not ascribable to professed students of what, in those days, was considered the anomalous Continental styles.

Musselburgh is a small township now almost merged with Portobello, a suburb of Leith and Edinburgh. It is built near the mouth of the River Esk, and owes its origin and its name to a "broch" or bed of mussels at the mouth of the river, and the urban patriotism which in these days reaches fever heat between the cities of Leith, Edinburgh, and Glasgow, existed also in these early times, for there is an ancient doggerel which, by an ingenious punning on the word "broch," a synonym for a bed or bank, and a burgh or township, ascribes to Musselburgh a greater antiquity and a priority over Edinburgh, thus:—

Musselburgh was a broch  
 When Edinbroch was name;  
 And Musselburgh shall be a broch  
 When Edinbroch's gane.

lain's offices, also constabulary quarters and police station, were not all built at one date. Besides the tower already referred to, the mediæval portion, once used as a gaol, was not built till the end of the sixteenth century. There existed at that time in Musselburgh a religious establishment called the Chapel of Loretto belonging to the Abbey of Dunfermline, and the gaol was built of the material from the chapel, which was pulled down in accordance with the precepts of the Reformation. It is said that pilgrims who were wont to worship at the chapel, after its demolition worshipped at the new gaol in which its stones were incorporated. That portion of the block to the right of the drawing, which is manifestly of a later design, is contemporary with "New" Edinburgh. The date inscribed within the entrance porch is "1773," and the style of the building is similar to that of the Edinburgh city cham-



bers. The material of which the picturesque old pile has been built is that cold grey stone which those who know Edinburgh and its environments learn to love so well. The roofs are slated, and so also is the whole of the old spire—the central and most curious feature of the building. This type of spire—a slated spire tapering at several changing inclinations of pitch, and with a projection of the upper slopes over the lower, forming small eaves, under which a moulding is often put—is the most distinctive and characteristic feature of mediæval towers throughout Scotland, which follow Continental rather than English traditions.

The curious shallow wooden cornice, like a hat-brim, is unusual; but grotesque as it is from a critical architectural standpoint, it has its purpose in the design by covering the weak transition from square to octagon, and no one who has seen it would wish it otherwise. It is the salt of the composition; it draws out its full flavour, and emphasises the individuality which belongs to the whole. It advertises also the origin of the design, but with a candour that is perhaps a little too frank. Musselburgh is not of Holland, indeed, it is very much of Scotland, for the country all about is loaded with historical associations. From the day when Alexander II. camped on the northern bank of the Esk near this spot, and made so brave a front to King John's punitive army that he thought better of his enterprise and beat a retreat, the country round Musselburgh has been continually trodden under the feet of the invading armies of Scotland and England, and several momentous battles have been fought in the neighbourhood. In 1567, Musselburgh saw the first act in the tragic fall of Mary Queen of Scots. It was here that her forces met the army of the confederate nobles, and here, after a day's manœuvring and treating, during which Bothwell—her newly-wed husband and Darnley's murderer—challenged her accusers to a single combat, which the Queen would not permit, she surrendered. Pinkie and Prestonpans were fought close to Musselburgh, the former battlefield being but a mile distant, and Comerell's army camped here after Dunbar. Old Pinkie House, which stands to the east end of the town, once sheltered Charles Edward. Indeed, the whole neighbourhood has been trod by the march of armies throughout history; for this zone of country, lying immediately south of the Scottish capital, saw the departure towards England of invading or defending Scottish armies, and was the approach by which the English forces sought to gain the capital; while, in later troublous times, it was along this coast that the Dutch and French ships held on and off to succour this party, or that, in the cause that held the country under arms for the time being.

Of the Jacobite and Covenanting risings, Musselburgh must have seen much, and the old Knock Hoose seems to convey, in its time withered walls and warped spire, a reminiscence of the scenes of triumph and desperation upon which it has looked forth; and stimulates the imagination to picture the rude, impassioned soldiers who marched out to forward Cromwell's cause, and as readily marched forth to overthrow him when, in his success, he fell away from those principles of liberty for whose advancement they had armed themselves. The grey-green slates which have in places faded almost to the colour of oak shingles; the grey stained and time-scarred walls; the slightly sunken and twisted outline of the roofs; the deep worn thresholds where innumerable mail-shod feet have trod; and the stone door-jambs worn smooth by the recurrent passing touch of the fustian and brocade of many centuries—all these things unconsciously yield their subtle aid in forming a picture of whose charm a man might travel far to find the equal. For the old building has no rival here; there is no other edifice that would usurp its modest dignity. The unassuming dwellings of the townspeople, grey, and of a retiring simplicity, stand all about; and around the wide, irregular-paved market square of the town (which gives an impression as though the houses had fallen back out of rank to make an open space), there is no

obtrusive or garish imposition of modern building craft to mar the harmony and simple completeness of the little Musselburgh town, clustering about its "Knock Hoose," where a bell is still rung morning and evening, in conformity with some custom of long ago.

In the old tower of Queen's Ferry the reader will recognise a close affinity to that just described; like it the design is of Dutch origin. The tower is square, plastered with strong yellow stucco, with worked stone quoins, strings, and dressings. The terminal portion is slated. It is of a later date than the Musselburgh tower, but of the same local and indigenous origin. South Queensferry, with its narrow winding streets and plain-fronted grey stone houses—over which Sir Walter Scott in "The Antiquary," and R. L. Stevenson in "Kidnapped," have cast the glamour of romance—is not attractive to the visitor, save for its interesting historical associations, and a certain particular air about its modern squalor, as though it had an ancestral legacy to be upon that spot, and as though the shabby houses were each an equivalent for others that once occupied their site and mapped and enclosed the crooked dingy street long ages ago. Queensferry is at the narrowest convenient point on the Forth accessible from Edinburgh, and thus it must, from immemorial time, have been a ferry and a wayside halting-place, and the plot of close-clustered houses upon the shore of the Forth, which constitutes South Queensferry, emphasises its origin. The ferry still plies backward and forward from north to south shore of the Forth, but now it is a steam one; the little ship runs to and fro upon its ten furlong voyage, under the shadow of the great Forth Bridge, whose structure almost blots out Queensferry to the casual eye, dwarfs the hills on either shore, and leaps the waters of the Forth, upon which the little steamer laboriously throbs its course, in three giant strides. What would Oliver Cromwell have thought of it had he found it there when he crossed the Forth upon his primitive expedition in 1651? Is it not probable that when he had assuaged the panic in his army, and had collected and reassured his forces, his scorn and horror of all kinds of profanity would have prompted him to return and pull the bridge down?

The last of these towers which Mr. Bevan has drawn, and perhaps the most curious and interesting of them all, is that of the parish church at Burnt Island. It is on the northern side of the Forth, some few miles east of North Queen's Ferry. This church has no parallel in Scotland. Its design differs entirely from that of any other parish church, and it has been supposed that the idea was taken from the North Church of Amsterdam. The church stands on rising ground on the south side of the town, and was built between the years 1592 and 1594 by the inhabitants of Burnt Island. It is square on plan, with buttresses set diagonally at the four corners, and the tower rises from four piers. In this anomalous plan we may trace the reaction against Romish traditions, and the enthusiasm for the new doctrines which John Knox and other pioneers of the Reformation had at that time engrafted among the Scottish people; and so effectually was the arrangement of this building opposed to the ceremonial of the Roman Church that when Archbishop Laud visited Burnt Island in 1633 he was much perplexed and exercised as to where the altar should be put. It was in this church in 1601 that James VI. took those vows as a Covenanter which but a few years after, as King of England, he was to set aside in the interest of that policy which, under later monarchs, bred such bloody deeds of oppression and resolution. Burnt Island, too, saw something of the Jacobite rising of '45, when nearly 4000 Hessian troops encamped near the town. The church accommodates only some 900 persons, and, except for the curious tower, is lacking in architectural interest. The tower itself cannot be considered a successful design. The mind never grows inured to the distressing effect of the heavy stone-work superimposed upon the slated roof, but in its conspicuous position upon the Forth it is a picturesque and well-loved landmark, while as one of the earliest buildings under the first

Covenant it is a monument to an epoch in Scottish history which produced one of the most devoted and whole-hearted struggles for freedom and intellectual liberty which the world has seen.

## Correspondence.

### EFFLORESCENCE ON TILES.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Your enquiry column of last week has an enquiry re the "Efflorescence on Tiles." I think this arises from the cement, and if "Subscriber" will have the tiles washed a few times with soft soap, and, before dry, rubbed over with skim milk, it will not only remove any efflorescence, but will greatly add to the beauty of the tiles, bringing up the colours, and giving a glossed finish to them; in fact, all tile floors are very much improved by this treatment. F. S.

Hull.

### MAKING BLUE PRINTS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—As a further supplement to the information given by G. A. T. M. in your issue of 5th inst., page 133, also by A. D., 19th inst., page 164, the following may be useful to "Bricklayer."

Put 1oz. of citrate of iron and ammonia, 1oz. of red prussiate of potash, and 8oz. of water, into a dark-coloured bottle, and shake well for about ten minutes, when the crystals will be dissolved. Keep this in a dark or shady place when not in use. Lay your piece of unglazed paper *rather strong* on a smooth board, pour a little of the solution into a common plate, and apply a good even coat to the paper with a soft brush; pin the paper to a board by two corners, and stand in a dark place to dry for an hour. This solution will last for several months, giving capital results; this is my experience. The printing and washing can be done as described by G. A. T. M.

JOHN WORNELL.

Wandsworth, S.W.

### WOODEN BEAMS.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—I think the writer of the article on "Wooden Beams" in your issue of April 12th fails to master the subject upon which he ventures to write. Imagine the tentative rule of thumb manner in which he tries to arrive at the section of an ordinary wooden beam. One size must be assumed, he tells us, and if that size happens to work out to a very badly proportioned beam, his only alternative is to try, try, try again.

Although I, in my turn, may be the subject of criticism also, I venture to show him how I should do it.

Suppose a distributed load of 200 cwt. is to be carried safely over a span of 20ft., the ends of the beam being *fixed*, to find the scantling of the beam.

200 cwt. safe distributed load =

100 cwt. safe central load, which, if multiplied by five as factor of safety = 500 cwt. breaking weight in centre.

The depth should be to the breadth as seven is to five, as this gives the strongest beam, therefore  $b = \frac{2}{3}d$

$c = 6$  for fir ends *fixed*.

$l = 20$ ft.

$W = 500$  cwt.

Then:  $W = \frac{c b d^2}{l} = 500 \frac{6 \times \frac{2}{3}d \times d^2}{20}$

$\frac{2}{3}d^3 = \frac{500 \times 20}{6} = 1666.66$

$d^3 = \frac{1666.66 \times 3}{2} = 2500$  (about).

$d = \sqrt[3]{2500} = 13\frac{1}{2}$  in. deep.

$\frac{2}{3}$  of  $13\frac{1}{2}$  =  $9\frac{1}{2}$  in. breadth.

Beam  $13\frac{1}{2} \times 9\frac{1}{2}$ .

D. FORBES SMITH, A.R.I.B.A.  
Kirkcaldy.



## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### BOOK ON ESTIMATING.

To the Editor of THE BUILDERS' JOURNAL.  
BRIDLINGTON.

DEAR SIR,—I should be obliged if you could give me a little advice as regards estimating. I wish to know the proper method of calculating the cost of erecting ordinary villa residences, &c., as regards excavating, concreting, brickwork, joiner work, plastering, painting and glazing, and slating and tiling, &c.

BRICKLAYER.

"Estimating," by George Stephenson, price 6s. 6d., published by B. T. Batsford, 94, High Holborn; London, is a book that will suit your purpose. But the prices in this, as in all other books on the subject, will need to be modified in accordance with the prevailing local prices.

### SANITARY INSTITUTE EXAMS.

To the Editor of THE BUILDERS' JOURNAL.  
PUTNEY.

DEAR SIR,—Can you give me some information on the best books for preparing for the examination for the Sanitary Institute? And what routine or exams. have I to pass to become a member of the Institute? and also a member of the Institute of Civil Engineers?

A. O.

Write to the Secretary, Sanitary Institute (Parke's Museum), Margaret Street, London, W., for the Institute's pamphlet (price 6d.), which contains particulars of exams., old exam. papers, list of Acts with which candidate must be conversant, and much other useful information. There are two exams. held under the S. I.—(a) Inspector of Nuisances; (b) Practical Sanitary Science. The latter part of your question is answered by the reply to "Surveyor," in our last week's issue.

### BOOK ON MEDIAEVAL AND RENAISSANCE ARCHITECTURE.

To the Editor of THE BUILDERS' JOURNAL.  
CARDIFF.

DEAR SIR,—Will you kindly oblige me by letting me know the best book for a probationer of the R.I.B.A. to obtain on the history of Mediaeval and Renaissance Architecture, one of the subjects in the Intermediate Exam.—Yours faithfully, "PROBATIONER."

If you intend to take up the course of examinations to qualify for election as associate of the R.I.B.A., it is essential that you should get a copy of the "Calendar," price 2s. 6d., from the Secretary, R.I.B.A., 9, Conduit Street, Hanover Square, London, W. In the Calendar you will find a list of the books which are suggested as being useful to those intending to take part in the examinations. T. R. Smith's "Gothic and Renaissance Architecture" is a standard book and covers the subjects you ask for.

B. C.

### MEXICAN ARCHITECTURE.

To the Editor of THE BUILDERS' JOURNAL.  
BIRMINGHAM.

DEAR SIR,—Could you inform me through the columns of your estimable paper, why it is that we have no record concerning the style of Architecture found in Mexico, as we read of large and beautiful cities there, even before its inhabitants were conquered by the Spanish?

—Yours truly, A. J. W. B.

You are wrong in supposing there are no records of Mexican Architecture. The subject of the early civilization of Central America has been one which has specially attracted the antiquary and archaeologist. It is incorrect to speak of beautiful cities existing even before the Spanish conquest; for it was the systematised destruction by the Spanish of all relics

of the indigenous races of Mexico that has left so much to be conjectured upon the subject. Under Cortes the native history of Mexico came to an end. The architecture, of which ruined specimens remain, shows high blocks of stone, vast schemes, ingenious adaption of wood forms in stone, and spirited carvings of high decorative merit. In Vol. I. of Fergusson's Handbook you will find some references and comparisons; and other well-known books are: H. H. Bancroft's "Native Races of the Pacific States of North America"; A. Prescott's "History of the Conquest of Mexico." In D. Charney's "Cities and Ruins of America" you will find the most exclusive architectural information.

B. C.

### COMPETITION FOR BOYS' SCHOOL.

To the Editor of THE BUILDERS' JOURNAL.

BRIGHTON.

DEAR SIR,—I shall be greatly obliged if you will kindly assist me as to the meaning of one of the conditions of the competition for a boys' school at St. Thomas's, near Exeter.

Having written to the clerk to the School Board asking for information, I get a reply, that "you must put your own construction upon the conditions." Having exhausted all my friends' (architectural) reasoning and my own I now appeal to you.

The condition referred to is as follows: The accommodation to be provided is for 600 boys (seated at dual desks), on two floors, and arranged as follows:

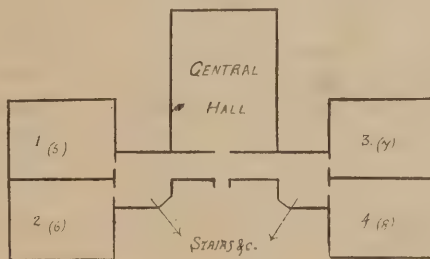
$$2 \times 90 = 180$$

$$4 \times 80 = 320$$

$$2 \times 60 = 120$$

620

What does this table mean? Please note that the total of the table is 620. Although



in the previous paragraph it gives 600, which latter amount is supported by a later clause of the conditions which gives the cost per head the total amount of which works out at 600.

If, as at first glance appears, the first column means classrooms and the second accommodation, then it is altogether contradictory to the educational code (to which the plans are to conform), which states that for classrooms having accommodation for more than sixty, Rule II. (of the code) shall apply. By this rule classrooms are classed as school-rooms, and it is further stated that no school-room that is not lighted from at least three sides can be passed.

Now it is simply impossible to plan a school on two floors with six classrooms each lighted from three sides. A central hall is to be provided. Mr. E. R. Robson, F.S.A., is assessor. Under the circumstances what would you advise?

A COMPETITOR.

From the information you give the conditions would seem not to have been drawn by the assessor but by the clerk to the Board. The table seems to indicate the number of rooms and the accommodation required for each. This shows eight rooms distributed on two floors, and we do not understand your reference to six rooms. Unless there are other restrictions of which you have not told us these eight rooms could be lighted from three sides as indicated in the accompanying sketch. If however you are clearly satisfied that the conditions are incompatible with the code, you should write to the assessor, to the chairman of the Board and the local press, briefly pointing out the absurdity. The discrepancy between the 600 and the 620 need not trouble you. If your plan and elevation please the

Board, neither it nor the assessor would disqualify you on such a narrow margin of accommodation. You can give an alternative price. Use your gumption; if you have a good idea don't let the conditions balk you of it. Remember that conditions state what is wanted not what can always be provided, and very few competitions are unincumbered by some such contradictions and impossibilities as those which appear in this case.

### SIZE OF BEAMS FOR CONCRETE FLOOR.

To the Editor of THE BUILDERS' JOURNAL.

EDINBURGH.

DEAR SIR,—Would you kindly inform me what size of beams would be required to carry a concrete floor over a 16ft. span? Mitchell's "Advanced Building Construction," says at page 336, "for spans of 16ft. opening, about 2in. by 4in. are placed about 2ft. apart from centre to centre," &c. It seems to me that this is too light, as a 2in. by 4in. would sag with its own weight on a span of 16ft., and it would be impossible to have a rigid and level floor. The floor area each beam would have to carry = 16ft. by 2ft. = 32ft., and this at 2cwt. = 3½ tons. Now a 4in. by 2in. will only carry 1 ton. I should be much obliged if you would explain this.—Yours faithfully,

"BREEZE."

Much depends upon the composition and strength of the concrete. Omitting this entirely and taking "Breeze's" calculation of 3½ tons distributed load, the stress becomes (assuming depth of joist at 7½in.):

$$s = \frac{WC}{8d} \text{ by formula} = 10\frac{1}{2} \text{ tons stress in flange.}$$

This would require 2½ square inches of metal in sectional area, so that a joist for this span and load should be about 2½in. by 7in.

### FACTOR OF SAFETY FOR WOODEN BEAMS.

To the Editor of THE BUILDERS' JOURNAL.

NEWMARKET.

DEAR SIR,—Will Mr. Charles W. Tomlinson further explain if in finding the size of beam and taking the factor of safety at 4; he considers this right for a live or dead weight; if dead is it for permanent or occasional load? Some authorities give as little as ½th of breaking weight for safe load? Will this method do for joists, and won't building-in the ends make them carry much more?—Yours faithfully,

J. S. P.

The factor of safety (4) used in the article on Wooden Beams, is suitable for simple dead load. If the beam were liable to a live load the f.s. would of course be higher. Whether the load is permanent or occasional is not taken into account, as no difference would be made in the f.s. as long as the load is dead. As to the high factor of safety (10) mentioned by J. C. P. in Rivington's "Building Construction," Vol. III., a table is given in which 10 is mentioned as a suitable f.s. for cast iron columns, subject to a transverse stress, but I have not heard of 10 being used in the case of beams subject to a common dead load. For joists, &c., 4 is a fair average factor of safety. A beam is usually taken as being merely supported at each end, but if the ends of the beam are solidly built in to the walls it would then become what is called a "fixed beam." In this case Molesworth gives the strength as one and a half times that of the ordinary supported beam.

CHARLES W. TOMLINSON.

### Church Extension at King's Norton.

The completion of Stinchley Church is promised by Mr. T. Smith, the builder, by the end of January, 1900, and the completion of Cotteridge Room by early in May, 1899. £7,462 has now been raised for Stinchley Church, and £2,424 for Cotteridge Room, leaving £400 to £500 still required. The Birmingham Church Trustees have granted £2,500 towards the erection of Cotteridge Church, which is to contain space for 1,000 worshippers. Mr. W. Hale is the architect.



## THE ARCHITECTURAL ASSOCIATION THEATRICALS.

THE ARCHITECTURAL ASSOCIATION held its annual *soirée* last Friday night at St. George's Hall, Langham Place, at which a musical play in two acts, entitled "The Druids' Elect: an Episode of the Ancient Britons," was given. It was written by Messrs. G. B. Carvill and Gervase Bailey, and the music was by Mr. Leonard Butler. On the previous Wednesday evening a dress rehearsal (ladies' night) of the same play had been given.

The principal characters were Lucius de Rougepot, alias Greennus (Archdruid and adventurer, and an excellent caricature of the notorious M. Louis de Rougemont), Mr. H. Passmore; Ashlar and Rubble (ancient Britons, candidates for the Council), Mr. A. Stalman and Mr. G. B. Carvill; Owen Rent (First Druid), Mr. F. Carvill; Rodesius (general in command of the Chartered Company's forces), Mr. F. D. Chapman; Superfinus (a lieutenant), Mr. S. Constanduros; Pennialinus (a correspondent), Mr. G. Bailey; Architopius (an architect), Mr. F. Foster; Coplinus (with the Chartered Company's forces), Mr. J. H. Wilson; Letitia (a Roman lady of uncertain age, betrothed to Superfinus), Mrs. A. Stalman; Ellalyn, Lettilyn, Gwendolen, Gwynne, Lyllien (British maidens), Misses Ada Yerbury, K. Rimell, Blanche Selig, Dolly Jennings, Ethel Atkins; and Blodwen (Ashlar's daughter), Miss Sophie Tyler. The chorus of Druids, Romans, and British maidens, was formed by twenty ladies and gentlemen.

The curtain rose on a scene representing sunrise in an oak forest and the picturesque entrance of a body of Druids. The first Druid referred to an election to the council, owing to the death of the lamented Stucco. There were two candidates for the vacancy, well known and respected architects, Ashlar and Rubble, who came forward with a copy of a professional journal of the time, called "The Antediluvian Advertiser and Neolithic News," which contained an article on the merits of both candidates, each of whom on scanning it found he had an important engagement to keep. The claims were set forth in the following manner: "Ashlar for art; Rubble for Reform. Britons be bold. Back the best builder and beautify Britain." Rougepot, who had been appointed on his own nomination to the post of Archdruid, then came on the scene, carrying a lyre, to the last bars of "The Wearing of the Green." He announced a very startling piece of news, which was to the effect that a party of Romans under Rodesius had landed with the idea of civilising Britain. Archdruid Rougepot then sang a ditty entitled "Limited," which explained the object of "The Roman Chartered Company of Great Britain Limited," and during the singing the rest gently left the stage. Directly after his song was finished Ashlar appeared to consult the Archdruid as to his chances of succeeding at the election, and the cunning Rougepot told of a vision in which he was visited by fifty kings—sovereigns—from the east, and asked Ashlar if he could do the translation; but Ashlar refused to give the bribe. When the ruse was fired on Rubble—although the bait was raised to eighty sovereigns—he promptly gave him the required sum. The Arch one explained that, although he could not influence the election, if Ashlar won the day perhaps he could induce him to retire by announcing that his daughter must be sacrificed to the gods as a thank-offering. This little affair having been satisfactorily settled, they retired, and the British maidens appeared on the scene picking May—during which happy pastime they were surprised by the Romans, and a pretty flirtation between Superfinus and the beautiful Blodwen took place.

The second act depicted sunset outside the council cave, and a chorus of girls sang a "May Day" song, and discussed a project of emigrating to a land where females' rights

would be recognised, in fact, where woman would be ruler, and bragging, cowardly man would only be permitted to live in slavery. Rodesius performed a stone-laying ceremony with an extraordinary trowel about the size of a man, and some curious drawings by Architopius were shown, among which was one of Vauxhall Bridge. One of the characters said, "That's what they call Cyclopean architecture, ain't it?" "No; County Council architecture," was the reply. The Romans informed their British friends that an institute had been formed at Rome for the teaching of elementary architecture, and some funny verses were sung called "The Institute at Rome," of which the following is a specimen:

The students went in four by four; when asked to describe a fireproof floor,  
Said "A thing that falls down on the Salvage Corps"

At the Institute at Rome.

Rodesius sang a song called "Simplicity," and the following is a verse taken from it:—

The art of modern architects is tending towards the plain

We build for Truth and Beauty and not for worldly gain,

If you want to build a house that will the tongues of critics stop,

Put four bare walls with windows like a warehouse or a shop,

And a fat unwieldy drain-pipe from the bottom to the top;

Oh the simple simple-maniac has got us in his claws,

He'll soon dispense with windows, and he'll do away with doors,

We'll return to what we were before the dawn of history's page,

And we'll play the noble savage in the Neolithic age.

After this pleasant interlude, Rougepot dismissed the assembly until the next day, when the sacrifice was to take place. Meanwhile it was decided by Blodwen and Superfinus that they should fly together, but this turned out to be an unnecessary step, as Rodesius came on the scene, and, in a parody on Marc Antony's oration, denounced Rougepot and Rubble, and these two were likely to have been killed by the infuriated Druids, Romans, and Britons if Rougepot had not thrown off his disguise and revealed himself as the long-lost Greennus, Letitia's first love, who disappeared after floating a new diving apparatus, which eventually sank. This revelation saves him, and the result is that everything ends happily.

The whole play was bright and witty, and a perfect success. Every character was word-perfect. The songs by Miss Sophie Tyler and Mr. S. Constanduros, as well as those by the others, were enthusiastically encored in every case. At the conclusion of the play there were loud cries for the authors, who appeared and bowed their acknowledgments. The actors and actresses also responded to calls. Mr. G. H. Fellowes Frynne in a few sentences complimented the actors on the manner in which the play had been performed. He said that he had been asked a question by one who had witnessed the play, and he supposed it was intended as a compliment to the gentlemen who had taken the different characters. The question was, "Why do these gentlemen spend their energies on Architecture?"

**Glasgow Hospital Accommodation.**—At a meeting of the Parish Council of Glasgow, the House Committee submitted a report on proposed extended hospital accommodation, in which it was stated that at present the accommodation available was insufficient. Dr. Bruce submitted a resolution, which was passed, to the following effect: "The House Committee under the remit from last meeting having now reported that new hospital accommodation is desirable, the Council, without committing itself at the present stage to the recommendations of the committee, remits the whole question of indoor accommodation to a special committee of nine members to consider whether a large general hospital, district hospitals, or a combination of both would be best suited to the requirements of the parish, and to report with reasons."

## Views and Reviews.

### AN ELECTRICAL DIRECTORY.

We have received a copy of "The Universal Electrical Directory for 1899," and must say that it fully justifies its title, for as a directory of the members of the electrical and allied industries throughout the world, it seems to be remarkably complete. It is divided into four sections, viz.—British, American, Continental, and Colonial. Each section is devoted to an alphabetical list of electricians and those connected with the trade, and also a classified list of the trades. At the end of the work is a British geographical division, which enables the searcher to find at once the town he desires, and the names of the firms connected with the trade situated there. This is a very useful feature of the book, as is also the incorporation of telegraphic addresses and telephone numbers with the ordinary addresses. The book this year has nearly two thousand more names than that of 1898, and altogether contains the names and addresses of over 25,000 firms. The simplicity of its arrangement, and the low price at which it is sold, should make it the desk companion of all interested in the trades it concerns.

The Universal Electrical Directory (J. A. Berly's), 1899. Price 6s. London: H. Alabaster, Gatehouse, and Co.

### THE DOWDESWELL GALLERY.

The exhibition of works by Elihu Vedder the honoured American artist, remains open until the third of next month, and it is hoped that many will see it. The special attraction, because "Omar" is so much talked of at present, is doubtless the collection of drawings which went to the making of the first illustrated edition of Fitzgerald's immortal quatrains, and because these drawings are classic in point of style, they are likely to hold their ground as long as the fame of the translator endures. It is probable that the artist's almost absolute knowledge of certain typical forms is due to his long sojourn in Rome, and consequent familiarity with past-masters of Classical Art. The influence of Michelangelo being unmistakable, one cannot help wishing he had not been imitated, as in the "Sibyl." With a view of forestalling another, I hazard this one remark, but for the rest I would have it observed how essentially monumental, and by inference decorative, the majority of these things are. Even paintings which an artist already secure of fame ought not to have exhibited here, will be found to possess a singular power when the spectator is far enough from them. "Whatever the hand may have done, the mind has done its part" said Johnson of Barry's show. It should be explained, as it may give an idea of their importance that the figures in some of these designs are of more than life size *in situ*.

E. R.

**Colne Baptist Church.**—The memorial stones of the new schoolroom and classrooms which are being erected in connection with the Baptist Church have been laid. The new buildings are expected to cost about £400.

**Stanford-le-Hope Sanitation.**—At a Local Government Board inquiry, conducted by Colonel Slacke, R.A., into the question of a drainage scheme for the parish of Stanford-le-Hope, the Rural District Council surveyor said that at present seventy-five houses were connected with a sewer, but the remainder were drained by cesspools. At the outfall of the sewer there was a set of tanks for treatment of the sewage by aluminiferous, the effluent going into a tidal ditch. The water supply was obtained from several wells in the village, and water mains had been laid by the South Essex Water Company, but they had not yet turned the water on. A scheme was detailed which would deal with a population of 3,000, and include parts of Horndon and Mucking. The sewage would be treated by two septic tanks and biological filters at the outfall into Mucking Creek. The estimated cost of this was £3,346, exclusive of the purchase of land and easements.



## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,

April 26th 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### Amiens Cathedral.

NORMANDY and Picardy are rich in ancient and beautiful buildings, and not the least interesting of them is the noble cathedral of Amiens, the ancient capital of Picardy, an illustration of which is given in one of our inset plates. The cathedral was built during the period between the years 1220 and 1280. Of the mass of old houses which formerly surrounded it, many have now been removed—with some loss of picturesqueness—to make way for more convenient dwellings. Our sketch has been taken from the water side, and gives a comprehensive view of the old town and cathedral.

### Disappearing Aberdeen.

CERTAIN buildings in what is known as the "Exchequer Row Area," Aberdeen, are to be demolished, as the quarter is considered to be unhealthy. The Exchequer Row is a narrow thoroughfare, leading from the south-west corner of Castle Street to Shiprow, and its name is derived from the fact that in the time of William the Lion, King of Scotland, a Royal Exchequer Mint existed in the quarter. All traces of the old building are lost, but it is said that there can be little doubt that the existing old building at the south end of Exchequer Court is the Exchequer House subsequently erected on the site, and the initials "V.R.," found on an old oak panel removed from the interior, and presented to the Marischal College, are, perhaps, those of William Roland, who was the master of the Aberdeen Mint in the time of James V. The Bursar's House, which is on the south side of Castle Street, has a rather interesting history. It is said that Mary Queen of Scots was dragged there to witness the beheading of her alleged lover, "Bonnie Johnnie Gordow." At present it is used for a variety of purposes. This house is to be spared for some four or five years. In Burnett's Close, a house bearing the date 1669 is to be demolished; considering its age, it is in a remarkable state of preservation. It is known as Afflick's Tavern. Other buildings in the district of minor importance are coming down.

### Prevention of Fire.

THE testing station of the British Fire Prevention Committee is already showing considerable activity, the investigations generally taking place on Wednesdays. Among the tests in hand are several with floors and partitions of an ordinary description as allowed by the Building Act, including solid timber floors, and floors with various aggregates of concrete, all of which are of course not subject to any patents, or the interests of any special firm. Of methods of the latter class, i.e., patented floors, patented ceilings, etc., a considerable number are, however, also under investigation, and amongst those in hand at the moment may be mentioned a floor by the Columbian Fire-Proofing Co., two floors of the Expanded Metal Co., a ceiling of the Asbestos Co., and windows by the British Luxfer Prism Co. The tests, which are carried out on

scientific lines, but with the practical purpose in view, are conducted by representatives of the Executive, the Council, and the body of Members in rotation, and their reports are circulated approximately bi-weekly. The tests carried out last week saw Major-Gen. E. R. Festing, F.R.S., South Kensington, and Mr. Arthur Cates, F.R.I.B.A., Surveyor to the Crown, as representing the Council, and Messrs. Edwin O. Sachs (Chairman), F. Farrow, Max Clarke, Charles Goad, Ellis Marsland, and Mr. Edmund Woodthorpe, representing the Executive. A number of District Surveyors represented the general body of Members, whilst the following four gentlemen attended as special visitors:—Mr. J. McDermott (War Office); Mr. J. C. Murray (Admiralty); Mr. J. B. Westcott, Surveyor (H. M. Office of Works); and Mr. Capon (L.C.C.). The number of Members and visitors attending tests has, of course, to be strictly limited.

### Arts and Crafts.

THE date for the opening of this year's Arts and Crafts Exhibition has been fixed for Monday, October 9th, and it will close on Saturday, December 9th. The Exhibition is to be held in the New Gallery, 121, Regent Street, London, and will consist of contemporary original work in decorative design and handicraft, such as: Designs, cartoons and working drawings, decorative painting, textiles and needlework, glass (except stained glass, for which there is no suitable light), pottery, metal work, carving and modelling, plaster work, cabinet work, book decoration, printing and binding, wall-papers, and leather work. Anything calculated to encourage craftsmanship in these days of machinery and the division of labour is most worthy of encouragement, and the Arts and Crafts Society have done an immense amount of good by their efforts in this direction. Works intended for exhibition will be received at the New Gallery between 8 a.m. and 8 p.m. on September the 18th, 19th, and 20th. Further particulars can be obtained of the Hon. Secretary, Mr. T. J. Cobden-Sanderson, at the New Gallery, 121, Regent Street, W.

### Mr. G. F. Watts' Memorial Scheme.

AT the Consistory Court last Wednesday, before Dr. Tristram, Chancellor of the Diocese of London, an application was made by the vicar, the Rev. H. R. Gamble, and two churchwardens of St. Botolph Without, Aldersgate, for faculties (1) to erect a covered way or shelter in the churchyard, and (2) to remove from their positions over the holy table panels containing the Creed, the Lord's Prayer, and the ten commandments, and replace them by a centre fresco of "The Dead Christ Watched by Angels," with side frescoes of allegorical figures called "Watch" and "Pray," which Mr. Sigismund Goetze has painted and offered to present to the church. No opposition was offered to the first faculty to erect a covered wall or way in the churchyard at the expense of Mr. G. F. Watts, R.A., in which frescoes delineating heroism in the humbler walks of life may be inserted from time to time, after the manner of the panels of historical subjects in the ambulatory of the Royal Exchange. The churchyard is known as "the Postmen's park," and is about to be largely extended, provided sufficient funds are forthcoming. The present and only wall of the churchyard is formed by the houses in Little Britain, but when these are pulled down to widen that thoroughfare it is proposed to build a new wall with a covered way. The contention was that this covering or shelter would not contravene the Disused Burial Grounds Act, 1884, which made it unlawful to erect any buildings upon any disused burial ground except for the purpose of enlarging a church, chapel, meeting house, or other place of worship; this Act was passed to prevent non-consecrated burial grounds from being sold to speculative builders and built upon. There is no intention to erect a shelter on any portion of the land which was added to the park by the liberality of the public, at an expense of £6,000, and which is to be further extended when £12,000 has been raised, but it is to be confined strictly to the

disused burial ground, which forms but a very small portion of "the Postmen's park." The Chancellor reserved his judgment on this faculty.

### Art and Accuracy.

THE second application brought forth some amusing points. Of the three panels painted by Mr. Sigismund Goetze, the middle one was in the Royal Academy exhibition last year, and excited considerable admiration. The other panels were not then painted. It is proposed to place new panels, on which the Creed, Lord's Prayer, and the Ten Commandments would be painted, on either side of the apse facing the congregation, where they would be more visible than at present. Objections were raised against the central panel on the ground of its historical inaccuracy. It was pointed out that the Gospels described the body of Christ as being wrapped in linen and the angels as being clothed in white, whereas in the picture the body was nude and the angels wore coloured garments. The artist in reply to questions, said that he did not claim that his pictures were historically accurate—they represented truths, not facts. If they had been historically accurate, he should have painted our Lord as an Arab. In making the dead Christ a nude figure, he humbly followed the conception of illustrious artists throughout the ages. His reason for painting the two angels in purple dalmatics was that angels, being ministers of service, should be represented as wearing ecclesiastical garments of service. Mr. Goetze added, with an irritation which in the circumstances is not surprising, that he provided the pictures but not the brains for people to see them with. The consideration of the question was adjourned, the Chancellor expressing a desire to give the people of the parish an opportunity of expressing their views.

### Discoveries in Rome.

AS a further aid to the very successful excavations now being carried on in Rome, which have resulted in the finding of many important antiquities, Sir Philip Currie, the British Ambassador at Rome, has just handed to the proper authorities the sum of £2,400, very generously given by Mr. Lionel Phillips for the purchase of the so-called "Fiori" houses in the Forum Romanum. The only condition attached to the gift was that the houses should be pulled down and their site excavated within a reasonable time. The site in question was occupied by the Basilica Emilia, built by L. Æmilius Paulus in the year 54 B.C. The work is likely to yield results of the highest interest.

### An Architectural Umbrella.

THE extraordinary vagaries of Parisian engineers and builders are innumerable. Several years ago they set up the highest tower in the world, and when we tried to beat them we were speedily stuck in the mud. Now somebody has proposed another foolish fad for the delectation of people with more money than sense. It appears that, at the forthcoming Paris Exhibition, they are going to erect a mighty architectural umbrella—planned upon the Jack and the Beanstalk principle. In the centre will arise a huge umbrella "stalk" about 130ft. thick, and this great stalk will be divided into four stories. On each of these stories will be established concert bars and restaurants, so as to provide those who may feel disposed to ascend the umbrella stalk with something to alleviate their sufferings. But the special feature of the umbrella is yet to be mentioned. Spreading out in all directions from the summit, in the manner of an open umbrella, is to be a great glass roof, like the branches of the tree in Nebuchadnezzar's dream, capable of sheltering half the population of Paris. In sober truth this enormous roof is to be about 450ft. across, and will give accommodation to 30,000 people at once. It is to be hoped that the Germans, if they ever get as far as another siege of Paris, will spare this extraordinary erection; and that the monomaniac who proposes to erect it will not find any imitators on this side of the Channel.



## Professional Practice.

**Douglas, Isle of Man.**—The foundation stone of a new Primitive Methodist Church was laid last Thursday week. Mr. John Wills, of Derby and London, is the architect. The new buildings occupy a very fine and commanding site in Buck's Road. The style adopted is transitional between the Norman and early English. The walls will be built of native stone, with Monk's park stone freely used for ashlar. The plan of the building is a rectangle, 64ft. 6in. long by 43ft. 3in. inside, exclusive of a choir. The front is flanked on the right with a projecting stairway, which runs up and finishes with coping and carved finial, and a large buttress which runs up and finishes with a pinnacle and carved finial. The left of the front is flanked with a square tower, which terminates at a height of 78ft. There are octagonal buttresses at the corners, which terminate with pinnacles and carved finials, with battlements between. There are two massive doorways in front, richly moulded, with gablets over; and over these is a large circular front window, with cusped tracery. All the other windows of the church throughout are either circular or segment headed. There are galleries at two sides and one end, with stairs leading to the same in front, and one at the rear. There are also at the rear two vestries, with lavatories, &c., and over these an organ chamber and choir. The roof will be partially open, with arched timbering and pitch-pine ceiling. The glazing throughout will be in cathedral glass, with leaded squares, diamonds, margins, &c. The approach to the front is by a broad flight of steps, and advantage is taken of the slope of the road to put a large room under the front part of the church, which will also have a class-room and a cloak-room, &c., in connection with it. The whole of the internal fittings will be in pitch pine. The church will seat a mixed congregation of 900 persons, and the cost of the scheme, including land and architect's fees, will be about £6,200.

**Loughton.**—The business of the late Mr. E. Egan, A.R.I.B.A., Architect and Surveyor of Loughton, Essex, and 39, Lombard Street, London, will be carried on by Mr. Horace White (who was the deceased's chief assistant for several years) in partnership with the widow. The style of the firm will be "Egan and White."

**Middlesbrough.**—The Tees-side Laundry Company, Limited, has just been formed in Middlesbrough. About 2600 square yards of land have been purchased with a frontage of 230ft. to Parliament Road. Mr. Walter G. Roberts, architect, of 61, Albert Road, Middlesbrough, has been instructed to prepare plans for the whole of the works, comprising the various departments for the laundry work, dyeing and dry-cleaning, carpet beating, employees dining-room, offices, stabling, boiler and engine houses, 85ft. high chimney stack, &c. It is expected that an early start will be made with the works.

**Norwich.**—The memorial stone of the new Technical Institute now in course of erection was laid last Monday week. The design is by the City Engineer, Mr. A. E. Collins, assisted by his chief draughtsman, Mr. W. Douglas Wiles. The walls are almost wholly of local brick, with Cossey brick mouldings and dressings. The area of the site is about 18,000 superficial feet, while the river frontage extends 190ft. and the frontage to St. George's Bridge Street 120ft. The building consists of basement, ground floor, first floor, and second floor. The foundations necessitated excavations of considerable depth below the river level, so as to reach the gravel bed. The foundations of the river wall were put in under contract by Mr. T. H. Blyth, of Foulsham. The necessary depth of the foundation walls has made it possible to put in a basement of nearly 12ft. high, and this will accommodate the heating and ventilation appliances, the plumbing,

ironwork, lasting, and engineering classes, and a lavatory. On the ground floor are rooms for technical instruction in boot and shoe making and dressmaking, offices for the headmaster, the secretary, and the committee, the library, a bicycle store, a cloak room, lavatories for both sexes, and a strong room, which last-named will be in the tower, forming the north-west corner of the building. On the first floor are a chemical laboratory, a science lecture theatre, office for the science headmaster, lavatories, a lecture hall, and rooms for the teaching of wood carving, geometry, machine construction, science and art, and various other apartments. On the second floor will be lavatories, an office for the art headmaster, and the life, elementary, antique, and other apartments required by the art teachers. Access to the whole of the floors is by means of a principal staircase, 36ft. by 19ft., leading from basement to roof. The staircases will be constructed in concrete throughout. The main stairs will be supported at one end of each step by the outer wall; the other end will be supported on arcading carried from the basement to the level of the second floor. The floors will be constructed of steel main girders and subsidiary girders of Dorman and Long's make, the latter being encased in coke breeze and cement concrete. The main entrance is in St. George's Bridge Street, with a secondary entrance from Monastery Court. Most of the doors of the buildings will be fitted with panic fittings. The heating and ventilating apparatus is arranged on the Blackman Combined Plenum and Vacuum system, by which fresh air is forced into the buildings by fans and drawn out at the top by fans. The contractor is Mr. S. Warburton.

**Nottingham.**—The foundation-stones of the new Nottingham workhouse buildings at Bagthorpe were laid recently. The site comprises 67½ acres, and was purchased at a cost of £12,900. The total cost, including site and furnishing, is expected to reach £250,000. The main building, or workhouse, is to be arranged to accommodate 612 inmates. This part is represented in the lower range of buildings, the administrative block being arranged between, with kitchens, food, and general store-room, large dining hall, offices, committee rooms, and apartments for the master, matron, and servants. For infirmaries paupers an extensive range of premises is to be constructed at the higher portion of the site, where accommodation is to be apportioned for 560 patients. In this case also the administrative block forms a division for the buildings inhabited by male and female inmates respectively; kitchen and store accommodation upon a liberal scale are provided in addition to distinct quarters for dispensary operations, medical offices, committee rooms, and separate apartments arranged for the storekeepers and steward. The extreme top left hand corner of the site will be occupied by a small isolation hospital, the building including a children's infirmary for thirty patients, a nurses' home capable of accommodating forty-five, and a separate block of buildings for the reception of mothers with infants. In a central position, immediately between the workhouse and the infirmary, is to be placed the engine and boiler-house, and on either side are buildings representing the workhouse and infirmary laundries respectively. At the back are workshops, stables, the labour master's house, a mortuary, and the quarters for the remand boys, while the large block of buildings to the extreme right of the site affords accommodation for the reception of 215 imbeciles. Close to the entrance gates are established the porter's lodge, receiving wards for nine, and vagrant wards for sixty-eight, together with stone-breaking yards and sheds. Upon the knoll commanding the whole site is placed the chapel, and the total accommodation in the entire building represents provision for 1614, exclusive of members of the staff. Mr. Frederick Evans is the contractor, and Mr. H. W. Foxworthy the clerk of works. Mr. Arthur Marshall, of Nottingham, is the architect. The cost of the buildings alone will be about £165,000.

## Masters and Men.

**Dundee Joiners** have gained an advance of ½d. per hour, which makes their wages 9d.

**The Aberdeen Masons**, in the building department of the trade, have been granted an advance of ½d. per hour.

**The Perth Glaziers**, after being on strike for a week, have gained their demand for an increase of wages from 6½d. to 7d. per hour.

**The Edinburgh and Leith Joiners**, to the number of about 1,500, have come out on a general strike for an advance on ½d. per hour on their present wage, which is 9d.

**The Newark Journeymen Plumbers** have struck work in consequence of the masters having refused to agree to the adoption of the Society's rules. They were willing, at first, to grant an advance from 6½d. to 7½d. per hour.

**The Barnsley Joiners, Masons, and Bricklayers** have been granted an advance of ½d. per hour from May 1st, making the rates for joiners and masons 8½d. per hour, and for bricklayers 9d. per hour.

**The Scarborough Master Builders' Association** met the representatives of the Scarborough Labourers' Union on the 14th inst. with regard to the refusal of the Union to work with non-union men, but no agreement was come to.

**The Glasgow House Carpenters**, to the number of nearly 3,000, who came out on strike on Friday, for an advance of ½d. per hour on their present wage of 9½d., have had their demand granted by the masters. This is the highest wage ever paid in the district.

**Messrs. Doulton and Company's** pottery works in South Staffordshire are practically at a standstill, for about 1,000 men in the clay pits are standing idle, owing to twelve of the men being discharged for refusing to work until 9 o'clock at night, and twelve others dismissed for refusing to take their places.

**The Plasterers' Dispute.**—There seems a great likelihood of this dispute extending to a lock-out in the whole building trade. The Lancashire, Cheshire, and Yorkshire Master Builders' Associations have agreed that a general lock-out would be the best solution of the difficulty. At a private meeting of the Standing Committee of the National Association of Master Builders, held at Derby on the 19th inst., several important resolutions regarding a general lock-out were passed, and will be considered at the quarterly meeting of the Council of the Association, to be held at Birmingham to-morrow. It is stated on good authority that during the first three weeks of the lock-out the funds of the operative plasterers were reduced by about 25 per cent., the amount being about £5,400, and this, in spite of the fact that, in addition to the special levy, the members paid in during this period about £1,000 in ordinary contributions for sick benefit and superannuation purposes. It is now seven weeks since the lock-out commenced, and the total amount of funds the men had at the commencement of the struggle, it is stated, was under £19,000. The master plasterers in London have succeeded in filling up the places of the men locked out, and a large body of men are said to have seceded from their union, and to have found employment. The masters at Leeds have decided to prosecute the offenders in future in any cases of intimidation; an act of violence to a labourer in the town has led to this decision. At a meeting of the Yorkshire Federation of Building Trades last Friday, the question of the necessity for a foremen's union was brought forward, and the groundwork for such a union was prepared. A general agreement between architects and builders was submitted and approved, and steps will be taken to put it in force.



## Builders' Notes.

**The Builders' Clerks' Benevolent Institution.**—The twenty-first annual dinner of this institution was held last Tuesday week in the King's Hall of the Holborn Restaurant. The chair was occupied by the president, Mr. Alfred F. Randall, and there was a numerous gathering of the friends and supporters of the institution. The toast of "The Builders' Clerks' Benevolent Institution" was submitted by the chairman, who stated that it was thirty-three years old, having been inaugurated in 1866 by Mr. T. P. Ward. The object of the institution was the granting of pensions and temporary relief to builders' clerks and their widows, and the maintaining and educating of their orphans. In 1868 the amount paid in relief was only £12 15s., but in 1898 it was no less than £504. The total amount spent in relief since the foundation of the institution was £17,336. The very greatest care was exercised in the distribution of the pension, and great promptness was also displayed. The committee had power to expend in immediate temporary relief a sum not exceeding £10. They were able to grant a pension of £30 to the clerks, and one of £24 to the widows, while the children were looked after in the Orphan Working School. At the present time there were twenty-one pensioners on the books of the institution. Mr. R. C. Foster gave in warm terms the toast of the "The President." Other toasts followed, and a pleasant evening was spent. During the evening the secretary, Mr. John Austin, announced that the collection amounted to the sum of £200, including a donation of £25 by the chairman.

**Building Dispute at Lynn.**—A reference took place at the Duke's Head Hotel, Lynn, on April 12th, the plaintiff being Mr. H. G. Rudrum, builder, of King Street, Lynn, and the defendant, Mrs. Ada Jane Nicholls, wife of Mr. W. Nicholls, wine and spirit merchant, of South Wootton, who was sued in respect of her separate estate. Plaintiff's claim was for £260 1s. 2d., balance of work done and materials supplied under a building contract between plaintiff and defendant, and for extra work done and materials supplied. The official referee was Mr. Edward Pollock. Counsel for the plaintiff in opening the case for plaintiff, said the original amount of the contract for the building of a residence at South Wootton was £1,012. According to plaintiff, a sum of £30 12s. 4d. was to be deducted as the amount of credit given for omissions, but £184 12s. 7d. had to be added for extras, making a total of £1,166 0s. 2d. There had been £900 paid on account, which after a deduction of £6 by the architect, left the balance of £266 0s. 2d., in respect of which plaintiff sued. Defendant had put in a defence, in which she pleaded the terms of the agreement, alleging that the builder had to satisfy not only Mr. C. S. Beck, her architect, but also herself as owner. She also alleged that £122 4s. 4d. should be deducted for deficiencies and omissions. Then she did not admit that the extras were properly included, and she had paid into court £137 16s 10d. as sufficient to pay plaintiff's claim. In a counter-claim defendant claimed the £122 4s. 4d. as damages. Counsel disputed the right of defendant to claim that the buildings should be to her satisfaction as well as that of her architect. Mr. Beck was her representative, and issued the certificates for payment, and that ought to be sufficient. He asked the referee to first construe the contract. Counsel for the defendant said that in the terms of the memorandum of agreement and the specification the proprietor was distinctly recognised as a separate person from the contractor. The phrase that the work had to be done "to the satisfaction of the proprietor" could not be interpreted as meaningless. There was, he urged, a dual, though, of course, reasonable consent needed. He was in a position to show that the works were not to her satisfaction, and were such as she ought not to be satisfied with as a reasonable woman. If there were defects in the house—as there were—the proprietor was

entitled to call into question the specification. Counsel for plaintiff said that there were three persons to satisfy—Mr. Beck, Mrs. Nicholls, and Mr. Nicholls, the last-named of whom was an amateur architect. A private discussion took place between the counsel, as the result of which it was announced that a verdict for plaintiff for £200 had been agreed to. The referee gave judgment for £200 and costs.

## Under Discussion.

### ST. ALBANS AND ITS ABBEY.

The last of the winter series of papers in connection with the Bradford Historical Antiquarian Society was read by Mr. Herbert E. Wroot, on "St. Albans and its Abbey," last Friday week. Mr. J. A. Clapham presided. In the course of the paper a sketch was given of the history of the Roman city of Verulam, and of the mediæval town and abbey of St. Albans, and the account was illustrated with a large number of old and modern engravings, by which the extent of the recent restorations could be well traced. At the conclusion of the paper a vote of thanks was accorded to Mr. Wroot on the motion of Mr. E. J. Moore, seconded by the Rev. Bryan Dale. Prior to the reading of the paper, a meeting of the Council of the Society was held, at which it was resolved that a sum of £5 should be given to the Restoration Fund of the Bradford Parish Church. It was also resolved that the first of the summer excursions should be on May 27th, when Selby Abbey will be visited.

### ARCHITECTURAL PRACTICE IN SCOTLAND.

At a meeting of the Glasgow Architectural Association on April 11th, the president, Mr. Geo. S. Hill, A.R.I.B.A., in the chair, Mr. John Arthur, of Glasgow and Ayr, read a paper on "Feuing Plans and Their Preparation." The essayist, in introducing his subject, referred to the fact that in cities this class of work was generally placed in the hands of civil engineers and surveyors to carry out, a state of things for which he thought architects themselves were largely to blame, from their lack of interest and, in many cases, incompetency for the work. He submitted, however, that with regard to the plotting out of country estates for feuing purposes, the architect from his architectural training and experience, was the one best qualified to judge how to take full advantage of their natural beauty and surroundings, to give to their prospective road and houses their highest degree of picturesque aspect and utility; and he exhorted those present to take a greater interest in this work, and to follow more closely in the footsteps of their country brother architect in this respect. The author then referred to surveying and levelling as being two necessary qualifications of the estate architect, and proceeded to show in detail by illustrations and demonstration how to survey and level a piece of land, and the use of the various instruments required for that purpose. This led up more particularly to the subject under review; and the author went on to describe what steps were needed to be taken with regard to the preparation of feuing plans for large estates, using Government ordnance maps as a basis for that purpose, to show how and where to lay off new roads to best suit the arrangement and requirements of feus; how to take levels along the line of old and new roads; and how to reduce these levels to a common ordnance datum. The paper was fully illustrated by large scale drawings and examples of feuing plans. A vote of thanks to the author brought the meeting to a close.

**A Peal of Four Bells** has just been placed in the steeple of Arbroath Parish Church, and a new big bell, weighing with wheel, crank, and other connections over two tons, has also been placed in the bell chamber. The bells have been supplied by Messrs. J. C. Wilson and Co., Limited, of Glasgow.

## Engineering Notes.

**At Mile Road Infirmary, Liverpool,** electric lighting was installed recently.

**The New Workhouse Infirmary, Ford, Devonport,** is being warmed and ventilated by means of Shorland's patent Manchester stoves with descending smoke flues, patent Manchester grates, and Shorland's patent exhaust roof ventilators and inlet tubes, supplied by Messrs. E. H. Shorland and Brother, of Manchester.

**Electric Lighting in South Africa.**—At Pretoria the electric light is to be installed in the Government strong room.—The Durban Corporation are negotiating for a loan of £50,000 for electric lighting extensions.—The rate-payers of Cape Colony have sanctioned the adoption of a scheme for electric lighting by water power for Aliwal North.—A syndicate has applied for a concession for lighting Port Elizabeth by electricity. The authorities had already once called for tenders; they then threw them aside and decided to undertake the work themselves, and, subsequently, it would seem, dropped the idea altogether.

**Electric Tramways and Railways.**—At Dover the system of electric tramways has been very successful during the year. £9,000 has been taken in penny fares alone.—A committee has been formed at Chester to promote a scheme to construct a light electric railway at an estimated cost of £40,000.—The receipts from the electric trams at Blackburn the week before last were £450 in excess of those for the same week last year.—The Eastbourne Town Council have instructed the borough engineer to prepare plans for a system of electric tramways in the town, and have refused to entertain proposals from the British Electric Traction Company, Limited, to inaugurate an electric tramway system themselves.—The deputation of the Southampton Tramway Committee appointed to visit certain large towns, with a view to studying the systems of electric tramway traction in use, report that, after inspecting the various systems, they are unanimously of opinion that the overhead system adopted by the Southampton Corporation is the cheapest and best, and the electric system throughout the various towns has proved to be economical and advantageous.

**Electric Traction for N. W. London.**—Mr. Balfour Browne, for the North-West London Railway Company, explained to a Select Committee of the House of Commons, presided over by Mr. Jeffreys, a scheme for the construction of an underground electric traction railway, four miles in length, between the Marble Arch and Cricklewood, with stations at the Marble Arch, Edgware Road, Kilburn, Brondesbury, a point a little farther north, and Cricklewood. The capital power asked was £1,500,000, with borrowing powers of £500,000; and the line, which was to have double tunnels, was estimated to cost £1,065,183. The fares proposed were:—From Cricklewood to Marble Arch, before seven in the morning, allowing the return journey to be made at any time in the day, 2½d.; from Cricklewood to Kilburn, half the distance, 1½d., return; and from Marble Arch to Kilburn, the same. These fares were agreed to by every local authority except the County Council, which wanted the fare to be made 1d. for the single, and 1½d. for the double journey. Mr. Freeman now said that the County Council, which was the chief opponent of the scheme, had further considered the matter, and was prepared to accept 2d. instead of 2½d. as the return fare, and 1d. as the single, both applying to any distance. In the result the Committee passed the preamble, deciding unanimously to allow the return fare of 2½d., and the single fare of 1½d.

**A Soldiers' Institute at Preston** was opened recently.



## CURRENT PRICES.

## COMING EVENTS.

## TENDERS.

## OILS AND PAINTS.

Castor, French	per cwt.	1 5 8	—
Colza, English	per cwt.	1 2 9	—
Copperas	per ton	2 0 0	—
Kerosine, water white	per cwt.	1 5 0	1 15 0
Lard	per cwt.	1 9 0	—
Linseed	per cwt.	0 18 0	—
Neatsfoot	per gal.	0 2 6	0 4 0
Paraffin	per cwt.	0 12 0	0 19 0
Pitch	per barrel	0 8 0	—
Tallow, Town	per cwt.	1 3 0	1 4 0
Tar, Stockholm	per barrel	3 6 6	—
Turpentine	per cwt.	1 13 6	—
Glue	per cwt.	1 19 6	2 18 6
Lead, white, ground, carbonate	per cwt.	0 19 0	—
Do. red	per cwt.	0 17 0	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	3 10 6	—
Do. sticklac	do.	2 6 6	2 15 0
Fumice stone	do.	0 8 9	—

## METALS.

Copper, sheet, strong	per ton	85 0 0	—
Iron, bar, Staffs, in London	do.	6 15 0	8 10 0
Do. Galvanised Corrugated sheet	do.	11 15 0	—
Lead, pig, Spanish	do.	14 6 3	—
Do. English common brands	do.	14 10 0	—
Do. sheet, English, 6lb. per sq. ft. and upwards	do.	16 10 0	—
Do. pipe	do.	17 5 0	—
Nails, cut, clasp, 3in. to 6in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Straits	do.	113 15 0	114 5 0
Do. English ingots	do.	112 0 0	—
Zinc, sheets, English	do.	27 10 0	28 10 0
Do. Vieille Montaigne	do.	31 0 0	—
Do. Spelter	do.	28 2 6	28 12 6

## TIMBER.

## SOFT WOODS.

Fir, Dantzic and Memel	per load	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Laths, log, Dantzic	per fath.	4 10 0	5 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Deals, Archangel 2nd & 1st per F. Std.	do.	5 15 0	18 10 0
Do. do. 4th & 3rd	do.	8 5 0	8 15 0
Do. do. unsorted	do.	7 5 0	8 5 0
Do. Riga	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow	do.	14 15 0	—
Do. do. 2nd	do.	12 0 0	—
Do. do. Unsorted	do.	8 0 0	10 10 0
Do. do. White	do.	7 15 0	9 15 0
Do. Swedish	do.	12 15 0	17 10 0
Do. White Sea	do.	10 15 0	18 0 0
Deals, Quebec Pine, 1st.	do.	18 0 0	23 10 0
Do. do. 2nd	do.	15 5 0	16 15 0
Do. do. 3rd & 4th	do.	6 17 6	8 15 0
Do. Canadian Spruce, 1st	do.	7 15 0	9 0 0
Do. do. 2nd	do.	7 10 0	8 0 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	do.	7 0 0	12 5 0
Flooring, Boards, 1in. prepared, 1st.	per square	0 11 3	—
Do. 2nd.	do.	0 10 6	0 10 3
Do. 3rd & 4th.	do.	0 9 3	—

## HARD WOODS.

Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 0 0	5 0 0
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, 1in., Cuba	per ft. sup.	0 0 4	0 0 4 1/2
Do. Honduras	do.	0 0 4	9 16
Do. Tobasco	do.	0 0 4 1/2	—
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 4 5/16	—
Do. African	do.	0 0 3 1/8	—
Do. St. Domingo	do.	0 0 3 1/16	—
Do. Tobasco	do.	0 0 3 21/32	—
Oak, Dantzic and Memel	per load	3 5 0	3 15 0
Do. Quebec	do.	4 12 6	—
Teak, Rangoon, planks	do.	9 15 0	14 5 0
Wainscot, Riga (Baulk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub. ft.	0 2 1	0 3 2

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Wednesday, April 26.

EDINBURGH ARCHITECTURAL SOCIETY.—"Notes on Romanesque and Byzantine Churches in S.E. Italy," by Mr. Frank Deas. 8 p.m.

SOCIETY OF ARTS.—Ordinary meeting, at 8 p.m.  
INTERNATIONAL BUILDING TRADES EXHIBITION.—At the Agricultural Hall, Islington, N., open until May 6th.  
SURVEYORS' INSTITUTION.—(Country meeting at Bristol).—At 11 a.m., the following papers will be read and discussed:—(1) "Bristol," by Mr. William Sturge (Past President). (2) "The Railways and the Farmers," by Mr. W. M. Acworth (Barrister-at-Law). (3) "The Proposed Provision of Workmen's Houses by Loans from Local Authorities," by Mr. Howard Martin (Fellow). The members will dine together at the Grand Hotel, Broad-street, Bristol, in the evening at 6.30 p.m.  
LIVERPOOL ENGINEERING SOCIETY.—Annual General Meeting. Paper by Mr. M. Trevelyan Reade. 8 p.m.

Thursday, April 27.

SOCIETY OF ARCHITECTS.—Meeting at 8 p.m.  
INSTITUTION OF MECHANICAL ENGINEERS.—Ordinary general meeting. 7.30 p.m.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers).—Mr. Charles Jones on "Scavenging, and Disposal of House Refuse." 8 p.m.

ROYAL INSTITUTION.—Professor Dewar on "The Atmosphere." III. 3 p.m.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—Mr. R. Cameron, M.P., on "The Growth of Art in our Public Schools." 8 p.m.

INSTITUTION OF MECHANICAL ENGINEERS.—Ordinary general meeting. Address by the President, Sir W. H. White. 7.30 p.m.

INSTITUTION OF ELECTRICAL ENGINEERS.—(1) Continuation of discussion of paper by Messrs. W. Duddell and E. W. Marchant on "Experiments on Alternate Current Arcs by Aid of Oscillographs." (2) Paper by Mr. J. Elton Young on "Capacity Measurements of Long Submarine Cables." 8 p.m.

SURVEYORS' INSTITUTION (Country Meeting at Bristol).—Excursions to (1) Places of interest in Bristol and its vicinity, (2) Tintern Abbey and Chepstow Castle, (3) Wells and Glastonbury.

Friday, April 28.

ARCHITECTURAL ASSOCIATION.—Mr. F. W. Macey on "Specifications." 7.30 p.m.

ROYAL INSTITUTION.—Professor C. A. Carus Wilson on "Some Features of the Electric Induction Motor." 9 p.m.

INSTITUTION OF MECHANICAL ENGINEERS.—Ordinary General Meeting (concluded). Mr. H. G. V. Oldham on "Evaporative Condensers." 7.30 p.m.

Saturday, April 29.

SANITARY INSTITUTE.—(Lectures and Demonstrations for Sanitary Officers).—Inspection and demonstrations at the Sewage Outfall Works, Barking, at about 3 p.m., conducted by Mr. J. E. Worth, M.I.C.E., District Engineer, London County Council.

Monday, May 1.

VICTORIA INSTITUTE.—Meeting at 4.30 p.m.  
LIVERPOOL ARCHITECTURAL SOCIETY.—Annual General Meeting. Mr. W. E. Willink, M.A., A.R.I.B.A., will address the meeting.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—(Annual General Meeting).—Consideration of Annual Report; to elect Scrutineers for the election of the Council and Standing Committees; to nominate Auditors for the ensuing year of office; and to appoint the Statutory Board of Examiners under the London Building Act, 1894, and other Acts of Parliament, for the ensuing year of office. 8 p.m.

SOCIETY OF ARTS (Cantor Lectures).—Prof. H. R. Proctor on "Leather Manufacture." Fourth lecture. 8 p.m.

Tuesday, May 2.

SOCIETY OF ARTS.—Meeting of Applied Art Section at 8 p.m.

Wednesday, May 3.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Annual Business Meeting and President's Valedictory Address. 8 p.m.

SOCIETY OF ARTS.—Ordinary Meeting at 8 p.m.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

ACTON, W.—For the erection of the "Railway Hotel," Acton, for Mr. A. T. Saviger. Mr. Edward Monson, F.R.I.B.A., architect, Acton-vale, W., and 22, Buckingham-street, Adelphi, W.C.:—  
Lascelles and Co. £8,426 0 Beer and Gash £7,775 0  
Falcon and Fother. 8,251 0 Gould and Brand 7,689 0  
Ingham 8,248 16 Chessum and Son 7,458 0  
W. Wallis 8,248 16 T. Nye, Ealing  
C. Ansell 8,181 0 Green, W.\* 7,278 0  
Antill and Co. 8,000 0 W. Blackburn 7,060 0  
Godson and Son 7,963 0 \*Accepted.

ACTON GREEN, W.—Accepted for the formation of new road on the Kingswood Park Estate, to be called Bolton Road. Edward Monson, F.R.I.B.A., architect and surveyor, Acton Vale, W., and 22, Buckingham-street, Adelphi, W.C.

Messrs. B. Novell and Co., Earl's Court. £1,125  
BARNLEY.—For the erection of school buildings, Staincross, for the Darton School Board. Messrs. Senior and Clegg, architects, 15, Regent-street, Barnsley:—  
Masonry.—Walker and Blackburn, Barnsley. £1,066 17Carpentry and Joinery.—W. G. and L. England, Barnsley\* 149 0  
Plumbing and Glazing.—W. Dransfield, Barnsley\* 78 10  
Plastering.—M. Fleming, Barnsley\* 147 0  
Slatting.—M. Fleming, Barnsley\* 83 0  
Painting.—Snowden and Son, Barnsley\* 72 0  
Heating Apparatus.—Seward and Co., Lancaster\* 72 0BRIDGLINGTON QUAY.—For the erection of three houses, Cambridgeshire, Messrs. Hardwick and Sons. Messrs. Brodridge, Lowther, and Walker, architects, Bridlington Quay:—  
J. Saydon £1,260 W. Barnes £1,118  
E. Wilson 1,188  
[All of Bridlington Quay.]BRISTOL.—For erecting the Star Life Offices, Bristol:—  
E. Walters £16,535 Stephens, Bastow, & J. Perkins 16,100 Co., Ltd. £14,740  
Cowlin and Son 15,559 G. Humphries 14,400  
A. J. Beaven 14,200BURTON-ON-TRENT.—For the erection and completion of four shops, offices, concert-hall, and premises in Byrkley-street, for the Burton-on-Trent Co-operative Society, Limited. Mr. B. Stevenson, architect, Imperial-chambers, High-street, Burton-on-Trent. Quantities by the architect:—  
W. A. Stevenson £27,595 0 A. Geary £27,392 0  
G. Hodges 7,580 0 T. Lowe and Sons\* 7,390 0  
H. Edwards 7,570 0 R. Kershaw (in- G. H. Adams 7,400 0 formal) £27,333 7  
A. J. Beaven 14,200CAERPHILLY.—Accepted for the erection of an hotel, Aber, for Mr. Wm. Davies. Mr. T. Thomas, architect, 17, Quay-street, Cardiff. Quantities by architect:—  
E. R. Evans and Bros., Cardiff £28,950  
[There were twelve tenders in all.]CASTLETON (Derbyshire).—Accepted for the execution of sewage works, for the Chapel-en-le-Frith Rural District Council. Messrs. Sterling and Swan, engineers, Town Hall, Chapel-en-le-Frith:—  
Etheridge and Clark, Norfolk-street, Manchester £2,098 14KIRKCALDY.—For the construction of a road, the building of a viaduct, steel-girder bridge, and other relative works, for the Commissioners. Mr. W. D. Sang, C.E., Kirkcaldy:—  
Waddell & Son £16,556 7 11 Menzies £14,807 7 1  
Macdonald £16,552 6 8 Cousin £14,632 2 4  
Mackay & Son £15,921 6 4 Gray and Co. £14,418 13 8  
Wishart £15,811 7 9 Fraser, Junr., £13,384 10 4  
Smith and Sons £15,412 2 4 Kirkcaldy\* 13,384 10 4  
Brunt and Sons £15,124 0 5 \*Accepted.LONDON.—For the erection of seven houses in The Avenue, Bruce-grove, for Mr. H. Moore. Mr. E. Howard, architect:—  
W. Hawley, Tottenham (accepted) £2,275

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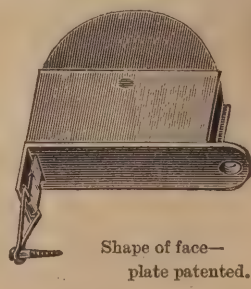
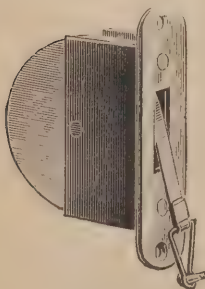
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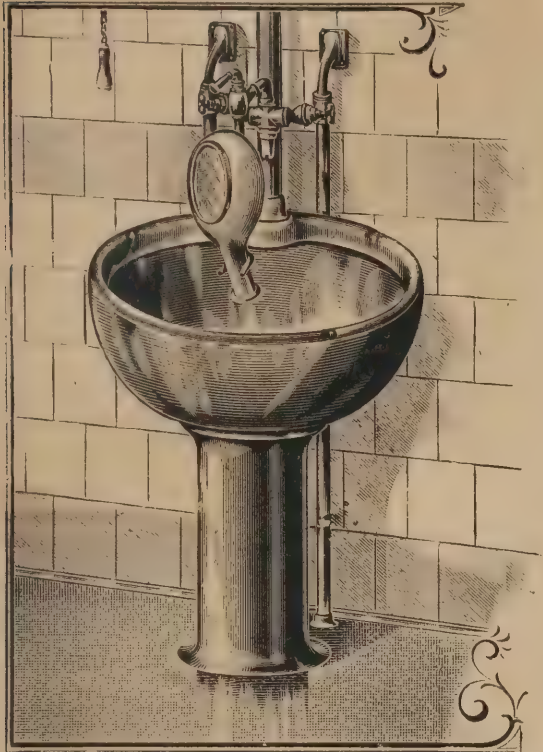
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<b>BUILDINGS—</b>			
April 29	Hexham—Two Arched Bridge, &c. ....	.....	County Surveyor, Moot Hall, Newcastle.
" 29	Pengegon, near Camborne—Wesleyan Chapel Renovation	.....	J. C. Prisk, Wesleyan Chapel, Pengegon, near Camborne.
" 29	Halifax—Schools ... ..	School Board ... ..	W. C. Williams, 29, Southgate, Halifax.
" 29	Chester—Public Baths ... ..	Corporation ... ..	Douglas and Minshall, Architects, Abbey-square, Chester.
" 29	Prudhoe, Northumberland—Police Station ... ..	County Council ... ..	J. Cresswell, Architect, Moot Hall, Newcastle-on-Tyne.
" 29	Ynysybwl, Wales—Public Hall ... ..	.....	J. Rees, Architect, Hillside Cottage, Pentre, Pontypridd.
May 1	Gwbert-on-Sea—Hotel Wings ... ..	.....	C. Morgan-Richardson, Cardigan.
" 1	Southampton—Stables, Police Cottages and Cells ... ..	County Council ... ..	W. J. Taylor, County Surveyor, The Castle, Winchester.
" 1	Faddington, W.—Reconstruction of Bridge ... ..	Vestry ... ..	C. Weston, Vestry Hall, Harrow-road, W.
" 1	Breamore, Hants—Bridge Works ... ..	County Council ... ..	W. J. Taylor, County Surveyor, The Castle, Winchester.
" 1	Barnsley—School, Classrooms, &c. ... ..	Parker-street Baptist Chapel Trustees	Senior and Clegg, 15, Regent-street, Barnsley.
" 1	Barrow-in-Furness—Cookery Centres ... ..	School Board ... ..	W. Hutchison, Clerk, School Board Offices, Town Hall, Barrow.
" 1	Cascoe, near Presteign—Church Repairs ... ..	.....	Rector, Cascoe, near Presteign.
" 1	Dublin—Additions to buildings, &c. ... ..	Gt. Northern Railway Company (Ireland)	Company's Engineer-in-Chief, Amiens-st. Terminus, Dublin.
" 1	Gateshead—Police Station ... ..	Watch Committee ... ..	J. Bower, Borough Engineer, Town Hall, Gateshead.
" 1	Longtown, Cumberland—Alterations to Police Station	County Property Committee ... ..	G. D. Oliver, County Architect, Longtown, Cumberland.
" 1	Reigate—Isolation Hospital ... ..	Town Council ... ..	W. H. Prescott, Borough Surveyor, Market Hall, Redhill.
" 1	Wicklow—Boundary Walls, &c. ... ..	Urban District Council ... ..	F. W. MacPhail, Town Clerk, Town Hall, Wicklow.
" 2	Brighton—28 Five-roomed Artizans' Dwellings ... ..	Corporation ... ..	F. J. C. May, Borough Engineer, Town Hall, Brighton.
" 2	Cubley, Derby—Bridge ... ..	Sudbury Rural District Council ... ..	J. Barker, Surveyor, Cubley, Derby.
" 2	Fenton, Staffs.—Infants' School ... ..	Stoke-on-Trent U.D. School Board	R. Scrivener and Sons, Architects, Hanley.
" 3	Pontypool—Workhouse Extensions, &c. ... ..	Union Guardians ... ..	Laundowne Griggs, Metropolitan Bank-chbrs. Newport, Mon.
" 3	Palmer's Green, N.—Isolation Hospital ... ..	Southgate Urban District Council	W. M. Ellenor, Clerk, Council Offices, Palmer's Green, N.
" 4	Bridgend—Chapel at Asylum ... ..	Parc Gwyllt Asylum Visiting Committee	Giles, Gough and Trollope, 28, Craven-st., Strand, W.C.
" 5	Altear, near Liverpool—Royal Naval Reserve Buildings	Admiralty Works Department ... ..	Director, 21, Northumberland-avenue, W.C.
" 6	Halifax—Schools, &c. ... ..	School Board ... ..	W. C. Williams, 29, Southgate, Halifax.
" 6	Gloucester—School, &c. ... ..	School Board ... ..	P. Cooke, 9, Berkeley-street, Gloucester.
" 8	Darlington—Electric Lighting Station ... ..	Corporation ... ..	Borough Surveyor, Town Hall, Darlington.
" 8	Ilford—Public Offices and Hall ... ..	Urban District Council ... ..	B. Woollard, 16, Pinsbury-circus, E.C.
" 8	London—Superstructures of Bandstands, &c. ... ..	County Council ... ..	Architect's Department, 13, Spring-gardens, S.W.
" 9	Westminster—Alterations, &c. to School ... ..	Vestry ... ..	Beazley and Burrows, 13, Victoria-street, S.W.
" 9	St. Mary Cray, Kent—Fire Station ... ..	Bromley Rural District Council ... ..	W. J. Winter, Council's Bldg. Surveyor, Station-rd., Sidecup.
" 10	Hammersmith—Extension of Electric Lighting Station	Vestry ... ..	H. Mair, Town Hall, Hammersmith.
" 12	Illogan, Scotland—Additions to Boys' School ... ..	School Board ... ..	S. Hill, Architect, Green-lane, Redruth.
<b>ENGINEERING—</b>			
April 29	Sheffield—Coke Hoppers and Cast-iron Tank ... ..	United Gaslight Company ... ..	F. W. Stevenson, Engineer, Commercial-st., Sheffield.
May 1	Belfast—Twelve Steel Barges ... ..	Harbour Commissioners ... ..	G. F. L. Giles, Harbour Engineer, Belfast.
" 1	Dublin—Steel Girder Bridge ... ..	Great Northern Rly Co. (Ireland)	Company's Engineer-in-Chief, Amiens-st. Terminus, Dublin.
" 1	Reigate—Electric Lighting Plant ... ..	Town Council ... ..	P. Hastings, 13, Victoria-street, S.W.
" 1	Merthyr Tydfil—Sewage-straining Tanks, &c. ... ..	Urban District Council ... ..	T. F. Harvey, Engineer, Town Hall, Merthyr Tydfil.
" 1	Morecambe—Structural Steel Work of Tower ... ..	Tower Company Limited ... ..	R. T. G. Read, 1, Great Chapel-street, Westminster.
" 1	New Ross and Waterford—Railways ... ..	Dublin, Wicklow, & Wexford Rly. Co.	M. F. Keogh, Secretary, Westland-row Station, Dublin.
" 2	Perth, Western Australia—Electric Lighting Concession	City Council ... ..	Agent-Generals for Western Australia, 15, Victoria-st., S.W.
" 2	Clacton-on-Sea—Filter Beds at Waterworks ... ..	Urban District Council ... ..	J. Taylor, Sons, and Santo Crimp, 27, Gt. George-st., S.W.
" 2	Abercynon, Wales—Steel-rope Suspension Footbridge..	Mountain Ash Urban District Council..	J. Williams, Surveyor, Town Hall, Mountain Ash.
" 2	Southampton—Reconstruction of 1½ miles of Tramway	Corporation ... ..	Kincaid, Waller, & Manville, 29, Gt. George-st., Westminster.
" 2	Salcot, Essex—Brick and Steel Girder Bridge ... ..	Lexden & Winstree Rural Dist. Council	J. Ennals, Surveyor, Copford.
" 5	Southampton—Heating, Laundry Fittings, &c. ... ..	Corporation ... ..	W. B. G. Bennett, Municipal Offices, Southampton.
" 8	Darlington—Electric Lighting Plant ... ..	Corporation ... ..	Borough Surveyor, Town Hall, Darlington.
" 8	London, W.—Electric Light Wiring and Fittings ... ..	St. Marylebone Guardians ... ..	A. S. Snell, 22, Southampton-buildings, Chancery-la., W.C.

# ASPINALL'S ENAMEL.

**SPECIAL QUALITIES for the BUILDING and DECORATING TRADE.**

**DURABLE and EFFECTIVE.**

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**IN ALL SHADES.**

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**"O" QUALITY for Interior Work, INDIAN Quality for General Exterior Work.**

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**ASPINALL'S ENAMEL LTD., NEW CROSS, LONDON, S.E.**

See our Stall at "Building Exhibition," April 26th to May 6th.



COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—Continued.</b>			
May 8	Epsom—Electric Lighting Plant ... ..	Urban District Council ... ..	W. C. C. Hawtayne, 9, Queen-street-place, E.C.
" 10	Bakewell—Drainage Works ... ..	Rural District Council ... ..	Sterling & Swann, Engineers, Town Hall, Chapel-en-le-Frith.
" 15	Egremont, Cheshire—Gasholder Tank, &c. ... ..	Wallasey Urban District Council ... ..	J. H. Crowther, Engineer, Great Float, near Birkenhead.
" 17	London, E.—Construction of Wells, &c. ... ..	Poplar Union ... ..	E. J. W. Stevens, 34, Victoria-street, S.W.
" 18	Egremont, Cheshire—Gasholders ... ..	Wallasey Urban District Council ... ..	J. H. Crowther, Engineer, Great Float, near Birkenhead.
" 18	London, N.W.—Electric Lighting Plant ... ..	St. John's Vestry, Hampstead ... ..	A. P. Johnson, Vestry Clerk, Vestry Hall, Hampstead, N.W.
June 7	London, S.W.—Electric Lighting Works ... ..	St. Mary's Vestry, Battersea ... ..	Vestry Clerk, Municipal Buildings, Lavender Hill, S.W.
" 10	Naples—Harbour and Docks ... ..	.....	Public Works Department, Rome.
" 30	Shanghai—Tramway Concession ... ..	Municipal Council ... ..	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
<b>IRON AND STEEL—</b>			
April 29	Ealing—Name Plates ... ..	Urban District Council ... ..	C. Jones, Engineer, Public Buildings, Ealing.
May 1	Stockport—Cast-iron Pillars, &c. ... ..	Rural District Council ... ..	H. H. Turner, Surveyor, Devonport-road, Hazel Grove.
" 3	Watford—Iron Pipe Sewers, &c. ... ..	Urban District Council ... ..	D. Waterhouse, 14, High-street, Watford.
" 4	Leeds—Park Entrance Gates and Railings ... ..	Corporation ... ..	City Engineer, Leeds.
" 8	London, S.E.—Railings, Gates, &c. ... ..	County Council ... ..	Architect's Department, 13, Spring-gardens, S.W.
<b>ROADS AND CARTAGE—</b>			
April 29	Hellingly, Sussex—Road ... ..	East Sussex County Council ... ..	F. J. Wood, County Surveyor, County Hall, Lewes.
May 1	London, W.—1,260,000 Creosoted Yellow Deal Bricks... ..	Paddington Vestry ... ..	Surveyor, Vestry Hall, Harrow-road, W.
" 1	London, S.E.—Tar Paving Materials ... ..	County Council ... ..	Parks Department, 9, Spring-gardens, S.W.
" 1	East Dereham—Broken Granite ... ..	Urban District Council ... ..	H. G. Himson, Surveyor, Theatre-street, East Dereham.
" 1	Wimbledon—Road Works ... ..	Urban District Council ... ..	Surveyor, The Broadway, Wimbledon.
" 1	Beckenham—Paving, &c., Work ... ..	Urban District Council ... ..	J. A. Angell, Surveyor to Council, Beckenham.
" 2	Hampton, Middlesex—Materials, &c. ... ..	Urban District Council ... ..	J. Kemp, Surveyor, Park House, Hampton.
" 2	Lindfield, Sussex—Road Works ... ..	G. Masters ... ..	H. W. Beach, Perry-mount-road, Hayward's Heath.
" 2	Patricroft, Lancs.—Street Improvement Works... ..	Barton-upon-Irwell Urban D. Council ... ..	—Hooley, Engineer, Union Offices, Patricroft.
" 2	Tottenham—Victoria Stone Paving... ..	Urban District Council ... ..	P. E. Murphy, 712, High-road, Tottenham.
" 2	Haywards Heath, Sussex—Road Works ... ..	Urban District Council ... ..	E. Waugh, Clerk, Bolto-road, Hayward's Heath.
" 3	London, S.W.—Road Making and Paving... ..	Fulham Vestry ... ..	C. Botterill, Town Hall, Walham-green, S.W.
" 3	Ware—Street Works ... ..	Urban District Council ... ..	J. Goddard, Surveyor, Council Offices, Town Hall, Ware.
" 3	London, S.E.—Roadway ... ..	Lambeth Guardians... ..	W. Thurnall, Clerk, Brook-street, Kennington-road, S.E.
" 3	Hove—Paving Works ... ..	Corporation ... ..	Borough Surveyor, Town Hall, Hove.
" 4	Bexhill—Materials ... ..	Urban District Council ... ..	G. Ball, Surveyor, Town Hall, Bexhill.
" 5	Croydon—Materials ... ..	Town Council... ..	Borough Road Surveyor, Town Hall, Croydon.
" 5	Wanstead—Granite Kerb ... ..	Urban District Council ... ..	W. Blewitt, Clerk, Offices, Wanstead, N.E.
" 13	Egham—Making-up Roads ... ..	Rural District Council ... ..	W. Menzies, Englefield Green, Surrey.
" 31	Wolverhampton—Materials ... ..	Tramways Committee ... ..	W. Bradley, Borough Surveyor, Town Hall, Wolverhampton
<b>SANITARY—</b>			
April 29	Haslingden—Materials for Outfall Sewerage Works ... ..	Outfall Sewerage Board ... ..	H. L. Hinnell, 41, Corporation-street, Manchester.
" 29	Garlands, near Carlisle—Drainage Works... ..	Asylum Committee of Visitors ... ..	J. Little, Sanitary Engineer, Viaduct-chambers, Carlisle.
May 1	Mountain Ash, Wales—Sewers ... ..	Urban District Council ... ..	J. Mansergh, 5, Victoria-street, Westminster.
" 1	Darent, near Dartford—Sanitary Appliances at Asylum ... ..	Metropolitan Asylums Board ... ..	T. D. Mann, Norfolk House, Norfolk-street, Strand, W.C.
" 1	Romford—Drainage Works ... ..	Rural District Council ... ..	J. Simmons, Engineer, Bank-chambers, Doncaster.
" 2	Chelmsford—Sewage Disposal Works ... ..	Rural District Council ... ..	J. Taylor, Sons, and Santo Crimp, 27, Gt. George-st., S.W.
" 2	Knaresborough—Main Sewer... ..	Rural District Council ... ..	J. Smith, Clerk, 44, Station-parade, Harrogate.
" 3	Mexborough—Brick Sewer, &c. ... ..	Urban District Council ... ..	G. F. Carter, Surveyor, Market Hall, Mexborough.
" 3	Rochester—Drainage Materials ... ..	Corporation ... ..	W. Banks, City Surveyor, Guildhall, Rochester.
" 4	Ardrossan, Scotland—Sewers... ..	Commissioners of Police ... ..	W. B. Copland, 146, Regent-street, Glasgow.
" 9	Mortlake—Lime... ..	Richmond Main Sewerage Board ... ..	W. Fairley, Engineer, Works, Mortlake.
" 12	Johannesburg—Sewerage Scheme ... ..	.....	Town Engineer, Johannesburg.
" 16	Leeds—Earthenware Pipes ... ..	Sewerage Committee ... ..	City Engineer, Municipal Buildings, Leeds.

# The EAGLE ARC LAMP

MANUFACTURED BY

## JULIUS SAX & CO. LTD.

No Clutch.

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No Escapement.

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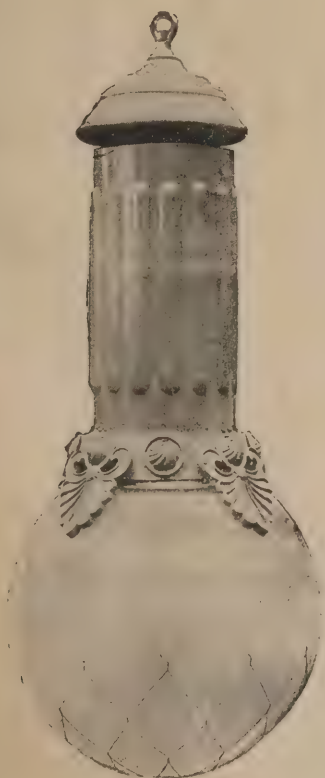
It is simple, certain in action, steady, cheap.

The Best ARC LAMP for Direct Current.

The Best ARC LAMP for Alternating Current.

PRICES, &c., APPLY TO

EAGLE ELECTRIC WORKS, 119, Coldharbour Lane, London.





LIST OF COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
April 29	Frome—School of Science and Art ... ..	£25, £10 ... ..	Urban District Council.
" 30	Ramsgate—Concert Hall, Reading Room, Lavatories, &c. ... ..	£50, £20, £10 ... ..	T. G. Taylor, Surveyor, Broad-street, Ramsgate.
May 1	Dover—Pier Concert Pavilion... ..	£25 ... ..	Promenade Pier and Pavilion Company Limited.
" 1	Stockton-on-Tees—Market Hall ... ..	£25, £15, £10... ..	Corporation.
" 16	Arbroath—Public Shambles ... ..	£7, £5, £3 ... ..	Burgh Commissioners.
June 1	Leeds—Market Hall and Shops ... ..	£150, £100, £50 ... ..	Corporation.
" 6	Salford—Laying-out Site of Barracks ... ..	£30, £20, £10 ... ..	Corporation.
" 27	Edinburgh—County Buildings ... ..	£100, £50 ... ..	Midlothian County Council.
" 30	Wakefield—Central Buildings ... ..	£50, £30, £20 ... ..	Wakefield Industrial Society, Ltd., Bank-street, Wakefield.
July 3	Harrogate—Kursaal ... ..	£150, £100, £75 ... ..	Corporation.
No date.	Clacton-on-Sea—Laying-out Cliff Frontage, Pavilion, &c. ... ..	£75, £50, £25 ... ..	Urban District Council.
"	London, S.W.—Public Baths ... ..	£157 10s., £78 15s., £52 10s. ... ..	Commissioners of Fulham Public Baths and Washhouses, Town Hall, Walham Green, S.W.

# JARRAHDAL JARRAH.

THE PIONEER AUSTRALIAN HARDWOOD.

UNEXCELLED FOR

STREET PAVING, HARBOUR WORK, PLATFORM PLANKING,  
RAILWAY TRUCKS, RAILWAY SLEEPERS, STAIR TREADS,  
FENCE POSTS, PALINGS, &c., &c.

For Quotations and Particulars, apply to the Sole Importers,

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Do not miss **STAND 89** at the Builders' Exhibition, London, where the **VALVELESS SYPHON CO.**, of Kirkstall, Leeds, are showing their well-known "**WATERWITCH**," "**NEPTUNE**," & "**KIRKSTALL**" Syphon CISTERNS.

# CARBOLINEUM AVENARIUS

(REGISTERED).

## PATENT WOOD PRESERVATIVE.

**CARBOLINEUM AVENARIUS**, the well-known Wood Preservative, enters the wood by its own action, and does not require a costly plant and machinery like other Wood Preservatives.

**CARBOLINEUM AVENARIUS** entirely prevents dampness in brick and stone walls, also wet and dry rot in timber above or below ground, and is used by all the leading Railway Companies, and by Builders, Brewers, Contractors, Estate Agents, Mine Owners, &c., &c., in the United Kingdom.

**CARBOLINEUM AVENARIUS**, the most successful preservative and antiseptic for Wood Paving Blocks. Used in the Metropolis and many Provincial Towns. Superior to Creosote or Hard Wood.

For further Particulars and Testimonials, apply

**PETERS, BARTSCH & CO., DERBY**, and 68, Queen St., Cheapside, London.

## To All Owners and Users of Steam Boilers.

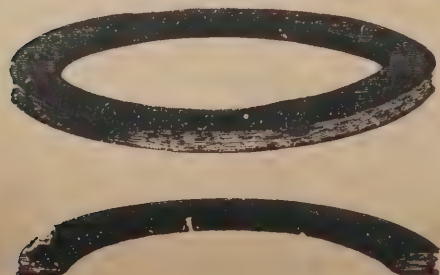
PATENT 22,561, ACCEPTED FEBRUARY 9TH, 1895.

### ABSOLUTE PREVENTION OF BOILER INCRUSTATION.

By addition of Chrome Salts to the Feed Water the formation or deposit of all Incrustation is thoroughly prevented.

For Cost of Licenses and Full Particulars, apply

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## INDESTRUCTIBLE COMBINATION WASHERS,

FOR FLANGE JOINTS OF STEAM AND WATER PIPES.

Tested up to 2300lb. Pressure

These Washers consist of Rings of Soft Metal, grooved outside, and holding in the groove packing material such as Asbestos, Rubber, Hemp, &c., &c. The soft metal, in conjunction with the packing included, will accommodate itself readily to any unevenness in unplaned flanges, and make a perfect and durable joint. It is impossible, owing to their construction, to blow them out under any pressure whatever.

**PETERS, BARTSCH & CO., DERBY.**

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# BUILDING TRADES' EXHIBITION Supplement.

APRIL 26TH, 1899.

## BOYLE'S PATENT "AIR-PUMP" VENTILATOR.

THE LATEST PATENT HAS DOUBLE THE EXTRACTING POWER OF EARLIER FORMS AND IS ONE-HALF THE COST.

ROBT. BOYLE & SON, LTD., 64, Holborn Viaduct, LONDON; & 110, Bothwell St., GLASGOW.

*See Large Advertisement, Back Page, Monthly.*

## THE PROBLEM SOLVED!

**ORDINARY WOOD RENDERED FIRE-RESISTING THROUGHOUT  
WITHOUT AFFECTING ITS UTILITY AS A BUILDING MATERIAL.**

## The British Non-Flammable Wood Co. Ltd.

who have recently introduced into Europe the process now being so largely used in America, have erected large works in this country, and are now taking Orders for the supply of their

### NON-FLAMMABLE WOOD.

The whole of the Carpentry and Joinery in the following notable buildings in New York, amongst others, consists of NON-FLAMMABLE WOOD:—

**THE COMMERCIAL CABLE BUILDING,  
THE QUEEN'S INSURANCE BUILDING,  
... and ...  
THE R. G. DUNN BUILDING.**

NON-FLAMMABLE WOOD has been tested by H.M. Admiralty, and large Orders have been given by H.M. Government.

Quotations on receipt of Requirements, Address, &c.

## THE BRITISH NON-FLAMMABLE WOOD COMPANY Limited,

2, Army and Navy Mansions, Victoria Street, London, S.W.



# THE BUILDING TRADES' EXHIBITION.

THE present Exhibition is beyond question the largest and most comprehensive that has yet been held, and it promises in every way to be most successful. The preparation of the various stands has involved a great deal of work, and for a week past there has been as much jerry-building in the Agricultural Hall as in a growing London suburb. But this is a case in which jerry-building is positively virtuous, and one cannot but admire the ingenuity with which some of the exhibitors have erected houses in miniature on which to display their special methods of construction.

Owing to the fact that we publish on the day on which the Exhibition opens, our information with regard to the exhibits had to be gleaned while the stands were in varying degrees of completeness. For that reason some of the notices are more meagre than we could wish; a brief notice of an exhibit, therefore, must not be regarded as an indication of our sense of its importance.

It is impossible to deal adequately with the Exhibition in a single number, and we shall publish a second Special Supplement with our next week's issue. Some of the stands are described below, but we defer until next week an account of many important and interesting exhibits, including the whole of those in the Smoke Prevention and Road-Making Sections.

## THE BUILDERS' JOURNAL.

Stand No. 62 in Row C is one upon which our readers, we are sure, will look with kindly eyes. It is tastefully and comfortably fitted up, and a number of works of art, including some of the original drawings that have been, or will be reproduced in the "Architectural Review" and the BUILDERS' JOURNAL, will afford a pleasing contrast to the useful but not very beautiful exhibits of some of the neighbouring stands. One of the attractions of our stand is a phonograph, which at intervals during the exhibition will discourse on matters of vital interest to all connected with the building trades. We hope many of our readers will spend a few agreeable minutes listening to its pertinent remarks. There is also a goodly show of the publications of the Talbot Newspaper Co.—the BUILDERS' JOURNAL, "Architectural Review," and "Specification"—both in single numbers and in bound volumes.

## MEJER, GREENWOOD, AND SON, LIMITED.

This firm is exhibiting on its stand a screen illustrating three different styles of decoration with "Vernolene" for frieze, wall filling, and dado. Another screen is shown representing the wall section of a drawing-room, which is painted with white "Vernolene," the raised parts being gilded. This demonstrates that "Vernolene" is adapted for painting raised wall decorations, and can be gilded. Two marine views and several panels painted with this article are shown. "Vernolene" is claimed by the manufacturers to be suitable for application on Portland cement, plaster, brick, stone, galvanised iron, woodwork, and many other grounds. The factory of Messrs. Mejer, Greenwood, and Son, Limited, is in Oxford Street, Hull.

## W. DUFFY.

Mr. W. Duffy, of Gainsborough Road, Victoria Park, London, is exhibiting his patent system of dowelled wood paving which, he asserts, costs less per annum than any other system. The blocks are bound together so that a homogeneous and practically immovable pavement is obtained, and tilting or dislocation is rendered almost impossible. The blocks can be laid without concrete. The method employed by Mr. Duffy in securing the blocks together, consists in the making of recesses or holes in the blocks, into which are inserted dowells or bonding keys of a special type. This system has been used in several buildings, and the manufacturer has laid about 1,000 square yards of the pavement for the Great Central Railway Company in front of their terminus in Marylebone.

## THOMAS FEWSTER AND SON, LIMITED.

This firm is exhibiting a novelty which takes the form of an illuminated showboard, and is placed at the back of the stand. It is wood stained with their preparation, and contains the words "Decorated with Fewster's Turpentine Stains," and has the appearance of inlaid wood. The firm claims that its stains are strong and permanent colours, which can be diluted with turpentine or varnish to give lighter shades, or mixed together to give intermediate tints. The

stain does not raise the wood like a water stain, and, as it dries quickly, may be varnished over in a few hours. The makers say that when a good coat of stain is applied, no sizing is required before the work is varnished. The stains can be used for church and chapel seats, decorating shop fronts, counters and fittings, house fronts, furniture, wood boxes, and a multitude of other purposes. Among their other exhibits are their oil paper varnish and their amber oak varnish. Specimens of the paints manufactured by the firm are exhibited conspicuously. Their address is Sykes Street, Hull.

## JOHN PARKER.

Architects and builders who have occasion to employ the 'dry closet' system may be recommended to examine the exhibits of Mr. John Parker, of Worcester Place, Oxford. The closets shown are in several forms, but are all constructed on the same sanitary principle. The great desideratum in earth closets is that the earth should be applied automatically and immediately upon each use of the closet. This is accomplished in the case of the closets shown by Mr. Parker, which are self-acting by means of levers under the seat; directly the seat is relieved from the pressure of the occupant, the deposit is covered with earth, and no offensive smell can possibly arise. Ashes may be used instead of earth; in either case the closets are perfectly cleanly, and the removal of the receptacle is not at all offensive.

## FOXCRIFT AND DUNCAN.

The exhibits of Messrs. Foxcroft and Duncan, electrical and mechanical engineers, of 24, Queen's Road, Dalston, include three "Sappho" inclosed arc lamps, one painted cover, and two polished copper covers, as approved and adopted by the London County Council, the Shoreditch Vestry, and other local bodies. The makers claim for the "Sappho" lamp that it is the best and cheapest inclosed arc lamp on the market. They also show examples of open type arc lamps. All these lamps are suitable for direct or alternating current, series or parallel working. Messrs. Foxcroft and Duncan are also makers of voltmeters, ammeters, galvanometers, cell testing sets, telephones, bells, and other electrical appliances, a fair selection of which is to be seen at their stand.

## JULIUS HULSEN AND CO.

This stand will be of special interest to brickmakers. Messrs. Julius Hulsen and Co., 28, Sandhill, Newcastle-on-Tyne, are the English agents of Messrs. Walter Feld and Co., manufacturers of precipitated carbonate of barytes, which is largely used both in this country and abroad in the manufacture of bricks, tiles, and terra-cotta, as a preventative against scum. To demonstrate the utility of their preparation, Messrs. Hulsen are showing burnt goods made from the same seams of clay, some of which have been burnt with and some without an admixture of barytes.

## THE THRELKELD GRANITE CO., LIMITED.

The most striking exhibits at the stand of the Threlkeld Granite Co., Limited, of Keswick, are a large and varied selection of the

Company's granite ornamental tiles. These tiles have been made and used with conspicuous success on the Continent and also in India, and the company anticipate that on the tiles becoming generally known in England they will be extensively adopted for the floors and dados of public buildings, hall floors, corridors, and floors of private houses. The special advantages claimed for these tiles are that they are frostproof, impervious to moisture, and remarkably durable. The colours are at least 1 in. thick, and the company undertake, if sufficient time is allowed, to manufacture their tiles in any colours required by the architects. Examples are shown of tiles with plain surfaces and also with the pattern shown in relief in imitation of mosaic. In addition to their encaustic tiles the company are exhibiting specimens of their syenitic granite macadam and granite-concrete paving which are extensively used in Lancashire, Yorkshire, Cumberland and Westmorland. Their output of macadam, we understand, amounts to about 500 tons per day, and of granite-concrete paving to about 3000 super. yards per week.

## "VELURE."

This is the name of a paint which possesses some noteworthy qualities. It gives a most brilliant enamel-like surface, though it is not an enamel but a varnish paint without any gum. Being elastic, it allows for the contraction and expansion of a metal surface without cracking or chipping. It is made in a great variety of tints; the white is especially useful, as it is guaranteed to keep its colour and not turn creamy. "Velure" can be applied to paper, wood, or metal, and it is said to possess great durability and capacity for being cleansed. This speciality is exhibited by The "Velure" Agency, 19, Southampton Row, London, W.C., who are also showing samples of varnishes, gold size, and oil.

## THE FIREPROOF CONSTRUCTION COMPANY, LIMITED.

In the erection of the fire and sound proof partition, which is the speciality of this firm, wood and iron supports do not find a place. A partition only 3 in. thick is claimed by them to be absolutely fireproof and sound resisting. Examples of the work are being shown; and at the company's offices at 132, Wool Exchange, London, E.C., fixed work can be inspected.

## H. HERMAN, LIMITED.

This firm is exhibiting three very artistically carved easels; one is Gothic style in carved oak, another is Renaissance in walnut, and the last is Louis XV. style in dark mahogany. The details are very carefully carved in the respective styles, and illustrate the excellence of the work Messrs. Herman, Ltd., execute. The firm has branches in Glasgow and Manchester; their London address is 67 and 69, City Road, E.C.

## W. GOODING.

At this stand are exhibited a variety of stair treads, which the manufacturer claims to be "the only perfect." The treads consist of an iron keeper, pierced with a number of square-shaped holes, into which are inserted blocks of rubber. Mr. Gooding, whose address is North Road, Holloway, London, N., is also exhibiting



his patent combined safety valve and fusible plug. This valve consists of a spiral spring which is adjustable to the pressure at which the valve is intended to rise, and in its centre is the fusible plug, so that in the event of the spring becoming fixed, or any similar mischance occurring at a time when an abnormally high steam pressure within the boiler is requiring an outlet, the plug melts from the super-abundant heat, and the danger is immediately obviated by the vent thus formed.

#### THE VALVELESS SYPHON CO.

The Valveless Syphon Co., of Kirkstall, Leeds, on Stand No. 89, show samples of their well-known "Waterwitch" and "Neptune" syphon cisterns and fittings, the sales of which have amounted to upwards of 40,000 in five years. Six closets are shown in operation. The first is the "Waterwitch" cistern in combination with the "Premier" washdown closet. The cistern case is a polished mahogany cabinet with carved front, held in position by substantial brackets of good design; the fall-pipe is of polished brass with screw coupling arrangement. The closet has seat extension, to which is attached a suitable mahogany seat with raised backboard, and it is especially suited for a private bathroom. The general action is most satisfactory, and an excellent flush is obtained with a quiet operation. No. 2 shows the application of the "Neptune" self-contained syphon to a porcelain or earthenware cistern, which can be supplied to match the closet. No. 3 shows the "Direct Neptune" closet, the latest improved and patented arrangement. In this case the syphon is another arrangement of the self-contained "Neptune" fitting, but is so constructed as to dispense with bending the flush-pipe, thus effecting a more direct flush, while maintaining a neat and finished appearance. The cistern is of sheet copper, the fall-pipe is of polished brass, the seat of polished mahogany, while the closet basin gives a good result and has County Council outlet. No. 4 is the "Direct Waterwitch" closet, arranged in all particulars like the above, with the following exceptions: that the syphon is the "Waterwitch," and the closet the "Axis," with screw trap outlet, and arranged to meet the London County Council requirements. No. 5, the "Direct Kirkstall" cistern (which will undoubtedly rival the famous "Waterwitch" cistern made by this firm) shows the application of the patent syphonic valve, which is brought into operation by the least movement of the pull, viz., half-an-inch; this renders it particularly suitable for use in hospitals, asylums, workhouses, schools, &c. The pull is so slight that the smallest child can with perfect ease put the closet into full operation. No. 6, the "Neptune" Low-down Closet, is an application of the patent self-contained Neptune 1½ in. syphon, with a very limited fall of 15 in. only to flush the closet effectively. It is especially suitable for contracted situations.

#### THE NATIONAL GAS ENGINE CO., LIMITED.

In Bay No. 12 may be seen in full working order the "National" gas engine, made by the National Gas Engine Co., Ltd., of 117, Queen Victoria Street, London, E.C. They are also exhibiting other types of ordinary engines, in connection with which a patent oiling arrangement for the connecting rod is displayed. Their "O" and "T" types of ordinary engines are being used with a patent starter.

#### A. C. W. HOBMAN AND CO.

That the paving of floors with mosaics is a durable and artistic way of decoration, there is no doubt, and a look over Messrs. Hobman and Co.'s stand will at once convince the visitor that they are masters of the craft of mosaic paving. They are exhibiting various examples of mosaic granolithic paving, and also a staircase with mosaic steps, specimens of window cills, moulded cornices, Kentish ragstone for paving, &c., and these all go to make their stand a most interesting one. The address of the firm is, Cliftonville, South Bermondsey, London, S.E.

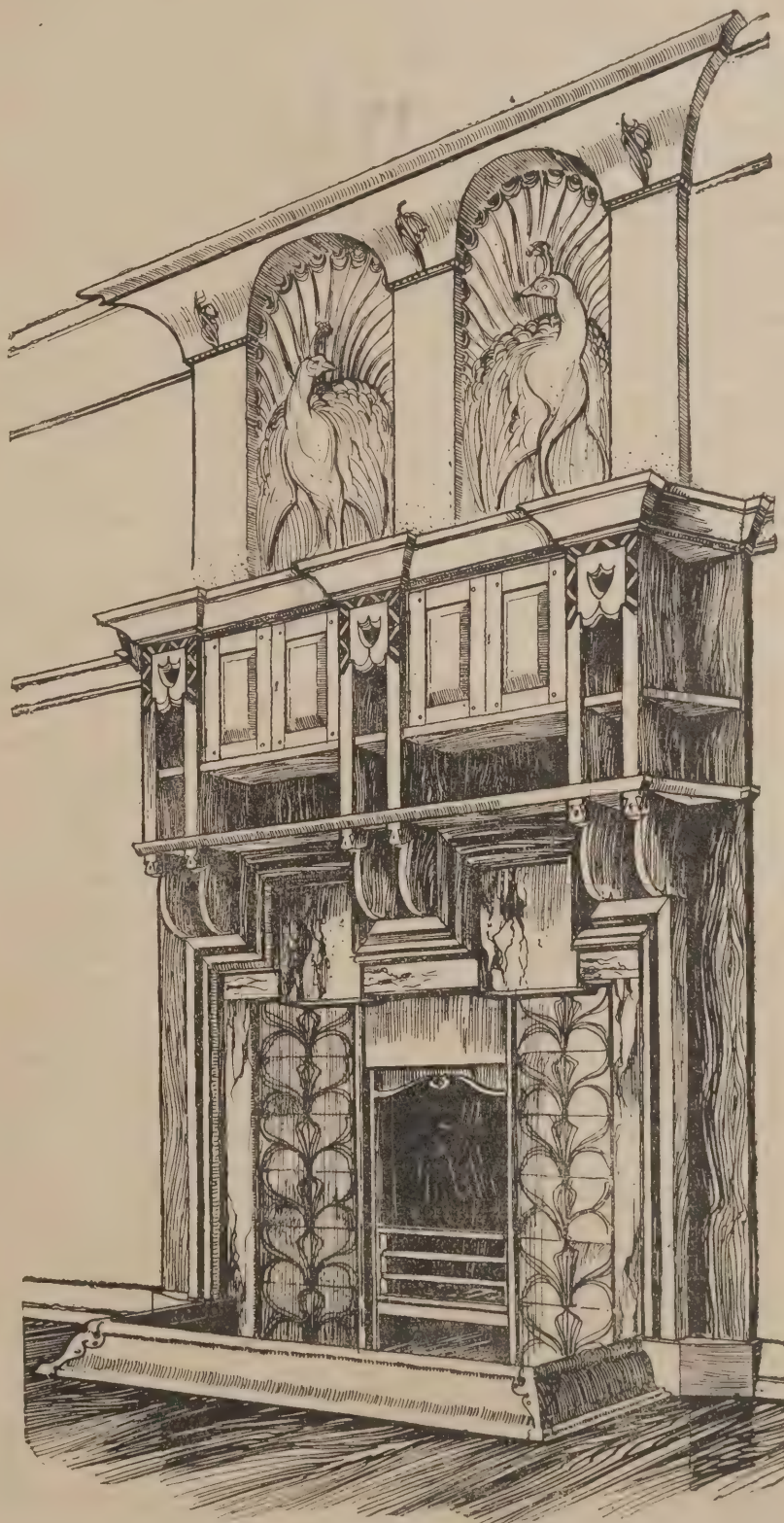
#### THE FARNLEY IRON CO., LTD.

Messrs. Farnley, of Leeds, are exhibiting a variety of glazed bricks. These are in so many patterns that we will not attempt the task of enumerating them. Porcelain baths of good quality, glazed in white on the inside alone, form part of their exhibit; sink and lavatory pedestals in either glazed white or buff are a special feature and at once command attention. The urinal which this firm makes is intended to be erected against a glazed brick wall, and consists of a half-round back, top cover, continuous channel, front pillars, and sole plate. The half-round back is sloped forward, and brought straight at the bottom, so as to deliver into the continuous channel. For flushing, either a rose or a spargepipe may be used. The many

examples of gully traps are of excellent manufacture, and the patterns exhibited of different pipes and channel bends are typical of what is supplied by the firm.

#### JOHN P. WHITE.

Mr. John P. White, the Pyghtle Works, Bedford, manufactures every description of high-class joinery, but makes a speciality of wood chimney-pieces. Of these some very artistic designs are being exhibited, one of which is here reproduced. The designers of the chimney-pieces shown at Mr. White's stand are:—C. E. Mallows, C. H. B. Quennell, H. Wilson, G. L. Morris, George Jack, A. A. Gibson, J. S. Cooper, A. Cox, E. T. Hall, and F. W. Hamilton.



A FIREPLACE DESIGNED BY C. H. B. QUENNEL, AND MANUFACTURED BY J. P. WHITE, OF BEDFORD.



**F. W. POTTER AND CO.**

This firm is showing a variety of electric wing fans, which it is claimed do not obstruct the light, and have adjustable blades and bearings. Their "Dovetail" copper gauze brush is also being exhibited. It is made of copper wire gauze, so folded that the part intended to face the commutator consists of plain layers of gauze to the extent of about one-half the thickness of the brush, backed by about an equal quantity of gauze which is folded or corrugated at right angles to the plain layers; the degree of stiffness can be varied. The "Steelead" stair tread seems to be a very durable article, and is claimed to be non-slipping. The address of the firm is Phipp Street, Great Eastern Street, London, E.C.

**THE UNITED ASBESTOS COMPANY, LIMITED.**

This stand is devoted to selections of the "Salamander" decorations for walls, ceilings, friezes, and dados. These decorations are in



GOthic DESIGN, IN "SALAMANDER" DECORATION, EXHIBITED BY THE UNITED ASBESTOS CO. LIMITED.

relief, and some of the designs are very good. The Gothic design in 1½ in. relief, of which we give an illustration, is a good example of what can be done by the firm. Several ceiling panels hung outside the stand are well calculated to meet the popular taste. "Salamander" is made from asbestos, and is, therefore, fireproof. The firm's address is 158 and 160, Charing Cross Road, London, W.C.

**H. PAHL AND CO.**

The houses made from the glass bricks manufactured by the above firm are not those referred to in the saying that "People who live in glass houses should not throw stones." The "Falconnier" glass bricks would stand any amount of stones thrown at them. They are hollow, hermetically sealed, and contain air. The laying of them is accomplished in the same manner as ordinary bricks. Messrs. Pahl and Co., of 14, Farringdon Street, London, E.C., are exhibiting a miniature kiosk built with these bricks, and it has a very attractive appearance.

**JAMES SMITH.**

This stand is devoted to a new iron joint for stoneware pipes, called "Ernest Smith's," which differs from the ordinary stoneware pipe, as it is without the usual stoneware collar, and in its place is a very light iron collar or socket, which is fitted on to the body of the pipe with a cement composed of sulphur and precipitated gypsum. The joint, as will be seen from the illustration, is practically the same joint that is used in cast-iron water mains, and is very easy to make. The annular space between the spigot and the collar is fitted with a strip of blue lead, cut for the purpose and of the proper thickness. The

spigot is pushed home, and a very small amount of caulking makes the joint perfectly watertight. As to cost, the manufacturer says that it is less than half that of iron pipes. The address of the maker is 82, Coldharbour Lane, London, S.E.

**LAURANCE SEAGER, AND BOWER AND CO.**

Mr. Seager is exhibiting an improved step-ladder which can be used as a tressle and as an ordinary straight ladder. Messrs. Bower and Co.'s off-bearing barrow is an improvement on the old-fashioned sliding top, as it runs much lighter, and is less liable to shake the bricks. The patent wooden moulds on show are strong and light. A large assortment of barrows, sieves, and screens is being shown. The address of the makers is Sittingbourne, Kent.

**WILSON AND CO.**

The special feature shown by Messrs. Wilson and Co., of 24, Harrison Street, W.C.,

is hygienic register stoves for warming and ventilating rooms. These stoves are intended to meet the general need for economy and efficiency in the warming and ventilating of rooms without seriously interfering with the usual style of open fire-grates, or the architectural arrangements. A perfect ventilator is the great desideratum of the day; and in this stove the makers claim to have solved the problem. The arrangement consists of an air chamber under the hearth, which is supplied with fresh air by means of a pipe. The cold air becomes warmed in this chamber, and also in the pipes leading from it to the face of the register stove, whence it is admitted into the room through a ventilator pure and warmed. The increase in the temperature of the air admitted is from 10deg. to 20deg. The rate of ingress depends upon the difference between the outside temperature and the inside, but about 50 to 60 cubic feet per minute of pure warm fresh air is the usual rate at which it can be admitted. Messrs. Wilson and Co. must be complimented on the artistic appearance of their stoves.

**THE MOREAU MARBLE CO., LIMITED.**

The visitor, on arriving at this stand, will find a variety of decorations in marble, such as staircases, chimney pieces, columns, altar screens, fonts, pedestals, tables, vases, &c. The speciality of this firm is Moreau marble, which is white limestone, coloured, hardened, and converted into marble by a scientific process which imitates the action of nature. The firm undertakes to produce any shade of the richest marble, either with natural veining, self tints, or with solid inlays of any pattern or colour. Judging from the specimens ex-

hibited, the company have been surprisingly successful in their imitation of the natural product. The works are at 79, Lots Road, Chelsea, London, S.W.

**JULIUS SAX AND COMPANY, LIMITED.**

The principal feature of this exhibit is the "Eagle" patent arc lamp. The makers claim that it is almost a matter of impossibility for their lamp to get out of order. The accompanying diagram illustrates the manner in which the lamp works. A is the bobbin, B is the armature, C and C' are flexible metallic cords, D and D' are the carbons, and E is a counter-weight. The carbons, when the lamp is currentless, are held together. When switched on the bobbin attracts the armature, and this in turn separates the carbons, so that the arc is established. The length of the separation is rigidly and accurately maintained by the magnetic balance. The armature cores being laminated, the lamp works equally well for direct or alternate current. From the centre arches of the stand four of these lamps hang, and on a table there is an arrangement by which the action of the carbons in direct and alternate currents is thrown on to a screen in a magnified form. On each side of the stand are two panels: No. 1 contains electric bells and indicators to be used in hotels, private houses, &c.; No. 2 is covered with fire alarms and burglar alarms of various descriptions; No. 3 is devoted to all kinds of electric fittings; and No. 4 displays specimens of the firm's water gauges and tank alarms. The firm is exhibiting the original telephone stations that were used by the Queen between Southampton and Osborne, and the history of the electric bell system is being well illustrated

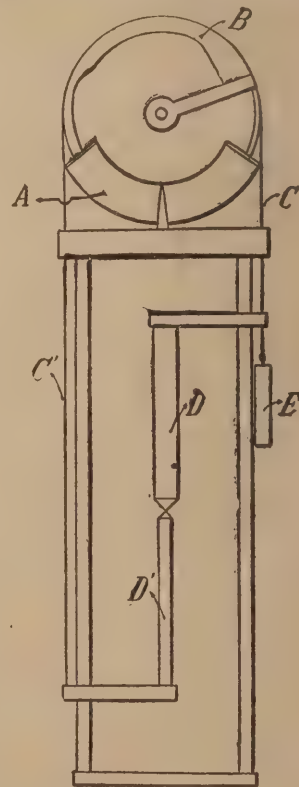


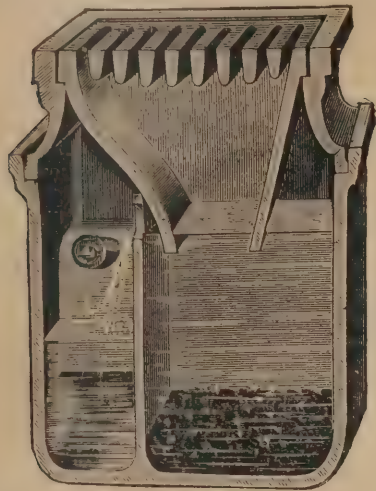
DIAGRAM ILLUSTRATING "EAGLE" PATENT ARC LAMP. EXHIBITED BY JULIUS SAX AND CO. LIMITED.

by models. A brass electrolier hanging from the roof of the stand is a good illustration of the work this firm turns out. Many other things in the shape of switches, electric communicators, pushes, &c., are being exhibited, among which may be mentioned the electric tell-tale clock, or recorder for watchmen. This apparatus is designed to check and keep a permanent register of the time at which watchmen visit the various points on their round. It is in a lock-up case, and cannot be tampered with. The firm's address is Eagle Works, 119, Coldharbour Lane, Camberwell, London, S.E.



**AMES CROSTA SANITARY ENGINEERING CO., LIMITED.**

This stand is essentially a sanitary one, and Crosta's patent surface water gully is very much in evidence. The chief advantages claimed for this gully are, that it has a double trap which seals noxious sewer gases; that it thoroughly intercepts all road detritus without getting out of order; that it has a small area of water exposed to the atmosphere, is made of impermeable metal, and withstands heavy traffic; that its fixing costs less than



CROSTA'S PATENT SURFACE-WATER GULLY: LONGITUDINAL SECTION. EXHIBITED BY THE AMES CROSTA ENGINEERING CO. LIMITED.

other makes; and that it is made in a variety of sizes to meet all conditions. The Ames and Crosta's patent self-adjusting pipe joint is another feature of their exhibit, and is an effective and economical article. The man-hole cover which this firm, whose place is at Nottingham, are showing seems to be a good arrangement.

**THE RUSTLESS IRON CO.**

This firm has a stand devoted to the rustless articles they manufacture, prominent among which may be seen the "Trico" rustless furnace pans. These are supplied in all sizes, from a capacity of 6 gallons to 200 gallons, and with a spout attached from 8 gallons to 50 gallons. If you want a larger size, give your order at the stand, and it will soon be executed. "Trico" rustless three-legged pots can also be seen, and these are supplied in sizes from 8 gallons to 50 gallons. The Rustless Iron Co., of Keighley, make rustless boilers of all descriptions, as well as rustless saucepans, kettles, cisterns, tanks, troughs, gutters, drain and fall pipes, gratings, hollow ware, "and almost anything else you may require in a rustless condition."

**JOSEPH CLIFF AND SONS.**

All sorts and conditions of bricks will be found at the stand of Messrs. J. Cliff and Sons, of Brick Wharf, Waterloo Bridge, London, S.E. There are glazed, salt glazed, white, majolica, terra-cotta, buff, dove-tailed, and many other kinds of bricks too numerous to mention. Suffice it to say that they are of fine quality all through. Worthy of the special attention of the visitor are the faience mouldings and panels, of which the specimens shown are excellent examples of the firm's work. A patent continuous scum trough for swimming baths is a good invention, and evidently serves its purpose well. Chimney pots, porcelain baths, closets, gully traps, retorts, furnace, patent tiles, and sinks of various descriptions go to make a very complete exhibit.

**OATES AND GREEN, LIMITED.**

Messrs. Oates and Green, of Halifax, are showing an assortment of lavatory basins suitable for schools, public buildings, &c. These are in white glaze and the firm's well-known salt glazed ware. A feature of the

stand is a patent taper urinal, but the principal speciality of this firm is the waste water closet, and this is prominently exhibited. A very great variety of sinks, pipes, and interceptors are being shown. The specimens of gully traps and closet pans which find a place in the stand are deserving of particular notice.

**THE BATH CABINET MAKERS' COMPANY, LIMITED.**

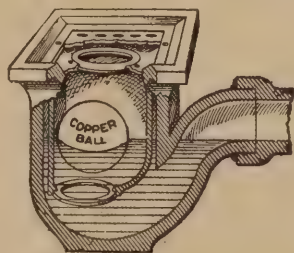
This firm makes a good display of room decorations in the shape of wood chimney-pieces and overmantels. Their mahogany inlaid chimney-piece is an especially beautiful article, as is also the fireplace and overmantel of the same style. Inlaid and carved fumigated oak fireplaces and overmantels are a speciality of this firm, whose address is 54, Berners Street, London, W., and the manner in which the carving is executed is excellent. Numerous examples of carved and inlaid work of all descriptions are being shown, and repousse metal panels, grills, hinge plates, etc., all find a place in this interesting exhibit.

**C. A. ZADIG AND CO.**

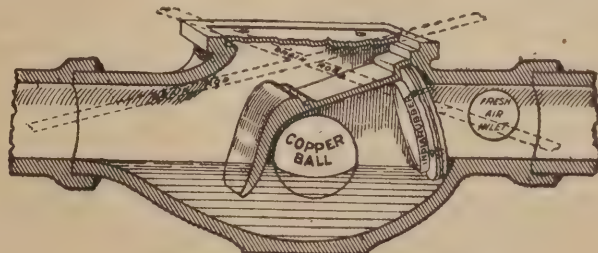
Messrs. C. A. Zadig and Co., of 11, Queen Victoria Street, London, E.C., are exhibiting a set of points and crossings, which are constructed in such a way that the tongues can be moved with the foot in any direction desired. A double-side steel tip waggon which is on view seems to be a very useful affair. Its wheels and axles are made of the best steel, and it has dust-proof "Panama" axle boxes. The underframe is also made of steel, and has a lever to incline or level the truck. The makers claim that the cradle-tipping arrangement is so made that there is no possibility of the waggon upsetting, and the truck can be emptied with extraordinary ease. Another article worthy of notice is their iron turntable.

**G. AND F. COUZENS.**

Ball valve specialties are the articles which will be found on the stand of this firm, whose works are in the Tudor Road, Cardiff. The gully trap in illustration No. 1 has one of their automatic ball valves. It will be observed that a back pressure of water instantly raises the copper ball against the rubber seating in the top casing, thus forming an effectual seal; but should the tap become dry from any cause, the copper ball rests on the lower rubber seating, and prevents any escape of sewer gas. In another gully trap on view at their stand a similar purpose is served by means of an iron door faced with rubber. Illustration No. 2 shows



GULLY TRAP WITH AUTOMATIC BALL TRAP.



PATENT BALL TRAP INTERCEPTOR.

EXHIBITED BY J. AND F. COUZENS.

how their patent ball trap interceptor effectually prevents the back flow of water in basements during heavy storms. It will be seen that any back pressure of the water instantly affects the ball and forces it against the rubber seating. The makers state that architects can with confidence specify this trap.

**DOULTON AND COMPANY, LIMITED.**

A portion of this stand is allotted to the display of a selection of mantelpieces and fireplaces in glazed faience. We notice in the designs a successful attempt to depart from the more or less stereotyped fashions that have hitherto ruled in this department of ceramics. The forms are simple, and the colour effects quiet and restful. The

advantages of glazed fireclay as a material for fireplaces are so obvious that we need not enlarge upon them; the ware is always clean and bright, and the radiation of heat so gradual that an equal and healthy temperature is easily maintained. A few words must be devoted to the specimens of wall tiling. The same desire for simplicity of arrangement and artistic balance of colour is evident here. The stoneware tiling is of extreme importance, as it offers a material that can be used with confidence for artistic work, or any position where the ordinary glazed faience may seem to be inadmissible. The absence of a high gloss is the distinguishing characteristic of the "Carrara" stoneware, and this will recommend the material to those who dislike the effect of a too glittering surface. Both salt-glazed stoneware and the "Carrara" enamelled stoneware are in use for constructional work, and several important buildings have been recently erected in which they have been introduced. In the section of the exhibit specially reserved for sanitary fittings, we notice among other things some strong glazed ware sinks for hospital use. These are arranged so that the bed pans can be thoroughly cleaned without being handled in any way. This is done by means of a spray and jet, and the valves for these are worked by a treadle. The sink has a flushing rim, so that the whole surface can be cleaned after using. There are other patterns of sinks, chiefly made in glazed ware, but suitable for ordinary private use. The baths are very varied in pattern and design; Canopy, French and Sitz forms being among those exhibited. A noticeable feature is the patent vitreous enamel, with which the baths are lined. This enamel is very superior to the old metallic enamel and has a surface as clean and lasting as the earthenware baths, and is more varied in colour. There is one bath that calls for special attention, which is on the same principal as the Canopy arrangement, having a shower, spray, &c., but instead of the large hood at the back it is merely a skeleton arrangement with a hanging curtain. Amongst the lavatories there are some very highly finished examples with marble tops, friezes, &c., and special shaped basins. In all cases where fitted with standing waste, or vulcanite plug, the outlet is made as large as possible so as to allow their emptying quickly. For supporting these tops either ornamental brackets or highly finished standards are used, so that the whole space beneath is quite open. There is also a selection of decorated earthenware lavatories. Well worthy of special attention are some designs for valves, wastes, &c., for independent baths. The closets are

shown fitted for use. One which is specially good is the syphonic, which gives a good water area and depth of seal, and possesses advantages in its simplicity and strength of action. Amongst others, there are thick glazed closets for asylum use, and also one of the decorated "Simplicitas" type. The "Paisley" cistern is fixed with these closets, but it will be seen that in some cases the shell, instead of being made in cast-iron as is usual, is made in highly decorated pottery. This firm's exhibit also includes stoneware pipes, of the ordinary type and "self adjusting" and "composite" joints, both of which forms have been extensively used for main sewerage schemes, and for the drainage of hospitals, public buildings, &c. Amongst the selection of traps, gullies, and other stoneware appliances for sewerage and



drainage, some new designs of gullies are shown which are provided with an inspection and cleaning arm, fitted with metal, airtight cover. The display of white, enamelled fire-clay includes lavatories, sinks, &c., which are samples of excellent manufacture and careful design, embodying all modern sanitary requirements. Staffordshire earthenware, white and cane glazed, is represented by a selection of closets, urinals, &c.; while the Staffordshire blue bricks also visible on the stand afford further evidence of the wide range of the company's productions in all classes of ceramics. The address of the firm is Lambeth, London, S.E.

#### CHARTERIS AND LONGLEY.

Wood block flooring is exhibited by Messrs. Charteris and Longley, of Latona Road, Peckham, who show numerous samples of their patent "Perfected" system. An examination of the samples shows very clearly the simplicity and ingenuity of this system. The patent "Perfected" block is grooved along the bottom of each side, and has at each end a rabbeted tongue which fits accurately into the groove of the block lying next to it. By this means every block is securely keyed to its neighbour in a simple and effective manner. Many different patterns are shown proving that whether the design chosen be simple or elaborate the same perfect bond is obtained. The blocks are laid on a special damp-proof mastic which experience has proved to be the best obtainable and one that holds the blocks securely to the substructure even at very high temperatures. It does not become brittle, and has a natural affinity for all kinds of woods as well as for cement. Care is exercised in the selection of the wood used in preparing the "Perfected" blocks. The method of seasoning adopted is the well-known Shapland's process. It is found that wood treated by this process has a much firmer and brighter condition than if dessicated in the ordinary way, and that it sustains no injury to its fibre. To mention seriatim the advantages claimed by the firm for floors laid on this system we may say that they are absolutely rigid, adaptable in blocks of any size and in any kind of wood, can be laid in a great variety of patterns, suited to large areas, as basements, school corridors, &c., afford a smooth surface for dancing, &c., are sanitary, noiseless, damp proof, rot proof, and fire resisting, and make special provision for gaining access to hot-water pipes, &c. This last is a special feature which merits some description. Both sides of the trench to be covered with flooring are fitted with strong wood curbs, on which the blocks rest. These blocks are then securely fastened by long border blocks, which are screwed into the curb on each side. To obtain access to the trench it is only necessary to unscrew the border blocks along one side, and remove the tongued blocks.

#### KIRCHNER AND CO.

Messrs. Kirchner and Co., the well-known saw mill and wood-working engineers, whose chief office is at 118, Queen Victoria Street, London, E.C., are showing a good display of machines for builder's work, which alone make it worth while for everyone to visit their show who is in any way interested in the working of wood. During the last twelve months Messrs. Kirchner and Co. have considerably extended their works, and the number of workmen employed in this department alone is now about 1000, or 200 more than a year ago. In spite of this increase we are told that night work has had to be adopted to cope with the numerous orders in hand. The machines are all of good design. The material, finish, and workmanship are also excellent. Amongst the machines that this firm are exhibiting we noticed the following: Kirchner's new hand planer, with tables 8ft. long, to work stuff 12in. wide; a number of patent attachments can be used with this machine, of which Kirchner and Co. are the inventors, for spiral or square turning, for raising panels, &c. A show case placed in front of the machine contains samples of work done on the machine, giving a very fair idea of what it can do.

A 24in. panel planer, and a 16in. by 4in. three-cutter. The type of both of these machines is excellent. A 36in. band saw, to cut 16in., fitted with patent safety guards. An under-driven patent mortiser, which Kirchner and Co. say is of the most liked and approved pattern. A tenoning machine, to cut tenons 6in. long, and suitable for trenching shelving 22in. wide, of the latest type. Kirchner's patent variety moulder; this is a combined moulding and recessing machine, and works with a number of patent attachments. An automatic knife grinder for planing irons.

#### JOSEPH BROOKE AND SONS.

This firm is exhibiting samples of work made from the "Silex" hard York stone. Landings tooled, knotted, and self-faced, flags specially tooled, knotted, and self-faced, kerbs, coping, flags, wallstones, or parpoints, and channelling, all specially worked, go to show that the work turned out is of no mean order. The "Silex" stone is very durable. Its tensile strength is 1100 tons per cubic foot, absorption 1.02 per cent., and it is only procured from special beds in the lowest formations. The above firm have a nice exhibit of glazed bricks, majolica glazed fireplaces, baths, sinks, mangers, the patent "Duplex" pipes, "Grip" wall tiles, &c., all of which are of good quality and appearance. The ivory white glazed brick is a speciality of this firm, being very hard, and absolutely non-absorbent, and being dipped in a specially prepared vitreous body is quite impervious to damp or climatic changes. The fireplaces shown are specially adapted for use in hotels, schools, railway stations, &c. The chief offices of Messrs. J. Brooke and Sons are at Hipperholme, near Halifax.

#### MOORE'S PATENTS COMPANY LIMITED.

The feature of this stand is the patent windows manufactured by the firm, whose offices are at 73, Digbeth, Birmingham. The frame is of solid material and the sashes are made in the usual way, and are so slung that they always bear on the inner beading, and cannot rattle. The sashes can easily be regulated by means of sliding handles. Another advantage this window has is that a self fastener operates when the sashes are closed, making it impossible to open them from without, while it pulls the meeting rails tight together, and ensures their being locked. These sashes can also be regulated when high up by bringing the end of the cord down, or at a distance, by carrying it to any part of the building. By simply lowering both sashes to the bottom, turning in the hinged beading, and withdrawing the parting bead, the sashes can be turned inward on their hinges like a door. The windows are warranted watertight. The patent fanlight which this firm manufactures is a simple affair, as the cord operates it without cog or screw gear. The patent door spring is an article worth consideration; it does not require oiling.

#### DIESPEKER AND CO.

Messrs. Diespeker and Co., of 57 to 60, Holborn Viaduct, have a large stand, outside of which and inside of which (for they have arranged the inside as a very comfortable room) they show a large variety of samples and of drawings. All styles and kinds of mosaic seem to be represented, many of which are very beautiful in design and workmanship. Specimens of mosaic such as have been executed by Messrs. Diespeker and Co. at some of the most important buildings erected during the last twenty years are on view, amongst which we have especially noted samples of circular skirting and Venetian marble mosaic which they have laid in the various fever hospitals of the Metropolitan Asylums Board, for which body they have laid about 1,500 yards during the last few years; also a sample of similar work, though different in colour, being in this latter case all white, of which they have laid about 10,000 yards at the New General Hospital, Birmingham; sample of Venetian mosaic of which they have laid 3,000 yards at the General Post Office, St.

Martins-le-Grand, for H.M. Office of Works, which is very effective and rich in colour. At the New Birkbeck Bank they have laid 3,500 yards recently, and the Coat of Arms of the Birkbeck Bank, which they show, is made striking by its simplicity of treatment. A very effective design is shown of the floor in Roman marble mosaic as executed at the National Portrait Gallery for the late Mr. Ewan Christian. Samples of mosaic as done for H.M. War Office at different buildings are on view. We were struck by the very effective design for the entrance of the new Blackpool Alhambra which Messrs. Diespeker and Co. have been carrying out for Messrs. Wyllson and Long. Samples of floors as laid at Guy's Hospital, at the Queen's Hall, at the Hotel Cecil, at the Restaurant Frascati, at the Indian Institute, Oxford, at the Royal College of Music, and many other buildings are also on show. Messrs. Diespeker and Co. inform us that they could refer to quite 10,000 buildings in which they had laid mosaic, and in their list of reference, as well as in the paper read by the managing partner of the firm before the Society of Architects in May last, they claim that their mosaic is to be specially recommended on sanitary grounds, being non-absorbent, impervious to damp, and very easily kept clean. The specimens we have seen seem to bear this out. They also say that their mosaic is unequalled for durability as they only use the hardest marbles of each kind, so that they are enabled to guarantee, and they do guarantee it, for thirty years. This at first strikes one as an extraordinary guarantee, but as they referred us to some buildings in which their mosaic had been laid twenty years ago, and amongst these drew our attention to the mosaic at Olympia, which is still in perfect condition, though more than fifty million people have passed over it, Messrs. Diespeker and Co. seem quite justified in the claim they make for durability, and the risk they incur in guaranteeing their mosaic for so long a period is really a slight one. Their treatment of swimming-baths seems to us admirable. This treatment has been adopted for a good many baths recently, notably by the Corporations of Hull, Sheffield, Leeds, Ipswich, Tunbridge Wells, &c. All the samples and drawings on view here can after the Exhibition be seen at their show rooms, 57 to 60, Holborn Viaduct. Messrs. Diespeker and Co. are in all cases prepared to submit designs and estimates free, and they can execute all orders with great promptitude, as all their work is done in this country.

#### G. B. KENT AND SONS.

This firm is exhibiting a very large assortment of all descriptions of paint brushes. A specimen of every brush they stock is being shown on the stand, and all of them are of one quality—"the best." This is how the firm itself describes them, and the wide reputation they have acquired would indicate that the description is justified. Dusters of every kind are on view, and these appear to have been manufactured with great care. In fact, this remark can be applied to every article manufactured by the firm. The badger softeners are good articles, Messrs. Kent and Sons import their badger skins direct, dress them at their works, using the longest lengths for softeners, the middle lengths for shaving brushes, and the shortest for tooth brushes. The best quality is produced from the back; the hair is strong, and the tips are white. The hair cut from the flanks has darker tips. Their overgrainers are stocked in a large variety of sizes, and are made from the best hog and sable hair. They also supply a patent Swedish soldering lamp, which is strongly made in polished brass. The flame can be easily regulated to any size by simply turning a screw. Their blow and paint removing lamps are substantially made, and can be recommended. Coming back to brushes again, we may mention the sash tools, which are a speciality of the firm, and are of good workmanship. Every description of painter's brush is stocked by this firm, whose address is 75, Farringdon Road, London, E.C.



Property and Land Sales.

Between BLACKHEATH and CHARLTON.  
Important FREEHOLD BUILDING ESTATE.  
To Land Companies, Capitalists, and Building Speculators.—The choice Freehold Building Estate, known as Eastcombe, a portion of the estates of the late William Angerstein, Esq., on the main road from Blackheath to Charlton, about half a mile from Westcombe Park and Charlton Station, from whence London is reached by South-Eastern Railway in twenty minutes, about a mile from Blackheath, and in the midst of a healthy and highly popular district, comprising a most commodious Family Residence, with two lodge entrances, stabling, charming pleasure grounds, and well-timbered miniature park, let on yearly tenancy of £280 per annum; together with beautifully undulating pasture land, extending from the Charlton-road with long frontage thereto, to Victoria and Invicta roads, Westcombe-hill, the whole comprising 35 acres. The estate is immediately ripe for development, and offers exceptional facilities to capitalists for the creation of ground-rents, and the demand for middle-class houses in this favourite locality assures successful building operations.

MESSRS. BEADEL, WOOD and Co. will SELL by AUCTION, at the Mart, Tokenhouse-yard, London, E.C., on TUESDAY, MAY 16th, at ONE o'clock precisely, the above valuable BUILDING ESTATE, in one lot.  
Particulars, with plan and conditions of sale, may be obtained of W. T. HARTUP, Esq., Solicitor, Norwich; at the Mart; and of MESSRS. BEADEL, WOOD and Co., 97, Gresham-street, E.C.

BLACKHEATH and GREENWICH.  
VALUABLE FREEHOLD BUILDING LAND.  
To Builders, Land Companies, and Speculators.  
A plot of valuable Freehold Building Land, ripe for the immediate erection of villa residences, situate in and having an important frontage of 172ft. to Westcombe-hill, within five minutes' walk of Westcombe-park Station, on the South-Eastern Railway, and only twenty minutes' ride from London Bridge, and containing about half an acre. With possession.  
A valuable Freehold Building Site, known as Combe Farm, available for the erection of first-class villas and shops, situate in and having a frontage of 300ft. to Westcombe-hill, and 200ft. to Milton-road, adjacent to Westcombe-park Station, and containing about 2 acres. Let on a yearly tenancy.  
A block of Freehold Building Land, of about 6 acres, with a frontage of 1100ft. to Horn-lane, near the Woolwich-road, and let on a yearly tenancy. Suitable for the erection of manufacturing premises.  
An important area of Freehold Building Land, situate adjacent to the Woolwich-road, ready for the immediate erection of houses and business premises, and containing about 26 acres. Let on a yearly tenancy.  
MESSRS. BEADEL, WOOD & Co. will SELL by AUCTION at the Mart, Tokenhouse-yard, London, E.C., on Tuesday, May 16th, 1899, at one o'clock precisely, in four lots the above valuable FREEHOLD PROPERTIES, being a portion of the estate of the late William Angerstein, Esq. Particulars, with plans and conditions of sale, may be obtained as above.

Forthcoming Sales for the year 1899.  
MESSRS. E. and H. LUMLEY (Lumleys, of St. James's House, 22, St. James's-street, London, S.W.) beg to announce the following days of SALE by AUCTION, for the forthcoming year, at the Mart, Tokenhouse-yard, E.C.; but, in addition, other dates can be arranged for special sales. Terms on application.  
Tuesday, April 25th      Tuesday, Aug. 15th  
Tuesday, May 23rd      Tuesday, Sept. 12th  
Tuesday, June 6th      Tuesday, Oct. 17th  
Tuesday, June 20th      Tuesday, Nov. 14th  
Tuesday, July 4th      Tuesday, Nov. 28th  
Tuesday, July 18th      Tuesday, Dec. 12th.  
Messrs. E. and H. Lumley announce in the advertisement columns of the "The Times" on Saturdays a complete list of their sales, which will include estates in England, Ireland, and Scotland, town and country properties, ground-rents, reversions, gas and water shares, stocks, &c. In cases where property is to be included ample notice should be given in order to insure due publicity.—St. James's-house, No. 22, St. James's-street, S.W.

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Founded, 1884; Incorporated, 1893.  
The SIXTH ORDINARY MEETING of the Society of Architects for the Session 1898-99 will be held at the Rooms of the Society, at St. James's Hall, Piccadilly, W., on THURSDAY, APRIL 27th, 1899, at 8 o'clock p.m., when a Paper will be read by ANTHONY SCOTT, Esq., M.S.A., on "THE ROUND TOWERS OF IRELAND: THEIR ORIGIN, USES, AND CONSTRUCTION;" and the Silver Medal of the Society awarded to W. A. Scott, Esq., will be presented.  
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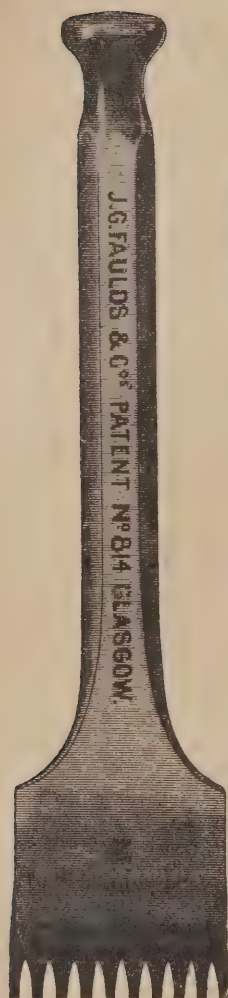
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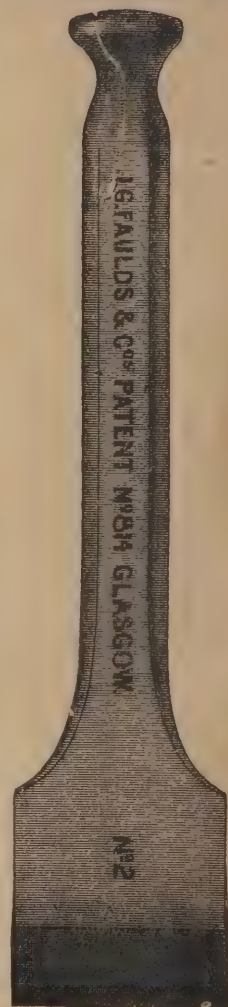
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## An Architectural Causerie.

### Turner at the Guildhall.

THE remarkable popularity of the Turner Loan Exhibition at the Guild-

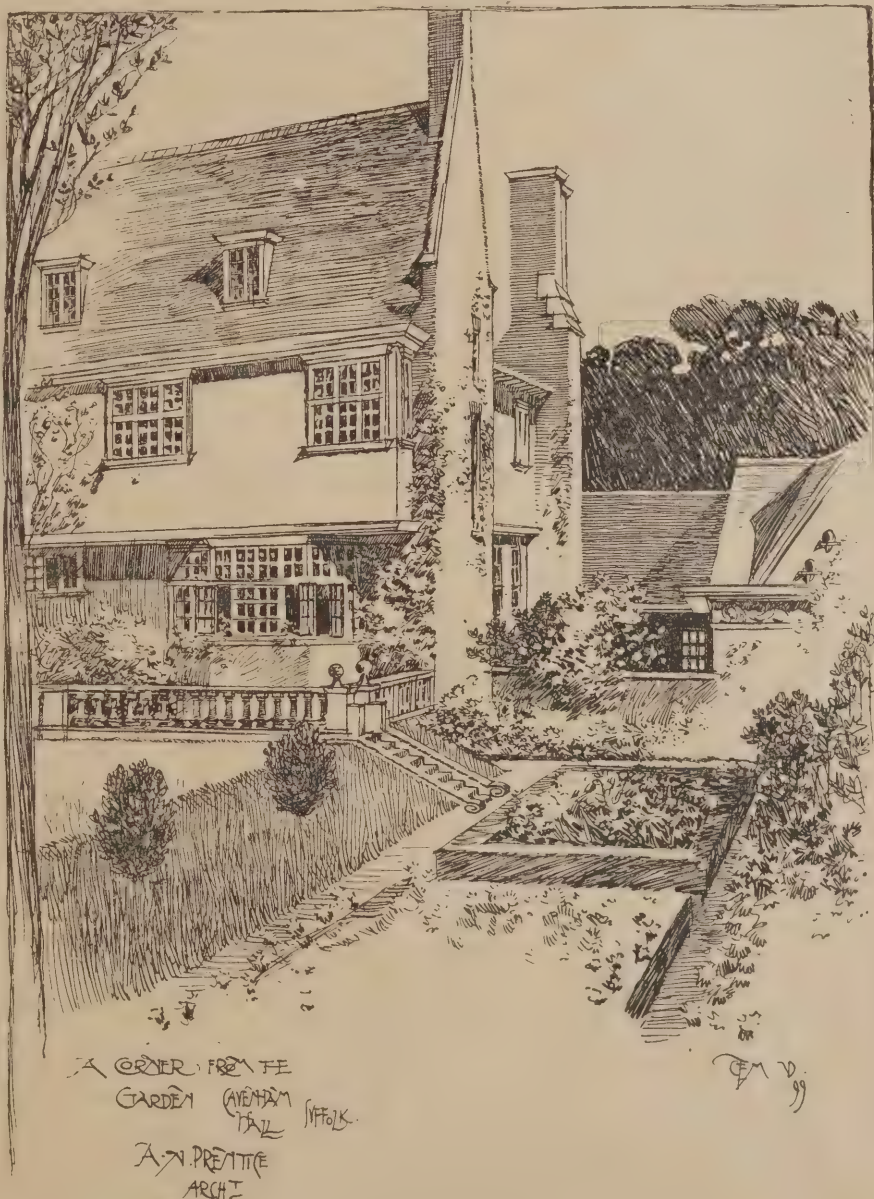
hall during the first weeks of its opening, makes one wish, perhaps ungenerously, that a more representative collection could have been made of a master so little known to the average Art-amateur of to-day. To give any adequate idea of his genius would have meant at least the bodily transplanting of the Turner rooms at the National Gallery, to which the present display is best regarded as a supplement. But in fact the Corporation would have been safe to assume complete public ignorance of Turner's works, on the principle that one never goes to see what is always on view. Very few of the really immortal canvases are here; scarcely even the masterpieces, except perhaps the "Rape of Europa"—that audacious and splendid exercise in the style he perfected, on the joyous side, in the "Marriage of the Adriatic," and tragically in "The Wreck." But to the student, a collection showing so much of Turner's secondary achievements, so many phases of development and transition, is of exceptional interest and value. Indeed, it would be wise to send the beginner to the National Gallery, and the more advanced student to the Guildhall. The romantic treatment of architecture, in which—being once set free from his Corinthian pillars by the discovery of the Gothic—Turner remains so unapproachable, is not exemplified on any large scale, but we are grateful for the water-colour series dealing with our English minsters, castles, and historic bridges that belong to the valley and river scenery he specially loved. Here in the second room are the Yorkshire abbeys, the glories of the dales; and, beyond these, the magnificent "Warwick Castle," "Stonehenge," which Ruskin calls "the standard of storm drawing," and the Pool of Bethesda, Jerusalem, "from which," he says, he "first learned what architectural drawing was." To the average eye it is not so much the drawing as the colour—or should we say the drawing in colour?—of Turner's architectural landscapes that most appeals. He knows how to select and transfigure buildings that will show white in a mist, golden in sunshine, grey in rain. And these things under his touch become part of the landscape itself, as it were, the very blossoming of the earth and air of the place; revealing the material world with the "will and idea" of man playing upon it, vainly or triumphantly as Fate decides; and in that light he seems to

see the habitations of man, his ships, temples, and palaces, appearing and disappearing between land and sky. Against these, the scanty figures of builder and victim stand out as the epitome of the drama; the last cry of the child in the lap of the inscrutable mother of all. It is perhaps this sense of the unity of life in the midst of conflict that yields much of Turner's imaginative power. He shows us, the creator perishing with the work of his own hands, and both together striving with the elements—these also listless and unreasonable slaves of the power that

—With equal mind  
Sees man control the wind,  
The wind sweep man away;  
Allows the proudly-riding and the foundering bark.

No other painter has so gripped us with

people will ever be able to go to an exhibition of Turner's works without these copious extracts from Ruskin in their hands. The suggestion implies no ungracious attitude to the compilers of the present catalogue, who have made excellent choice of quotations calculated to impress the greatness of Turner upon the ordinary mind. But it is difficult to forgive the inclusion of examples of Reynolds, Gainsborough, Romney, and other "contemporaries" of Turner, as being implicitly illustrative of his "school." Turner belongs to no school, and cannot be bracketed with his contemporaries as belonging to the same period of English Art. Their only point of contact with him is on the borders of his "classic landscape" phase, where he was still adventuring with bygone shades, and feeling his way, through the conventions that lay to hand, towards the expression of new and individual power. To introduce the "Grand Canal, Venice," by David



AT THE ROYAL ACADEMY, 1899.

the inconsequent terror of natural calamities. In the face of destiny, he makes Nature play a part like that of a Greek chorus; and with an almost Coleridgean mysticism shrouds the catastrophe with "tortured vapour tossed up like men's hands, as in defiance of the tempest." It is not given to every great artist to have a Ruskin to translate his pictures into hardly less brilliant words; and it is well so; for most of them would quarrel more with their interpreters than with the public beyond. One wonders whether

Roberts, into the presence of Turner is either an impertinence or a very feeble joke. Perhaps the Hanging Committee thought it might help to show off the better things. The cynic may find comfort in the fact that the atmosphere in this last room is the least seductive of the series, for the festoons of its hideous purple-red wall-hangings are loaded with dust half-an-inch thick, and growing thicker daily as the carpet sends up a cloud of witnesses to the dire need of housemaids at the Guildhall.

E. W.



## On Reflection.

### New Views in London.

LONDON has two buildings which rank among the supreme monuments of human genius—Westminster Abbey and St. Paul's Cathedral. With regard to both these buildings, a notable thing has been happening within the past few months. By the removal of the old houses, which formed the King Street block at the end of Parliament Street, a new and splendid view of the Abbey has been opened up. As the pedestrian approaches Westminster from Parliament Street he has a glimpse of a beautiful picture, which, until recently, was in great part hidden from his sight, and which a few years hence will be partially hidden again. Similarly in St. Paul's Churchyard the pulling down of some of the buildings at the west end of Cheapside has disclosed a new view of the Cathedral, which enables us to realise in a degree hitherto impossible the noble proportions of Wren's masterpiece. Here again it is but a fleeting glimpse, for the land hereabouts is so enormously valuable that it is scarcely to be hoped that artistic considerations will prevail over the commercial instincts of a "nation of shopkeepers" to preserve for future ages the beauty that has just been revealed. A people of any artistic sensibilities would recognise that to hide from sight the full view of these majestic monuments by building them in with mean houses, is not less an act of vandalism than to despoil the fabric itself. It seems strange that our forefathers should not have taken some pains to set in a worthy setting the priceless jewels in their charge. We cannot, however, reform our ancestors, though we might, now that the opportunity presents itself, decline to repeat their errors. At Westminster, if we cannot leave the splendid vista absolutely unspoiled, we shall at least give our glorious Abbey a building of some dignity as its companion. But what of St. Paul's churchyard? Are we to have new shops on the site of those that are being pulled down? The right thing to do, from an aesthetic point of view, would be to continue the demolition, and entirely sweep away the whole block between the Cathedral and the north side of Paternoster Row. But that consummation, though devoutly to be desired, is, we fear, very little to be expected.

**A Vain Appeal.** THE good taste and attentiveness with which the citizens of Edinburgh guard and maintain the rare magnificence and beauty of their noble city is well exemplified in certain clauses of the Edinburgh Corporation Bill, which is engaging the attention of a select committee of the House of Commons. One of these clauses proposes to give the local authorities of Edinburgh the practical control of the advertising stations in the city, and to make it illegal to set up advertisements except under licence of the magistrates. The restrictions asked by the Edinburgh Corporation are more vigorous than those which were suggested in the late memorial presented to the L.C.C., for the advertisements which may be held admissible and outside the discretion of the authorities are only such (not being illuminated) as may be exhibited "within the window of a building, or within or on a public conveyance, or within a railway station." The reason which prompted the introduction of this clause is stated to be the growing disfigurement of the northern city by advertisements. But alas, the committee, while granting the corporation powers over hoardings and advertisement sites, withheld the more particular powers asked by the bill. No doubt there are certain considerations and principles in-

volved in the matter, which would justify the decision from a statutory point of view; yet we cannot but feel that this decision is characteristic of the callousness of a supreme legislative body, which sees the architectural ideal materialised in the Admiralty Buildings, admires the æsthetic qualities of a famous pickle factory, and requires the signed opinion of thirty initiated persons to be published in its own daily paper, before it will begin to believe that New Scotland Yard is at all a fine design. The temper of the Scottish people and their pride in their city will, however, do much to cure the evil for which legislation is denied them.

### What to do with "Gift Horses."

IN the absence of a Government department charged with the control of artistic and architectural matters, such as exists in France, it is well that private members of the legislature should constitute themselves censors and critics of such acts of the Government as have any bearing upon artistic matters. The Earl of Wemyss who, in the rôle of Art Critic to the House of Lords, fills a far more useful position than in that of arch-enemy of Socialism, raised a very interesting point in a question he addressed to the Premier last Friday. He asked whether the Government would cause a rough model of the proposed statue to Cromwell, and of the pedestal, to be put up on the selected site, so that people might judge of the artistic effect of the monument before they were finally committed to it. The plan has certainly many advantages; it is commonly adopted in France and America, and is not unknown in this country. But Lord Salisbury, who replied in the light, bantering tone he seems to adopt when artistic matters are under discussion (or is it only when Lord Wemyss is the questioner?) professed to believe that the adoption of such a plan would lead to a wrangling of critics from which no agreement would be likely to result, and he suggested that it was better to trust to the *fait accompli*, to put up the statue in the first place and leave one school of critics to accept it with enthusiasm and another to submit to it with resignation. But in regard to this particular statue Lord Salisbury said the Government could not promise to do what was desired as the statue was not theirs to deal with; he quoted the proverb about looking a gift horse in the mouth, and seemed to imply that a Government having accepted the gift of a work of art and provided a site for it, had nothing further to do with the matter. That surely is a curious doctrine. With all due respect to the ancient proverb, the best thing to do with a gift horse often is to look it all over, not in the mouth only, and try it in the shafts, and then perhaps to decline it with thanks. Have not disasters great and small befallen the too trustful recipients of gifts, from the days of the Trojans until now? We can conceive it possible that a good many so-called works of art might be offered to the Government by artistic cranks and others which it would be sheer madness not to reject. Of course everyone knows that Mr. Thornycroft's Cromwell statue will not come under that category, but as a general principle it is surely the duty of the Government, as trustees for the nation, to exercise the same discretion in regard to the erection of buildings and statuary presented by private donors, as in the case of those commissioned by themselves, and paid for with the public money.

**The Liverpool Architectural Society** has decided to ask the City Council to rescind the resolution of April 5th, with reference to the demolition of St. George's Church tower and spire.

## A "BUILDERS' JOURNAL" COMPETITION.

### DESIGNS FOR A COUNTRY HOUSE.

IN accordance with our announcements, we have arranged a competition, to be open to all our readers, for designs for a country house.

All intending competitors should read carefully the following details, which have been revised and amplified since the original announcement of the competition.

#### The House.

As the competition is intended to meet the requirements of an individual correspondent, we append a statement of his wishes and, in making the awards, preference will be given to designs which most nearly comply with the following requirements:—

"I want a house long and low, with a large square entrance hall, to be used as a comfortable sitting-room, a wide staircase, and a gallery going partly round hall, a dining-room and boudoir for a lady, about six bedrooms, and three servants' rooms, with comfortable offices, &c. I want something a little unusual, either dark stained wood and thatch, or old timbers and thatch, and all kinds of angles and windows."

#### The Site.

The house is to be built on a level site on the crown of a bank overlooking a large garden which is surrounded by woods. The grounds in which the house is to be built cover an area of 6½ acres, and are situated in the neighbourhood of Hythe. The house will face N.W., but the main entrance is to be at the back, facing S. The drainage runs N.N.E. The house is to be long and narrow; the roof may be thatch or tiles, but not slate; large eaves are desired. In addition to the requirements given above as to the rooms, it is desired that there should be a small study and two bathrooms—one in connection with the best bedroom. No stable is required. The cost of the house should be from £1,500 to £2,000.

Any intending competitor wishing to view the site can obtain the exact address by communicating with the Editor.

#### The Drawings.

The designs submitted may include a perspective view, as well as plans and elevations, and must be accompanied by a brief specification (that is to say, a description of the house and the materials proposed to be used). They may be drawn to any convenient scale, but must be inked in and be without colour or wash.

Drawings must be despatched so as to reach the Editor of the BUILDERS' JOURNAL not later than May 24th; they must be submitted under a motto, accompanied by the name and address of the competitor, in a sealed envelope.

The drawings will remain the property of their authors, but we reserve the right to reproduce any we think fit.

#### The Premiums.

Premiums will be awarded for the three best designs, viz.:—

First Premium ...	£21 0 0
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The services of a well-known architect will be secured to act as assessor. The three premiated designs will be forwarded to our correspondent, who may commission the carrying out of one of them; but it must be understood that our responsibility in the matter ends with the payment of the premiums.



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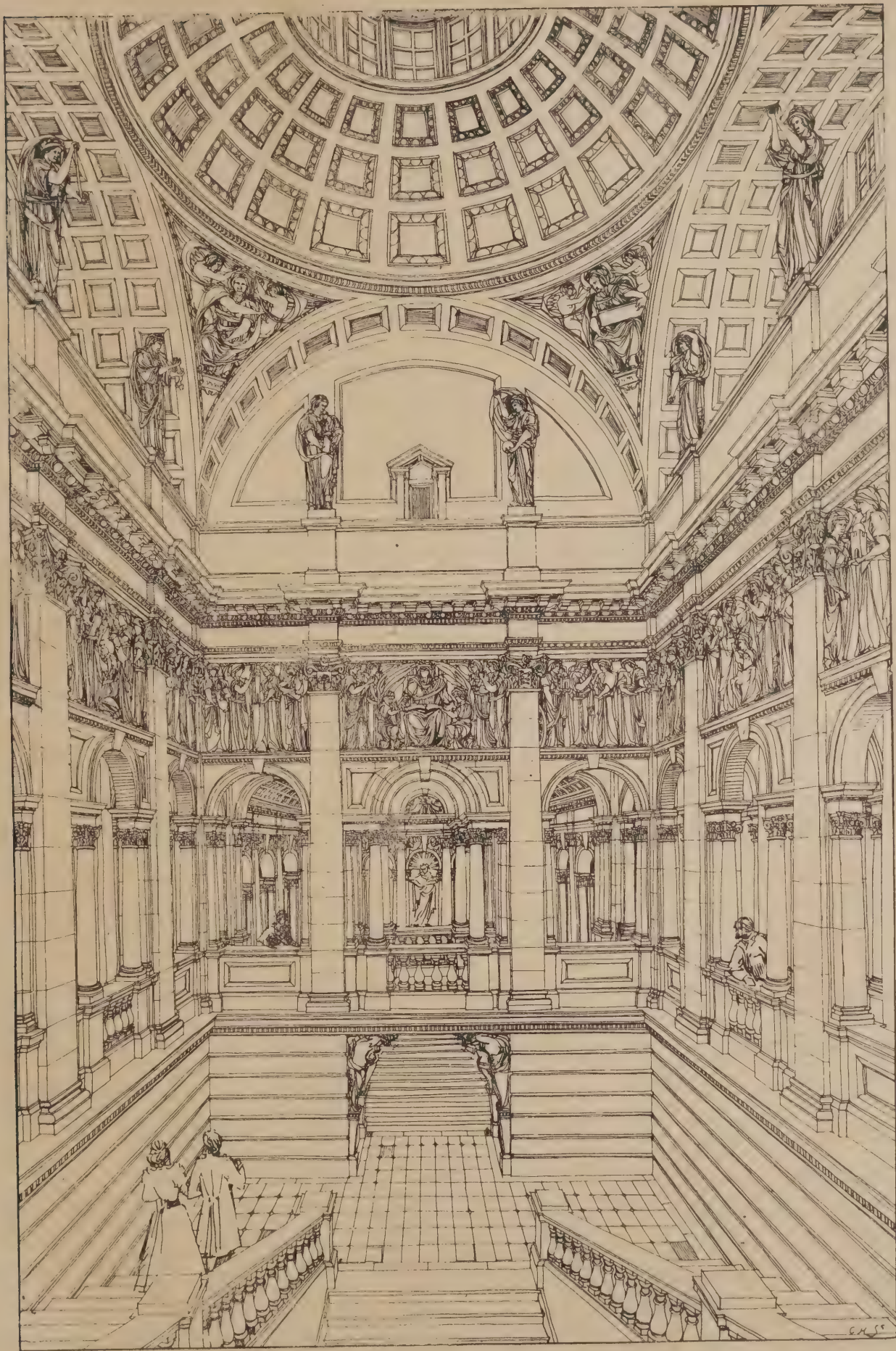


FROM A DESIGN  
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HOUSE  
BY E. F. REYNOLDS

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99

A COUNTRY HOUSE. E. F. REYNOLDS, ARCHITECT.





JOHN BELCHER ARCHT

VIEW OF MAIN STAIRCASE, THE GUILDHALL, CAMBRIDGE. JOHN BELCHER, ARCHITECT.



STEWART J. GILBERT  
OF THE  
UNIVERSITY OF ILLINOIS



# ARCHITECTURE AT THE ROYAL ACADEMY.

BY OUR SPECIAL REPRESENTATIVE.

ILLUSTRATED BY C. E. MALLOWS.

IT is a curious and interesting fact that there exist many folks who seek each year and hope to find some signs that the phase of art called British is steadily improving, moving on towards the perfection which will ultimately fit it for its proper place in the millenium. That is a beautiful theory, but, unfortunately, it won't fit the facts. They seek each year to find annual expression of the idea within the Academy walls. Of course it goes without saying they seek in vain, simply because their search is based on mistaken premises. Art does not progress. It revolves with all things in a cycle where the first is no more or less perfect than the last. To say that art progresses is as wise as to say that the world is flat. But the circumference is so immense and deceptive that at times it looks as if progress were really there. The deception is heightened by the occasional appearance of some attractive genius, or a group of them who, by their own strength, lift things for a while out of the mire, only to sink back again when the power that raised them is lost. You can see that instanced in the Gothic Revival, when every



one in those days was sure it was tending towards better things; another movement towards the artistic millenium. To-day probably no one doubts, whilst admitting the genius and sincerity of the creators of the Revival, it caused more evil than any other "cult" in the History of Art. There are parallel "movements" of to-day, only we cannot, unfortunately, see them from the perspective point of view of fifty years hence. If we could we should cease to mourn with a certain artist this year that Architecture "gets no forrader." There can be no real advance in an imperfect cycle with a gap in it, where (at the gap), as Marcus Aurelius says—and we presume he included the "simple" architect—all things will be re-absorbed in the Deity and the cycle will be recommenced afresh. Why then should our friend worry himself if the architecture at the Academy this year does not realise his expectations? He should know it is unwise to expect anything.

After all, it is merely a matter of opinion whether the Academy is a "good" or a "bad" one, mostly dependent upon the placing of one's picture. And whether "good" or "better" proves nothing. Not being biased by having our pictures skied, or on the line, or hung at all, we are free to say that the exhibition this year is an exhibition of small things which have far greater interest than their larger neighbours. There are exceptions to this, of course, and the exceptions are very important. There is, for example, the new associate, Mr. Aston Webb's large drawing of the "Britannia Royal Naval College, Dartmouth"; an immense building costing about

a quarter of a million, which is to be placed on a charming and delightful situation, close to the old training ship "The Britannia," a well-balanced, dignified group, reminiscent of the art of Inigo Jones and worthy of its distinguished architect. The setting out and placing of the building amidst its picturesque surroundings is most effective and the planning shows a master's hand.

Another large frame contains the water colour drawing, by Mr. Alfred Waterhouse, of the addition to the Prudential Assurance Co's. building in Holborn Bars, which is merely a continuation in idea and detail of the present work with a large tower in the centre.

Another member of the Academy, Mr. T. G. Jackson, sends his "New Radcliffe Library, Oxford," which is not an exception by the way, and holds honourable place on the west side. It does that and nothing more!

We miss, and it's a great miss too, the work of our greatest living architect. Why will Mr. Norman Shaw not enliven the room by his genius as in the days of "Wispers" and "Adcote," of "Craggside" and "Dawpool"? There is nothing in the Academy to compare in interest and distinction with those works of his. No man could make the room more attractive to artists. If he would exhibit perhaps our despondent friend might smile.

Characteristic of its author is the Church of Cowley St. John, by Mr. G. F. Bodley, A.R.A., illustrated by an equally characteristic water colour drawing by Mr. H. W. Brewer, whose hand loses nothing of its old cunning in the treatment of subjects such as these.

Professor Aitchison, R.A., sends a water-colour drawing of his Assurance Building in Pall Mall, which is pretty well known by this time, and so does not call for special comment. What, however, does call for special notice is the interior view, a most beautiful water-colour drawing by Mr. S. D. Adshead of the Salle d'attente in the Guernsey States House design, one of Mr. Mountford's most recent and successful works. This design has much simplicity and restraint. An exterior view (No. 1769) is also exhibited but the drawing with its photographic accuracy is in unfortunate contrast to the free luminous and simply-treated interior. The latter is certainly one of the most attractive drawings in the exhibition.

The Lady Chapel, Holy Trinity Church, Chelsea, is another exception of a most inspiring character. The design and drawing here both contribute in nearly equal measure to make the picture the most distinctive and remarkable in the room. There will be a great variety of opinion as to the wisdom of clothing Sedding's red-brick piers with climbing sculpture or painted decoration—it is not quite clear which it is—but there can be no question as to the artistic success of this picture as a whole, or of the artistry of its authors, C. W. Whall, H. Wilson, and Louis Davis. If there were a few more drawings like this and Mr. Adshead's picture, we should at least attract some of the painters into the room occasionally by a fine glow of colour, if not of architecture.

Another large drawing, by Mr. Raffles Davison, illustrates the new archbishop's palace at Canterbury, which is at present being built for Dr. Temple by Mr. W. D. Caroe. Here was a splendid opportunity—almost unique—of producing as fine a group of buildings as is possible in these days, in complete harmony with the grand old Gothic stones, as ever fell to the lot of a fortunate architect. We imagine there will be not a few artists who envy Mr. Caroe his work at such a place.

Mr. John Belcher has a very strong series of exhibits this year, the most notable, perhaps, being a very beautiful model of the upper portion of the tower of Colchester Town Hall—a refined and effective piece of work. In justice to its author, however, the name of the modeller should be given. The interior of the Council Chamber of the same building is shown by a lovely water-colour drawing, modestly labelled "A Diagram," by Mr. Joass. On the opposite side of the room is an interior by the same artist, where the decorative treatment is almost identical with that in the Colchester Council



Chamber; it illustrates an interior of the Hall at Brankston Castle, Dorsetshire, and the architect is Mr. Shekelton Balfour.

Mr. Leonard Stokes, always interesting and attractive, has a small drawing of a very large building, "New Convent, Colney, near St. Albans," a vigorous and masculine piece of Gothic work which is, nevertheless, more Stokes than Gothic. The whole design, both in plan and grouping, is handled in a masterly way. Mr. Stokes has done no better work than this, which is a refreshing pleasure to examine. Notice the delightful manner in which he has treated the quadrangle, and the fresh and original and yet simple treatment of the bays of the cloisters. Here surely is an artist's hand. The illustration by Mr. Frank Green deserves notice for the careful, effective, and sympathetic rendering of the subject. Mr. Stokes' other exhibits are "Addition to Soot Pray Farm," a charming treatment of additions to an old house, "2, West Drive, Streatham Park," showing the entrance front, hall, and drawing-room, and another very effective house design, square in plan and Georgian in treatment, but with that individuality one always finds in Mr. Stokes' work. All these are illustrated by Mr. Lucas in quietly treated pen drawings.

The Academy every year, with a humour everybody understands and appreciates, presents riddles for our amusement if not instruction; this must be so, otherwise how are we to account for such an exhibit as No. —. Well, no, we won't give the number; but we might





ask whether it was the drawing of the harmless sheep from the ark, or the in-offensive wooden horse which placed this frame upon the line or near it? As a comic rendering of animals this drawing is immense, but as an illustration of architecture it passes all understanding. Then, again, before the drawing below it, representing a huge pile of building in Whitehall, next the Banqueting House, we are speechless, awed by such a fearful waste of time and effort as this. It is said to be an example—a dreadful example—of “official architecture” (whatever that may be). We should suggest that the “officials” who produced this kind of “architecture” would be better employed at their old pastime of chloroforming the domestic fly. At least they would be kept from irritating

Messrs. Lanchester, Stewart, and Rickards also exhibit their design for the Godalming Town Hall, a capital design, admirably planned, which easily won the competition. The illustration is an effective wash drawing by E. A. Rickards. Another excellent design is that of the new Town Hall, Henley-on-Thames, by H. T. Hare, illustrated by C. E. Mallows. This is a very clever and interesting treatment of Renaissance work, with the parts well balanced, and the plain wall spaces effectively placed. Certainly one of the best designs Mr. Hare has yet done. The only criticism one feels tempted to make is that the Town Hall idea is not very clearly expressed.

As we have already suggested, a very high level of interest is reached in the collection of exhibits of domestic and semi-domestic work.



AT THE ROYAL ACADEMY, 1899.

their fellow creatures with such productions as this, to say nothing of the saving in good pens, ink, and paper.

To come gently back again to the subject, there is a large drawing (an exception which is not an exception) of “The Union Church, Queen Square, Brighton,” by Mr. J. W. Simpson, showing the institute, church and church parlours. The church is octagonal on plan, and crowned by a huge dome. The drawings (save the interior) are by Mr. Raffles Davison.

One of the best exhibits is a large pen drawing, very crisp, bright, and telling, illustrating Messrs. Lanchester, Stewart and Rickard’s design for the entrance to the New Law Courts at Cardiff, a strong and powerful piece of work, which well sustains their reputation. This portion of the design has evidently been revised and re-considered to a great extent since the competition, and has gained naturally a good deal by it. When completed, Cardiff will possess as fine a group of public buildings as any in the country, if the design and detail of the rest be equal in strength and power to this portion.

Chief in this is the most delightful model by Mr. Prior of his “Country House,” a fascinating study, which holds one’s interest in such manner that you return to it again and again, each time to find it more charming than the last. The plan, with the rooms arranged around a small courtyard, where is a kind of cloister as well, is very original and daring, and creates in the exterior points of picturesque beauty at nearly every corner. It is most artistically placed diagonally with the charmingly designed lines of the garden which surround it. We hope to give some sketches of portions of this model in our next issue.

Amongst the other notable pictures of domestic work are those contributed by Messrs. Bedford and Kitson of Leeds, who send some beautiful water-colours drawn by F. W. Bedford. One in particular is that showing a design for stables, with half-timbered gables at each end, and a broad expanse of unbroken wall between is made the subject of a fine water-colour drawing, showing an effect of evening light most ably treated.

In their exhibits 1791, 1695, and 1825, Messrs.

Hall, Cooper, and Davis contribute work excellent in design and admirably illustrated. To these and other exhibitors, such as Messrs. Niven and Wigglesworth, who send 2; A. N. Prentice, 3; C. E. Mallows and Grocock, 6; Frank Selby, P. A. Robson, Baillie, Scott, 4; Walter Millard, Beresford Pite, Harrison Townsend, we shall return in our next issue and give full details, a task which will be a pleasure, because all the work is so good.

## SOCIETY OF ARCHITECTS.

### ANNUAL DINNER.

THE fifteenth annual dinner of the above society took place on Wednesday evening last at St. James’s Restaurant, Regent Street, W. The president, Mr. T. Walter L. Emden, J.P., L.C.C., occupied the chair, the vice-chairs being taken by Mr. Silvanus Trevail, of Truro, and Lieut.-Col. F. Seymour Leslie, R.E., vice-presidents, and Mr. H. G. Quartermain, treasurer, and among the guests present were the Right Hon. E. Carson, Q.C., M.P.; Sir David Evans, K.C.M.G.; Sir Jas. D. Linton; Mr. J. A. Rentoul, Q.C., M.P.; the Very Rev. Dean Langton Geo. Vere; Mr. T. L. Corbett, Vice-Chairman of the London County Council; Mr. J. Claxson Preston, Master of the Carpenters’ Co.; Mr. P. A. McHugh, M.P.; Mr. Andrew Murray, the City Architect; Mr. Charles Welch, the City Librarian; Mr. W. T. Madge; Mr. Joseph Randall, the President of the Institution of Builders; Mr. Ellis Marsland, hon. secretary; Mr. C. McArthur Butler, secretary. Letters of apology for absence were read from the Lord Chancellor, Mr. Alherley Jones, M.P., Mr. E. Flower, M.P., Alderman R. Hind, and others. “The Houses of Parliament” was proposed by Sir D. Evans and responded to by Mr. Carson, Q.C., M.P., who said he felt himself in a congenial atmosphere, as he was the son of an architect, and was himself intended for the profession, but did not pursue his studies in that direction very long. The time he had spent at architecture he did not, however, consider wasted. The first brief he held had to do with architecture and building, and he found his technical knowledge of the subject a great help for getting round the idiosyncrasies of judge and jury. In replying to the toast he had to be impartial on all sides, and he was thus confronted with a difficulty. The House of Commons were the representatives of the people, and so long as the members fulfilled their obligations towards the people, so long they performed their duty as men. He was not sure that either House had done much for architecture, or had even discussed the question as to a greater symmetry of the buildings which might adorn their cities. A Scotsman did once in the House put a question as to who was responsible for certain inartistic gargoyles which had been set up. The First Commissioner of Works, who replied to the question, said that he was not responsible for any ugly appearances either outside or inside the House.

Mr. Corbett, responding to the toast of “The London County Council,” referred to the criticism with which the designs for the Vauxhall Bridge had been received, and said that he could only congratulate himself that the tide of criticism had rolled somewhat further down the Thames, and that the County Council for once found itself in the respectable society of the Dean and Chapter of St. Paul’s.

Mr. Rentoul proposed the principal toast, and the president in reply, said that the first aim of the society was to achieve the registration of architects. They were the only profession which dealt much with the health and wealth of the people, and was not directly recognised by the State. Architects were left in the position that anyone could put up a brass plate and call himself a member of the profession. Whenever registration was brought about it would do much to prevent the intrusion of the false and erroneous in architecture and benefit the public at large as well as the profession. Many other alterations in the law were also called for.



Mr. Silvanus Trevail, in proposing "The Arts and Crafts Allied to Architecture," observed that the British Government and our municipalities were deplorably mean and stingy in the amounts allotted for public buildings and their decoration as contrasted with the public spirit displayed in all architectural and decorative matters in the United States, France, and Austria.

Sir James D. Linton, who responded, said, when he recalled the position of the allied arts and the advancement that had been made by private means and opportunities in spite of many drawbacks, they had much to be proud of. The relation of the decorator and the architect was an interesting point. It had been said that the decorator should be under the direction of the architect. That was a right conclusion, but it should not exist, because in the old days there were no painters or decorators who were not just as able architects. Among a number of instances the name of Michel Angelo might be mentioned as a painter or decorator-architect. There was a difference of feeling among architects and painters, and by closer comradeship painters desired to overcome this difficulty.

The remaining toasts were "The Visitors," given by the president, and acknowledged by Mr. J. Claxson Preston, and "The Press," proposed by Lieut.-Colonel F. S. Leslie, and responded to by Mr. W. T. Madge of "The Globe." The musical programme was under the management of Mr. Albert Fox.

## HOUSING OF THE LABOURING CLASSES.\*

By P. FYFE.

(Continued from page 169, No. ccxix.)

NOW, what may be fairly considered the "due proportion" which a labouring man or a poor person should pay out of his weekly wage for rent? From an inquiry, which was conducted by Professor Mahaim in the town of Liege in Belgium, extending over 1276 representative houses, it was found that while the average household income of each tenant was 17s. 4½d. per week, the average rent paid by each was 2s. 3½d. per week. As this represented a payment by the labourer of 14 per cent. of his wages for house rent, Professor Mahaim stated he considered this proportion too high. In conducting a similar inquiry among the tenants of our ticketed houses in Glasgow, I caused an investigation to be made (1) of the present number of these houses of our poorer classes, (2) of the cubic feet of air space each contains, (3) of the rents paid in each case, and (4) of the weekly wage earned by such households. Of course it will be understood that the last return, being personal in its character and based on information given by the tenants themselves, allows room for error, yet I believe it is approximately correct. I think we may claim the 78,300 persons now inhabiting the ticketed houses are mainly our poorer respectable labouring classes mingled with that unfortunate residue of drunkards, prostitutes, and ne'er-do-wells generally, which unhappily infest, like a cankerworm, the populous centres of all large cities. Of course, there are besides these 78,300, as many as 361,298 men, women, and children in this city dwelling in one and two apartment houses which are not ticketed.

### Statistics of Glasgow Tenements.

At this present day in Glasgow there are 14,946 single-room ticketed dwellings sheltering about 49,000 inhabitants, and 6283 two-roomed ticketed dwellings, occupied by 29,300. These are the people who sit precariously in their homes, liable at any moment to be ousted therefrom by the edict of the Health Committee, or by a future improvement scheme launched and carried out by the Improvement

Trustees. The average cubic air space of these 14,946 one-apartment houses is 1323, or legally sufficient for three adults, or two adults and two children under ten years old. The average rent paid for these dwellings is 8s. 2½d. per month, ranging from 7s. 9d. per month in the Central District and in Maryhill, up to 9s. 2d. per month on the south side of the river. Ten years ago there were 16,413 of such houses, with an average rent of 7s. 11d. per month. The 6283 two-apartment ticketed houses contain on the average 1848 cubic feet of air space, and are rented at 10s. 10d. a month, ranging from 10s. 1d. and 10s. 2d. in Maryhill and the Central District respectively up to 11s. 10½d. in the Western District of the city. Such houses may legally accommodate four adults and one child, or two adults and five children under ten years of age. Ten years ago the number found was 6613, rented on the average at 10s. 3d. per month. All such rents include payment for stair gas and water. These rents reduced to weekly payments are respectively: one room 1s. 10½d. per week; two rooms 2s. 6d. per week. The average earnings per week of the one-apartment house tenant is found to be £1 0s. 6½d., and of the two-apartment tenant £1 6s. 5½d.

### The Tenements and their Inmates.

Working out these average figures, we find that our poor are paying 9½ per cent. of their earnings in the one case and 9½ per cent. in the other for house accommodation. Taking this against Professor Mahaim's 14 per cent., as found at Liege, Glasgow may be congratulated. But we must not deduce too much from averages, and we cannot forget that the house accommodation under consideration is of the meanest description, much of it in backlands where the air is confined and readily polluted,—where light enters only indirectly—and where outlook or window view is restricted to a stone or brick wall from 8ft. to 14ft. distant. Moreover, the average figures placed as the labourers' income are greatly disturbed by persons found living in these houses who are not poor labourers, but are tradesmen and artisans of the better class, whose household weekly earnings run from 30s. up to 66s. Private landlords do not make any inquiry into the earnings of their tenants, further than assuring themselves, as best they may, that they can pay in advance their monthly rent. Hence we find numerous examples of men and their families in ticketed one-apartment houses who earn such weekly wages, while in the two-apartment houses it is common. It is next to impossible to offer a true explanation of the conduct of men who with 35s. to 45s. weekly condemn their little ones to a life in the unwholesome slum.

### An Important Question.

These considerations suggest the question: Why are those dwellings existing at all, to which, dismal and unwholesome, these men may drag their wives and offspring? Why are even the poorer labourer and casual worker compelled by their own and outside circumstances to resort to homes such as we have described, such as may be seen by any of us any day? Such is the question that is ringing at present through the land. It was asked last summer by many voices in Dublin at the Conference of the Royal Institute of Public Health; it was asked last autumn in Birmingham at the Conference of the Sanitary Institute; it was asked a few months ago at the Glasgow Philosophical Society by my friend Mr. John Mann. In each case the solution of the question was the same, viz., that corporations, municipal authorities, sanitary authorities, must wrestle with the problem, close all insanitary houses, and build labourers' dwellings, light, airy, and wholesome, and rent them at rates within the paying capacity of the poor, and this even at the risk of a deficit to be made up out of the general rates. Before endeavouring to lay down a basis for the solution of this great problem on lines of experience, and as exactly as the science of land and house rent will allow, I ask your attention to the present position in this city and to correlative facts surrounding the occupancy of the one and two-apartment houses here.

### The Position in Glasgow.

In Glasgow there are now, I am informed, 69,000 two-apartment houses and 36,000 one-apartment houses, or, in all, 105,000 such humble dwellings, estimated to contain 439,598 of our total population of 700,382 souls. I am also informed that at a very recent survey 1500 of the former houses and 1200 of the latter were found unoccupied. But out of this total of 2700 unoccupied houses, only 480 are rented at £6 per annum and under. Putting 10 per cent. of their earnings as the amount labouring men may reasonably be expected to spend in house rent, we find the above number of unlet houses is all that they could find, if the authorities, either as Health Committee or Improvement Trustees, closed the doors of their present cheap abodes. Moreover, if we look at the problem sectionally it is found that in certain districts any sensible disturbance of these people would be calamitous. For example, on the whole south side of the river there are only thirty-six such low-rented houses, while in the whole west end of the city from Buchanan Street and Port Dundas Road, excluding Maryhill, there are only eighty-two. These facts show how fatuous it is to speak about the Health Committee carrying forward meantime a strenuous closing policy until blocks of sanitary dwellings are provided for the people to be disturbed. No one with an intimate knowledge of the remaining slums of the city, and the dark, dismal apartments to be found there, could withstand the conviction that much clearing work still remains to be done, but at present our hands are stayed. Since the year 1890, when special powers were given to the Health Committee to close insanitary houses, about 600 have been closed, and 1500 persons have been scattered to find such dwellings as they could. But latterly the task has been a painful one, in the face of the appeals of the poor people, and their sad anxiety, born of of the growing difficulty to find a new home at a rent low enough for their means.

### The Classes to be Provided for.

While endeavouring to show that the Corporation should at once proceed to build suitable blocks of labourers' dwellings at low rents, I also wish to clear away any impression that such dwellings ought to be erected for and tenanted by the dissolute and profligate of our lower population. I know that is the notion of some social reformers in industrial housing. A little reflection will show even the most ardent reformer that for those whose habits of life are known and proved to be vicious and destructive, no person, not even a benevolent municipality, can safely provide good and habitable houses. But there are two classes closely mixed up with these I have been speaking about, for whom every municipality should care in the most sedulous manner—viz., the respectable poor who have some furniture, and those who, through stress of circumstances or ill-health, have had gradually to sell off their belongings, and are left with little or no domestic stock-in-trade. Of the first class little need be said. They are for the most part the dumb class, fighting with poverty in silence—people whose small houses, ill-situated as they are and full of defects, are yet clean, and often bright with plates, cups, saucers, and cheap glasses shining on the shelves. Only when closely pressed are their poverty and complaints made manifest, and, painfully aware of their circumstances, and grieved at the rowdiness of neighbours unlike themselves, these "rather bear the ills they have than fly to others that they know not of."

(To be continued.)

Devonport Isolation Hospital, situated at Bladderley, is in urgent need of enlargement. The Local Government Board opposed this in 1894, as the proposed buildings were not considered to be a sufficient distance from the boundary and other buildings. They have, however, just withdrawn their opposition, and the buildings will probably be proceeded with shortly.

\* A paper read before the Glasgow Architectural Society.



# R. I. B. A.

## THE ANNUAL REPORT.

THE annual general meeting of the Royal Institute of British Architects was held on Monday evening, at 9, Conduit Street, W. The minutes of the previous meeting having been read and confirmed the annual report was considered, from which we have selected the following points as being most likely to be of interest to our readers: Since the last annual report, on May 7th, 1898, twenty meetings of the council have been held, of which the council elected on June 6th, 1898, have held seventeen. These are exclusive of meetings held by committees of Council. In the course of the year twenty-five Fellows have been elected, thirty-one Associates, one Hon. Fellow, one Hon. Associate, and one Hon. Corres. Member. Of the twenty-five Fellows, eleven have been elected by the Council under the new proviso to Bye-law 9, six being presidents of allied societies, and five having been unanimously recommended by the councils of allied societies. The numbers in each class of subscribing members stand as follows:—Fellows, 612; Associates, 1003; Hon. Associates, 47. Preliminary and Intermediate Examinations were held in June and November, 1898, in London, Birmingham, Bristol, Manchester, and York, and Final Examinations in London. The number of passes were as follows:—Preliminary Examination: Summer, 58; Autumn, 46. Intermediate Examination: Summer, 53; Autumn, 32. Final and Special Examinations: Summer, 15; Autumn, 16.

During the year 196 gentlemen have been registered as Probationers, the number of whom stands at 1098; and 85 as Students, the number of whom now stands at 303. The Annual Dinner this year is to be held on Tuesday, 27th June, in London, at the Whitehall Rooms, Hôtel Métropole. Since the issue of the last annual report, the Aberdeen Society of Architects has been admitted to alliance with the Royal Institute. The Council have taken public action with regard to the New Vauxhall Bridge and the Local Government Bill. Special Committees of the Institute are at present sitting to consider respectively the following subjects: The holding of the Institute Examinations in the Colonies; proposals by the Association of Technical Institutions that certain certificates of the Science and Art Department should exempt from portions of the Preliminary and Intermediate Examinations; the administration of Building Bye-laws in rural districts. At the request of the Court of Common Council of the City of London, the Council have nominated six architects to send in designs for the new Sessions House, Old Bailey. The Council announce that since December 31st they have been enabled to invest £1,500 in Tasmanian Government 3½ Per Cent. Stock.

### Report of the Art Standing Committee.

The Art Standing Committee report that they have held seven meetings since the publication of the last report. Mr. Alfred Waterhouse, R.A., LL.D., was re-elected chairman; Mr. Macvicar Anderson, vice-chairman; and Messrs. E. W. Mountford and Owen Fleming were reappointed hon. secretaries. ST. PATRICK'S CATHEDRAL, DUBLIN.—Plans and particulars of proposed additions to St. Patrick's Cathedral, Dublin, were submitted to the Committee, who were asked to state: (a) Whether the addition of modern building to the Cathedral was legitimate and reasonable; (b) whether the plan submitted was sufficiently conservative and considerate towards the original plan of the thirteenth century. The Committee (a) determined that, assuming additional accommodation to be necessary for the efficient performance of the services of the Cathedral, it would be legitimate and reasonable to provide it; but (b) suggested a modification in the proposed grouping of the buildings. KEW BRIDGE.—The Committee, having had this matter under their consideration, urgently recommended the adoption of granite or stone as the material for the bridge, and, by the instructions of the

Council, the Secretary wrote to the County Councils of Middlesex and Surrey conveying this recommendation. In reply the Institute was informed that stone would be used. VAUXHALL BRIDGE.—This subject has received further consideration, and, as the result of some correspondence between the Secretary of the Institute and the Chairman of the London County Council, the Chairman (Mr. Waterhouse, R.A.), with Messrs. Statham and Mountford (hon. secretary), waited upon the Chairman of the London County Council and stated their views as to the design prepared by Sir Alexander Binnie. HISTORIC BUILDINGS IN LONDON.—At the invitation of the London County Council the Committee invited Messrs. Brydon, Mountford, and Young to represent the Institute at a Conference held by the Council. The Conference determined to prepare a register of all buildings of architectural or historic interest in the County of London, and a Committee was appointed, of which the Hon. Secretary of the Committee is a member. FLORENTINE MONUMENTS.—The attention of the Committee having been directed to extensive alterations that appeared to be contemplated in the ancient quarters of Florence, steps were taken to assist the English Committee who had been appointed to deal with this matter. Signatures were obtained from members of the Institute and its Allied Societies to a memorial of protest, which has been presented to the Municipality of Florence. ARTISTIC COPYRIGHT.—The Committee have had under consideration the questions of Artistic Copyright, and Messrs. Statham and Caroe were appointed to represent the Institute at the Conference. DECORATION OF ST. PAUL'S CATHEDRAL.—This matter is engaging the attention of the Committee. The following subjects have also received the consideration of the Committee:—Portrait of Sir William Chambers; Trinity College, Dublin; the Casino at Mont Saint-Michel; the Protestant Cemetery at Rome; the Kapell-Brücke, Lucerne; and the proposed Arts and Crafts Exhibition.

### The Report of the Literature Standing Committee

states that the Librarian has now completed the Supplement to the Brandon Catalogue up to the end of the year 1898. The catalogue is in type, and will shortly be issued to members. The Librarian reports to the Committee that during the twelve months ending March 31st of the present year 262 volumes and twenty-four pamphlets have been added to the library of the Royal Institute, exclusive of periodicals, reports, and transactions of societies, and parts of works issued in serial form. The number of volumes presented to the reference library was 169. The works purchased comprise ninety-six volumes, out of which sixty-one volumes were added to the loan library. The attendances of readers and borrowers during the year numbered 4241, the number of works issued on loan being 1163. The number of volumes consulted in the reference library during the year was 6322.

### Report of the Practice Standing Committee.

The Practice Standing Committee report that the usual monthly meetings of the committee have been held. Mr. J. Douglass Mathews and Mr. Thomas Harris were re-elected chairman and vice-chairman respectively. Mr. J. Osborne Smith and Mr. C. H. Brodie were elected hon. secretaries, Mr. Smith taking the place of Mr. Woodthorpe, who resigned. The points raised on the Institute Conditions of Contract referred to in the last report, and also other important questions on these conditions, referred to the Committee by the Council were fully considered, and reports thereon sent to the Council, special attention being called to the decision in the Court of Appeal in the case of Dodd v. Churton (March 19th, 1897) as affecting all contracts. The Lords Justices decided that the giving of extra work nullified the time for completion clause and consequent fine for non-completion. A report was also sent to the Council on the question of the liability of architects for licence as appraisers, intimating that, in the

opinion of the Committee, they are not in ordinary practice liable to this tax. The consideration of the Revised Schedule as to the professional charges to be made by architects was continued and concluded, and the proposed new schedule sent to the Council. After amendment by the Council, assisted by the Chairman and Vice-Chairman of the Committee, this was finally ordered to be issued as an Institute paper at a Special General Meeting on June 27th, 1898. The Schedule, as finally amended and adopted and issued, was printed in the Institute "Journal" of July 23rd, 1898. At the request of the Committee the Council have agreed to obtain counsel's opinion as to the liability of architects under the new Workmen's Compensation Act, and a list of questions to be submitted to counsel was drawn up by the Committee. A suggestion that the Committee should be allowed to interview and advise members of the Institute as to difficulties arising in their practice was not agreed to by the Council, on the ground that this work was already undertaken by one of their own committees. The Committee have considered the London Government Bill, and reported thereon to the Council.

### Report of the Science Standing Committee.

The Science Standing Committee report that they have held six meetings since the publication of the last annual report, with an average attendance of eight members. Mr. P. Gordon Smith was appointed chairman; Mr. W. C. Street, vice-chairman; and Mr. H. D. Searles-Wood and Mr. Max. Clarke, hon. secretaries. The Committee are still awaiting the publication of the results of the experiments for the purpose of ascertaining the strength of different kinds of brickwork. The Committee, having reported to the Council on the subject of standardising the size of bricks to the effect that they should like the matter referred back to the Committee with a view to coming to an agreement with the Brickmakers' Association to fix the standard, appointed a sub-committee to meet a sub-committee appointed by the Institution of Civil Engineers, and a joint standard was agreed to by the joint committee and referred to the Association for discussion. The joint committee have not been able to meet to consider the replies of the Association owing to the absence from England of one of the members of the engineers' sub-committee, but it is hoped that the standard will be agreed on in the course of a few months. On the subject of building regulations for the purpose of reducing the liability of warehouses, &c., to destruction by fire, an interesting paper was obtained from Mr. R. W. Gibson, and read at a general meeting of the Institute. Further information is being obtained.

### Finance.

The accounts of ordinary funds for the year ending December 31st, 1898, show that there was a balance of income over expenditure of £1,241 9s. 10d., the income being £6,592 3s. 11d. The Council estimate for the twelve months of 1899 an income of £6,700, and a balance of income over expenditure of £1,100, exclusive of entrance and final examination fees.

The report having been read, scrutineers for the annual election of the Council and Standing Committees were elected, and auditors for the ensuing year of office were nominated. The meeting then appointed, under Bye-law 43, the Statutory Board of Examiners under the London Building Act, 1894, and other Acts of Parliament, for the ensuing year of office.

The next meeting will take place on May 15th, when Mr. H. H. Statham (F.) will read a paper on "The Architectural Element in Engineering Work," and not, as was previously announced, on "Nature and Architectural Ornament."

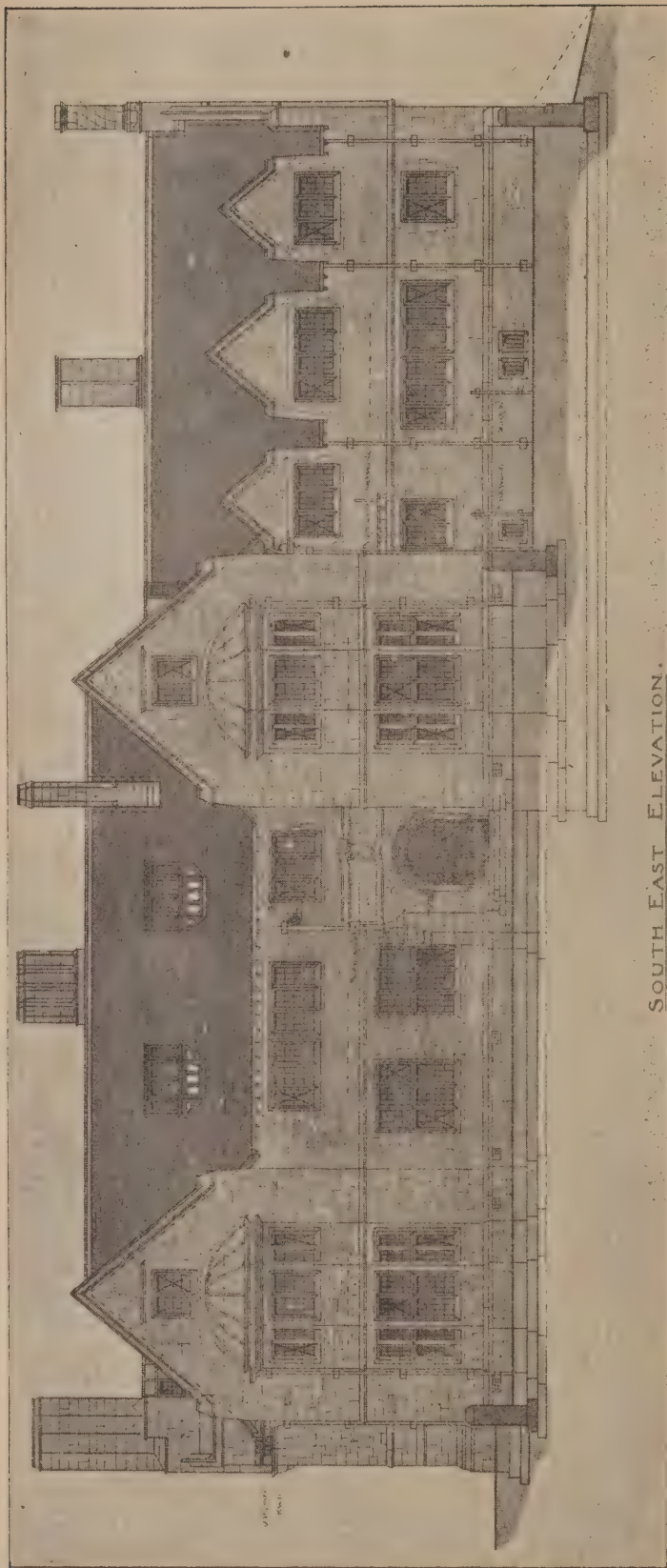
The Death of Mr. Joseph Wolf, the great animal painter, took place on April 20th.

The New Technical Institute at Selly Oak, Birmingham, is in course of erection. It will cost about £3,500, including £450 for the land.

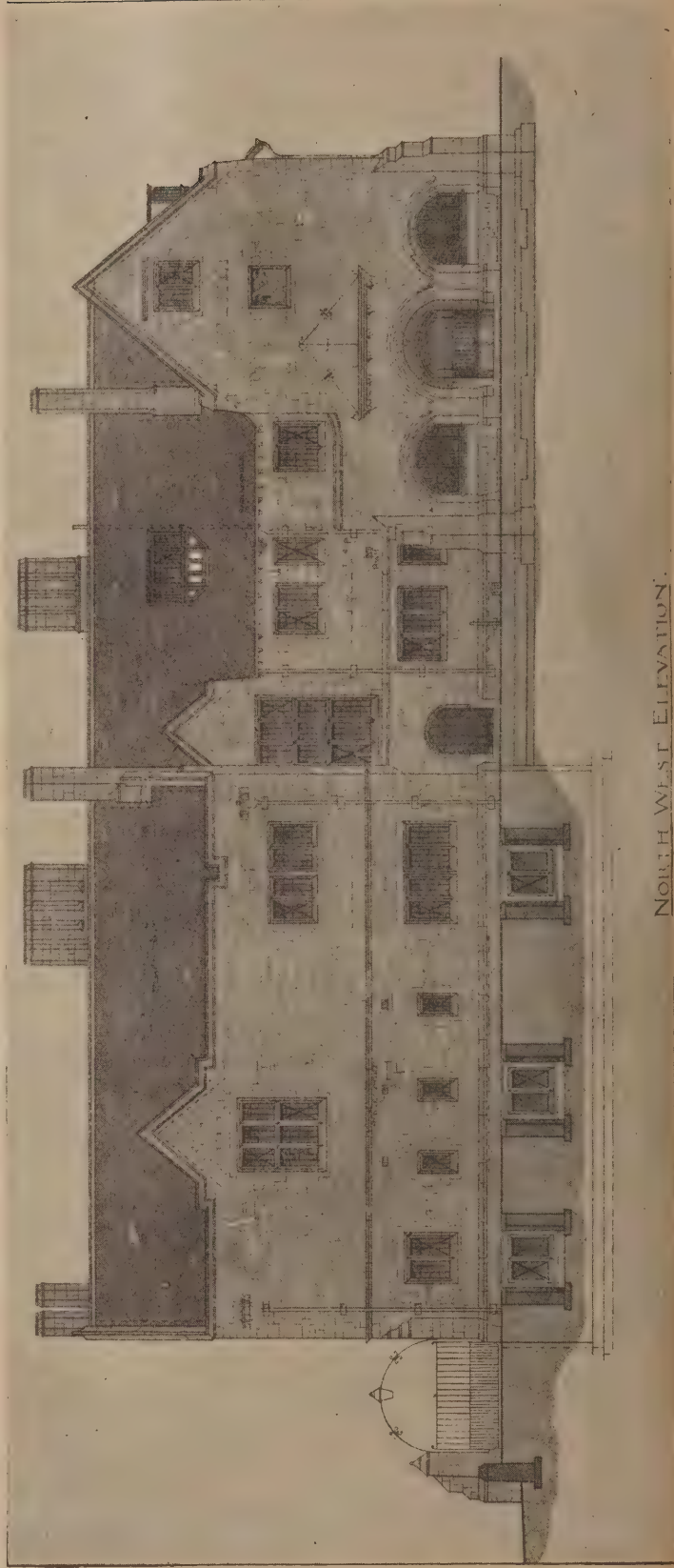






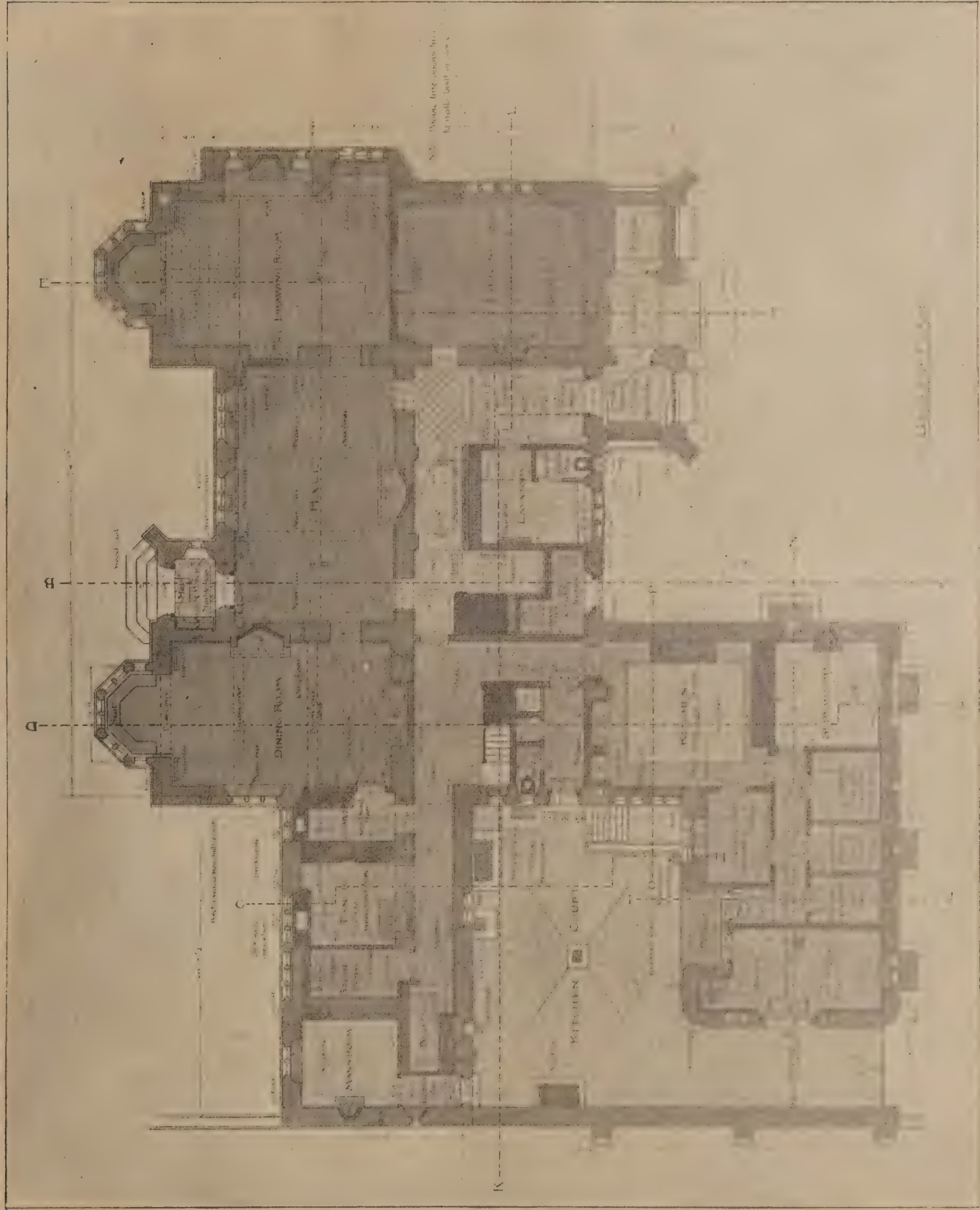


SOUTH EAST ELEVATION.



NORTH WEST ELEVATION.





BRAHAM, NEAR PERTH: GROUND PLAN. FRANCIS W. BEDFORD, ARCHITECT.



PROPERTY  
OF THE  
LIBRARY OF THE  
UNIVERSITY OF ALABAMA



## THE ARCHITECTURAL ASSOCIATION.

### SPECIFICATIONS.

AT the meeting of the Architectural Association last Friday evening a paper by Mr. F. W. Macey on "Specifications" was given. Mr. Macey was unable to attend, and Mr. G. B. Carvil read the paper. The president of the Association, Mr. G. H. Fellowes Prynne, was in the chair. It was announced by the secretary that the scrutineers of the votes for the election of the committee were Messrs. W. A. Jeckells, A. Smithiers, and W. A. Webb.

Mr. Macey's paper was as follows:—

There has been so much recently written upon the subject of specifications, that it is difficult to suggest any new or original ideas, and I fear that the few remarks I have to make may be somewhat wearisome to many present, and seem like going over old ground. But those who have not given the subject any special consideration may find some of the suggestions not wholly unprofitable.

And if further excuse is necessary, I do think that to hear a question discussed creates a more lasting impression than that of mere reading.

#### The Specification.

A specification may be either lengthy or curtailed, according to the particulars given upon the drawings. Some engineers favour a short specification and prefer to put as much written information as possible upon the drawings, one reason for this being that engineers usually supply a number of detail drawings with their contract plans, which enables them to put many notes upon those drawings. On the other hand, architects do not usually supply many detail drawings, consequently somewhat lengthy specifications are necessary.

To my mind, either method may be adopted if the requisite information be clearly given.

I can conceive of a set of plans prepared and written up so fully in detail that a specification as a separate document might become unnecessary; this sometimes happens in a certain class of work. On the other hand, I can scarcely imagine a specification so full in detail as to dispense altogether with the plans, unless it related to a very small and simple erection or to general repairs or decorations.

But without further discussing these two methods I would ask you to assume that both plans and the specification are necessary for general work; I will then suggest a form of specification which shall be curtailed and yet shall not detract from a full and clear description of all parts of the work.

A specification should not supersede the particulars given upon the drawings, but should more fully explain those parts which the drawings do not clearly illustrate, or which are in any way obscure. It is impossible to show every detail or give every particular upon the drawings, consequently a full description of those parts becomes absolutely essential in the specification.

I take it that the plans give the general arrangement of the building, and the specification should describe the details of that arrangement. The plans should have figured upon them every important dimension, such as the lengths, widths, and heights of the various distinct parts of the building; the thickness of walls; the depth and width of the concrete foundations; the sizes of floor joists, roof, and flat timbers; the widths and heights of doors and windows; and all other similar and important parts and items. It is seldom that plans to a small scale are so accurately drawn as not sometimes to be obscure with regard to the sizes of certain parts unless these parts are given in figures.

The only other particulars in writing to be put on the plans would be the names of the rooms and other parts of the building, together with any notes or references which might assist the description in the specification. With regard to small scale drawings, do not labour the elevations by showing every

brick and slate. Working drawings will be far clearer without too many lines, and there is no need to finish them like a picture.

But in the specification I would include everything except the general dimensions of the various parts of the building. Of course, the sizes of the joists and roof-timbers are always described in the specification, as well as sometimes being given on the plans; and I see no harm in stating the thickness of the various walls, the depth and width of the concrete under the walls, or any other detail of the building. A specification which is full but at the same time concise and to the point will prevent mistakes and misunderstandings when the building is in progress. Presuming, then, that the plans are before you, but not in too great detail, and that you have decided to write a rather full specification—what, then, is the first consideration?

You must have a complete knowledge of your subject—that is, a full grasp of the details of building construction, and of the value and properties of materials. In other words, you must know what you want to describe, and, knowing that, you must be acquainted with the

#### Requirements

attendant upon those wants; and you may take it for granted that until you are proficient in these matters you will never be able to commit to writing the proper descriptions needful to the erection of a building.

Therefore, I say that a complete knowledge of all the requirements and details of the various trades coming within the scope of the architectural profession is the first consideration to efficient specification writing; and I might also add a knowledge of the various Acts relating to buildings. But it may be said that it is impossible to know everything, and when in doubt the only way is to put a provisional amount to cover any such point, and to obtain afterwards the information from a friend or specialist. This is true, and may be the only course to adopt at the time, but ready and accurate knowledge will benefit all parties concerned.

The question then arises: What is the best way to obtain such knowledge? I know of only two ways, study and observation. What I do myself is first to read any works obtainable which bear upon any doubtful point, and I would also add that much useful information can sometimes be gained from trade catalogues. I then discuss the matter on every possible occasion with anyone I come across who has any knowledge of the subject, and, further, I keep my eyes open and learn all I can from what is going on around me. You have only to pass down any street where building operations are in progress to gain many practical hints.

#### The Draft Specification.

You now proceed to write the draft specification. This is often hurriedly written, much being left to alter and supplement when revising for fair copying. This is a great mistake. A draft specification should be written with care and thought. Being fresh to the matter, even so dry a subject creates a certain amount of interest, and if you concentrate your mind upon the subject you will be less liable to omit many small items. Therefore, let the first draft be as complete as possible.

I might suggest that when engaged upon the plans, it will be found of great assistance if notes are made of any obscure item coming under your observation at that time.

When sending out a number of fair copies see that they all agree.

#### Architect or Surveyor?

There is one matter which I should perhaps have referred to sooner. Should the quantity surveyor write the specification for the architect? In the abstract it seems absurd to ask such a question were not this practice so frequently followed. Personally, I think the architect should write his own specification, and not delegate the work to another. A quantity surveyor cannot know what is in the architect's mind, therefore it is

impossible for him to describe fairly that which embodies the architect's best ideas. It is unjust to the quantity surveyor to ask him to attempt to do so. It is also unjust to the client, and the architect has no right to accept payment for work done by another. One other word with reference to the quantity surveyor. When he takes out the quantities it is usual for him to make notes of any omitted items on the architect's specification. Should he not do so, however, the architect must run through the bills of quantities and adjust the specification to them before the contract is signed. Reverting to the subject-matter, a full specification will save many an anxious moment. Constant disputes occur with the builder, many extras crop up owing to imperfect wording and omissions—ordinary care would prevent all this. And remember always that a specification is a legal document.

Bearing somewhat on this incomplete description of work, attention might be called to the fact that one so often sees in a specification wording to this effect:—"That the builder is required to perform a certain work all complete," or "all as required," or "as necessary." This generalising shows the architect's ignorance of what is required; and it is not reasonable to ask a man to estimate for something of which you yourself do not know the requirements. Consequently, you either get an unfair estimate or an incomplete work, or else a squabble ensues with the builder as to what was intended or required. Should you ever be in this difficulty of not knowing what is necessary, then the best plan is to put a provisional amount and let the item work itself out in execution. Therefore, let your terms be definite and clear. Some make a great point as to which is the correct word to use, "provide" or "supply." I think it very unimportant. There certainly is a slight difference; but, at the same time, to provide you must supply, and to supply you must provide.

#### Describing the Work.

Agreeing, then, upon this point that a specification must be somewhat full, and, consequently, lengthy, what then is the best way to curtail the descriptions without detracting from the merits of the document. There are several ways. Many items which will apply to several parts of the building under similar conditions may be generalised. Thus, take, for example, the skirtings to a building. A general clause applicable to all skirtings may be inserted, somewhat to this effect: All skirtings to be rebated to floors, tongued and mitred at angles, tongued at heading joints, housed into architraves, returned and mitred at ends, and fixed to double splayed narrow-framed grounds with dovetailed backings and filling out blocks, and plugged to walls. The only further description then necessary will be to refer to each particular skirting such as:—

Attic skirtings 7in. by 1in. plain deal.

First-floor skirtings 9in. by 1½in. moulded deal.

And so on.

Here, then, the description of the fixings to each separate class of skirtings is avoided. In the same way the backings to door and window linings, and many other items where the conditions are similar, may be generalised.

Further, if any detail drawings are supplied with the contract plans, which I fear is not often the case, a specification may be much shortened without detracting from its efficiency by merely referring to the detail drawings in question, and at the same time mentioning any particular feature not readily gathered from those drawings.

Thus, in about three lines, may be stated all that is necessary, which otherwise would perhaps occupy a dozen or twenty. But I fear, until it is the custom to supply detail drawings with the contract plans, very much cannot be made of this point.

(To be continued.)

Whitgift Church has recently been opened after renovation and the addition of a new chancel, at a cost of £1,250.



## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,  
May 3rd, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

**St. Paul's: The Outlook Improving.** THE discussion about the St. Paul's decorations still continues. Among recent protesters is that useful body, the Society for the Preservation of Ancient Buildings. There seems a likelihood that at last the accumulated protests will prove at least in some degree effective. The Decoration Committee have abandoned their early policy of ignoring criticism. Lord Brownlow, a member of that committee in a recent letter to "The Times" said: "The views expressed by all who have taken an interest in the matter will be certain to receive the most careful consideration of the committee at its next meeting. I venture to express my conviction that the deep interest now taken in the Cathedral by all sections of the public will tend to render easier the task of bringing the decorations to a satisfactory conclusion, and, therefore, is a subject for congratulation to all concerned in the work." This is a striking contrast to, as well as a great improvement on some of the utterances of those responsible for the Cathedral decorations.

### The New Jamaica Bridge, Glasgow.

THIS bridge, which crosses the river Clyde at the foot of Jamaica Street, has been in the course of reconstruction for the last three years, and it will be formally opened during May. The former bridge was erected on the same site in 1835, from designs by Telford, and was said to be one of his best works. The arches are of granite throughout, while the piers are faced with the same stone, the granite of the old bridge being redressed and used again. To secure a reliable foundation all the piers and abutments have been sunk 60ft. below low water level, and from 20ft. to 30ft. below the foundations of the quay walls. Each pier is supported by four cylinders, each 15ft. in diameter, these being connected at low-water level by semi-circular granite arches, on which are built the solid piers which support the main arches. The wings and abutments are also supported by cylinders, those for the abutments being similar to those for the piers, but those for the wings being considerably smaller and built of brickwork instead of steel and concrete. The parapets are of polished granite throughout, and are the old balusters and copstones redressed and polished.

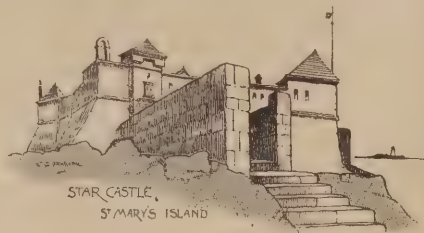
### An Old Devonshire Tower.

"Is Exeter to let one of her few remaining features of antiquity slip out of her hands and go for ever, or is she not?" This is a question asked by a correspondent of the "Exeter Flying Post" concerning St. Sidwell's tower. It is proposed either to destroy this most interesting fifteenth century tower, or to rebuild it from the clock face upwards. Our contemporary's correspondent says, "Renovate it, if you like, but keep it exactly as it was when our pious predecessors in the fifteenth century raised stone after stone upon lines directed by the master mason

himself." Perhaps, as is suggested, it would be better to let the old stonework remain, and where necessary in order to insure the stability of the tower, fresh stones, replicas of those which originally stood, could be added. This plan would be better than destroying an interesting relic.

### Star Castle, Scilly.

St. Mary's Island, in the remote Isles of Scilly, is being fortified. Not since the days that immediately preceded the Commonwealth have those islands been the scene of any warlike operations, and the most modern (so to call it) fort of any kind in the group is the curious redoubt built on the headland called the Garrison, above Hugh Town, in the time of Queen Elizabeth. This is a fortification with seven salient angles, called from its star-like ground plan, "Star Castle." It does not seem to have been injured when the Commonwealth Navy took possession of the Scillies. From the picturesque point of view, it is exceedingly interesting, but as a defence it has been, of



DRAWN BY C. G. HARPER.

course, for very many years past beneath contempt. The new forts now under construction on this plateau will overlook St. Agnes Island and the intervening roadstead, in one direction, and Hugh Town and its harbour in another. These are the only two means of approach to St. Mary's Island, the capital of the archipelago, and the guns will sufficiently cover the fairway to most of the other islands. Those that are not thus commanded may, from their wild and storm-beaten position, be safely left to their natural defences, the bristling reefs that encircle them, which have often brought many a good ship to destruction on this ill-omened coast.

### A Gladstone Tablet.

THERE is a talk of embellishing some one of the metropolitan residences of the late Mr. Gladstone with a mural tablet commemorating its connection with the most commanding figure of the present generation. One of these residences is in Harley Street, and was that occupied by Mr. Gladstone when his windows were smashed by a furious Jingo mob. We hope that this will be the one selected, as it will be a much more graceful memento of a regrettable incident than the iron shutters put up outside the windows of Apsley House by the Iron Duke to commemorate a similar outrage perpetrated upon him by a discontented concourse of Reformers in the early part of the present century.

### Fire Prevention.

A large fire generally results in a number of letters being sent to the Press which are of a more or less sound and practical character, and the fire at Hyde Park Court has produced an unusually large number. The Earl of Fortescue sends a letter to "The Times," in which he says: "Having determined to improve the arrangements for extinguishing fire, should any break out in my country house, Castlehill, I last year made on the hill close behind it a new reservoir (with the provision for keeping it full) holding 50,000 gallons, nearly 50ft. above the highest point of the roof, with a 6in. pipe leading straight down from it at a very steep angle for the supply of several standpipes and hydrants, with 2½in. hose outside the house, sufficient to command all the premises." This is a very fine arrangement—where possible. Mr. T. H. Baylis wrote on April 27th to "The Times" a letter which makes some good suggestions on the prevention of fire. A part of his letter runs as follows:—"I regret to say that in Government and other public buildings

the inside hydrants are not attached; it would take several minutes to bring them into action, when seconds are too valuable to be lost in adjusting them. I strongly urge the necessity for regular fire drills . . . and one of the drills ought to teach how to put out a fire in its infancy, by closing the doors and beating it out at once by rugs, mats, pillows, or other means usually at hand."

### The Abuse of Advertisement.

Under this heading a letter was published in "The Times," of April 26th, from Mr. Richardson Evans, Hon. Sec. of the National Society for Checking the Abuses of Public Advertising, 7, Great College Street, Westminster, London, S.W., in which he says that, "those who are interested in the efforts made to stay the plague of advertising disfigurement will hear with satisfaction that in an omnibus Bill, introduced by the Edinburgh Corporation, powers are sought for subjecting advertising display to municipal control. It should be said, for the honour of Ireland, that the Dublin Corporation attempted last year to establish a right of checking the grosser forms of the abuse, but were advised that, as the law stands, there is no authority to restrain. The action taken in the capitals of the two sister kingdoms may be paralleled by proceedings in many of the governing bodies of English cities. This circumstance is encouraging, so far as it refutes the strange superstition that the evil is regarded with indifference, while it ought to stimulate our own County Council to take prompt steps in the direction indicated by the architects' memorial, which is, I believe, still under consideration. It would not be respectful to the Private Bill Committee to speculate concerning the nature of their decision on the Edinburgh clauses. They are strongly opposed, of course, in the interest of certain trades. May I suggest that some, at least, of these timid worshippers of Diana of the Ephesians distress themselves superfluously?" In his concluding remarks, he says: "There is no fear—or ought I to say no hope?—that posters, 'artistic' or commonplace, will disappear. There will be plenty of room for them in their proper places. Can anyone seriously imagine that abundance of outlets for the advertising instinct will not be allowed under a system of control, administered by a council elected by the whole body of citizens?"

### St. Dunstan's Church, Fleet Street.

WE give the following abstracts from a letter in "The Times," of April 27th, sent by "a member of Fleet Street," hoping they will further the commendable intentions of the writer, who desires to call attention to a project that is on foot to interfere with the open spaces around St. Dunstan's Church. "The present Church of St. Dunstan in the West is, I submit, one of the most noteworthy features in Fleet Street. It was erected in 1831-32 under an Act of Parliament, whereby trustees were authorised to pull down the then existing church, acquire further land, and build a new church. The architect was Shaw, and, doubtless with a view to effect, open spaces were left on the east and west sides of the new church, and such spaces at the present day enable a clear view to be obtained of the fine Gothic tower which forms the principal feature of the building. To in any way interfere with these open spaces would, in my opinion, be an act of vandalism; yet it appears that on the 24th ult. an agreement was entered into between Harry Hoare, Frederick George Hilton Price, and Sir Christopher William Baynes, trustees under the above-mentioned Act, the Law Life Assurance Society (Limited), and the Rev. Henry Lionel James, the rector, and Charles Edwin Noverre and Edmund Seth Daw, the churchwardens, whereby, conditionally on a faculty being obtained, it was agreed to sell the open space on the west side of the church to the society to enable it to build thereon an extension of its offices." All interested in City churches and London street architecture will agree, we think, that to build on these spaces would be quite unjustifiable.



## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### DRAWINGS IN THE BUILDERS' JOURNAL.

In reply to H. M. F. (London, N.W.), who suggests that a further selection of measured drawings should be published in the BUILDERS' JOURNAL, we may say that a number of drawings of the kind desired are in hand for publication. We are always glad to receive suggestions from our readers.

### BUILDING CONTRACT.

To the Editor of THE BUILDERS' JOURNAL.  
HITCHEN.

DEAR SIR,—Could you inform me what my position is as regards a building contract? I signed a contract to restore and make certain additions and improvements to a mansion, and the extras and deviations were to be measured and valued by the architect, whose decision was (according to the wording of the agreement) to be final and binding. On the completion of the job I send in my bill of extras and the architect makes an award, which comes several hundred pounds below the amount of my claim. He positively declines to give me particulars showing how he arrives at his valuation of the extras, and I want to know what course is best to adopt under the circumstances. I only want what is just and reasonable, and am quite willing, and have more than once offered to meet him in the matter, or have it valued. Will you kindly give me your advice.

CONTRACTOR.

I do not think that "Contractor" has any remedy. He and his employer have delegated to the architect the duty of measuring the work done and valuing it. If the architect has, without fraud or collusion with the employer, performed his duty, the contract renders the result binding on both the parties to it, no matter how negligently or unskillfully the architect may have acted in the matter. The case seems a very hard one, and "Contractor" would do well to have the documents and full facts laid before counsel for his opinion.

H. P. B.

## Correspondence.

### BOOKS ON BRICK AND STONE WALLS.

To the Editor of THE BUILDERS' JOURNAL.  
LONDON, S.W.

SIR,—Your correspondent "Perplexed" (p.153, No. cexviii.), will find all the information he requires with regard to the thickness of retaining walls, counterforts, abutments, &c., in Hurst's Architectural Surveyors' Handbook. (Spon, Charing Cross, 5s.) an invaluable little work which should be in every surveyor's library. Mr. Hurst was a clerk of the Works in the War Department and had considerable experience in these matters. JOHN HEBB.

### FITTING UP AND SANITATION OF COW HOUSES.

To the Editor of THE BUILDERS' JOURNAL.  
ROCHDALE.

SIR,—With respect to the reply to the query on the above in your issue of the 12th inst., I beg to furnish the following additional references:—

"Specification," II., p. 477; III., p. 249.

"Sanitary Record," January 14th, 1898.

"Surveyor," April 1st, 1898, p. 340.

"Councillor," August 6th, 1898, gives letter from Local Government Board to Royal Agricultural Society on cubic air space registered and the recommendations of the "Royal Commission on Tuberculosis."

"Sanitary Inspectors' Journal," October, 1897, p. 105. S. S. PLATT.

### REGISTRATIONS OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—That there is a *prima facie* case in support of the belief that architects and the public alike would profit by an Act as indicated above, is shown by the fact that the professions already closed, such as Law and Medicine, &c., are unanimous in holding that they have very greatly benefited by legal Registration and we should like, in reply to the correspondent in your issue of April 19th, to point out briefly a few of the many ways in which the "Act for the Registration of Architects" now before Parliament, would benefit the profession of architecture.

First the pupil would have set before him some definite object in the shape of compulsory examinations, which must lead him to acquire the habit of concentrated study, the impetus for which at present only partially exists; having passed the examination, and being duly registered, the architect would step at once into that recognised position in the profession which is now only attainable, except under most exceptional conditions, by years of waiting and working. The temptation to secure work by the suicidal policy of cutting fees, or to increase the income by means of illicit commissions, of which we hear so much just now, would be done away under a statute which would render unprofessional conduct punishable by striking the offender off the roll, probably after a warning from the Central Council. Then, again, the architect would have the satisfaction of knowing that his scale of charges would be accepted without question of custom or precedent, his expert evidence in a court of law would, of necessity, have a far greater weight than is at present the case, while the public recognition of his status would bring about that *esprit de corps* which is now so sadly lacking in the profession—none would be below a fixed standard of education, consequently all would be able to meet upon the level with a degree of confidence in each other which is now necessarily conspicuous by its absence.

One great point in favour of legal registration is that it would put a stop to that overcrowding of the profession caused by the influx of incompetent and unqualified persons, who, although possessed of no previous training or sense of the fitness of things, obtain a share of work which should rightly go to the trained practitioner.

With regard to the disadvantages of registration, we cannot conceive of anyone who has given the matter reasonable thought seriously bringing forward objections to placing the profession of architecture at least on a level with the other closed professions, and we would undertake to say that there is no argument against registration which cannot easily be refuted.

As has already been noticed in your columns, the state of Illinois and the provinces of Quebec and Ontario have already sought and obtained legislation closing the profession to incompetence in those parts; though, while we are a long way behind Canada and the States in this respect, it must not be supposed that nothing has been done to remedy the existing state of affairs.

Some fourteen years ago the Society of Architects was instrumental in framing and introducing into Parliament a Bill for the Registration of architects, which has passed its first reading, and although much opposition has been and is offered to the measure, owing apparently to a strange misconception as to the likely result of registration in quarters where one would naturally look for initiative and support, yet the Bill will most certainly eventually become law. The Society of Architects—who, as a legally incorporate body of recognised standing, does uphold the principle of registration—will, in the interest of its members and of the whole body of the profession, support the Bill by every means in its power.

There are many points we have necessarily left untouched, but space is limited, though we hope to be allowed further opportunities of referring to the subject.

In opening your columns to a correspondence

on this important matter, you are taking the lead in a movement which is likely to be brought prominently before the profession and the public in the near future.—Yours faithfully,  
C. McARTHUR BUTLER.  
Secretary, the Society of Architects.

## Keystones.

The University College Technical School, Cardiff, is in need of enlargement, partly owing to accommodation being required for the plastering class.

The Statue of the Queen, by W. H. Thornycroft, R.A., erected by the Corporation of Durban to commemorate the Diamond Jubilee was unveiled on April 19th.

A new Church at Cardiff is being erected near the south-eastern entrance to Roath Park. It will involve an outlay of about £10,000. Mr. Edgar Fawcner is the architect.

The New Aberdeen Parish Council Offices have just been occupied by the officials. Mr. A. Marshall Mackenzie, A.R.S.A., is the architect. The cost has been about £8,000.

The New Private Lunatic Asylum for the West Riding is now being erected by the County Council at Scalebor park, at a cost of £115,000, and will give accommodation for 210 patients.

A New Public Hall at Kirkpatrick-Fleming has been erected by the villagers, in commemoration of the diamond Jubilee of her Majesty. It has cost £750, £300 of which has as yet been raised.

Aberdeen Fish Market is considered in need of extension, and the Town Council and Harbour Board have been asked to spend £3,760 on the strengthening of the wharf to bear the extra weight.

A new Fire Brigade Station which has been erected at Paisley, at a cost of between £7,000 and £8,000, was opened on the 13th inst. Mr. Moncur is the architect, and has been assisted by Mr. Rowe.

Dangerous Structures.—The inspectors of dangerous structures report that two chimney stacks at 95, Fleet Street, E.C., are dangerous, and that the parapet of the party wall between 93 and 94, Fleet Street is in a similar condition.

Church Restoration at Surfleet.—A fund is being raised for restoring the parish church at Surfleet, near Spalding. The total amount required is £2,000. When £500 is raised it is proposed to proceed with the restoration of the nave.

A large Stained Glass Window has been unveiled in St. Kerverne Church in commemoration of the wreck of the "Mohegan," and it is proposed to erect a Cornish cross over the graves where so many of the passengers and crew were buried.

Mr. Henry L. Florence, Vice-President R.I.B.A., the present Grand Superintendent of Works has been re-appointed to that office in Grand Lodge for the ensuing year, by the Most Worshipful Grand Master, H.R.H. the Prince of Wales.

A new Deep Water Dock at Seaham Harbour has been started. Messrs. Pearson, of Westminster, are the contractors for the building of the dock and piers, which will be formed of concrete blocks, weighing thirty tons each, faced with granite. The operations are expected to take about four years to complete.

Woolliscroft's Brick Paving.—In our issue of April 19th there appeared a notice of Messrs. Woolliscroft's system of brick paving, in which it was stated that a part of the roadway of High Street, Islington, has been laid with these bricks. Lest visitors to the Building Trades Exhibition should waste time in searching for this brick paving, it may be well to state that the above indication of the locality was not quite accurate. The brick paving in question is laid in Upper Street, Islington, about a hundred yards from the Agricultural Hall, going towards Highbury.



## Masters and Men.

**The Johnstone Builders' Labourers** have struck work for an advance from 5½d. to 6d. per hour.

**The Huddersfield Joiners** struck on April 29th for an increase of wages from 7½d. to 8½d. per hour.

**The Labourers at Stirling**, in the employ of the masons and kindred firms, have struck for an increase of ½d. per hour on their present wage of 5½d.

**The Bothwell Quarrymen** were granted, on May 1st, an advance of ½d. per hour, making the wage now 7½d. per hour, and the cranemen an advance of 2s. per week, making 30s. per week.

**The Leicester Builders' Labourers** are on strike for an advance of ½d. per hour on their present wage. The Midland Federation of Builders threaten to stop all labourers within their area; 728 men are receiving strike pay.

**The Felixstowe Bricklayers** recently struck work for an increase of 1d. per hour on their present wage of 7d. The masters offered ½d. rise, but this was refused. Very few of the men have remained in the town, as plenty of work was found elsewhere.

**The Operative Masons of Perth** some time ago made application to the masters for an increase of ½d. per hour on their present wages of 8½d. and 9½d. per hour. The employers have declined to accede the demand and a strike is very probable.

**The Sheffield Carpenters and Joiners** and the local Master Builders' Association had a conference recently, when it was decided that the men should have their request granted for an advance of ½d. per hour on their present rate of wages, to commence from May 1st.

**The Sunderland Bricklayers' Labourers**, having struck for an advance of ½d. upon their wage of 6½d. per hour, have caused the Masters to lock out the whole of the trade to the number of over 400, and they have given notice that they intend to reduce the labourers' wages to 6d. per hour.

**The Dispute at West Hartlepool** led to a serious outrage on April 24th. A builder's labourer, named Jordan, working on a house in course of erection, was followed by two other labourers, with whom he had some words. The pair seized Jordan, and, it is alleged, threw him to the ground, breaking his leg, and causing him other serious injuries. The assailants are in custody.

**The Bradford Corporation** have offered to the employees of the Streets and Drainage Committee a revised scale of wages on the basis of limiting the hours to 49½ per week, with overtime at the rate of time and a quarter, and Sunday work at the rate of time and a half. The men's leaders have declined to accept the scale, asking for a larger increase; the Streets and Drainage Committee have reaffirmed their previous decision.

**The Edinburgh and Leith Joiners** state that there are between sixty and seventy men working in Edinburgh and Leith, and that since the strike began 150 men have been sent to jobs outside the city. A meeting of the Committee of the Master Joiners took place on April 24th, when a reporter was informed that the meeting was of opinion that no circumstances had yet arisen to necessitate the calling of a general meeting of the masters. They desired it to be stated that there were from 300 to 400 men working at present in Edinburgh and Leith, and that the workmen were going back to their work at the old rate of wages.

## THE DISPUTE IN THE BUILDING TRADE.

**T**WO thousand members of the Italian Colony attended a meeting in Hyde Park on April 23rd, to protest against the circumstances in which Italian labour is being introduced into London in connection with the Plasterers' strike. It is said that 250 men have already been brought over, and that more are coming. The Italians state that they are on the best of terms with the British workman, they sympathise with the strike, and they are ready to join their trade unions. It is alleged that the Italian plasterers who have been brought over were not informed of the real state of affairs. The Italians were promised their fares to London, a minimum of two months' work, employment for an indefinite period if they proved good craftsmen, and an indemnity of £20 apiece if for any reason work could not be provided. The meeting at Hyde Park passed a long resolution, a copy of which was at once left at the Italian Embassy by a deputation, calling on the ambassador and the press to take action to make the true facts of the case known in Italy and this country. Mr. T. Costigan, secretary of the London Master Builders' Association, states that the Association's agents clearly informed these workmen that a trade dispute existed in London in consequence of the unreasonable demands of the London plasterers, although it was possible that, out of the hundreds of men engaged, a few might be found to state the contrary. The immediate object of the engagement of Continental plasterers was to fill the places of workmen who persisted in practices which, apparently every one, except themselves, regarded as not only objectionable, but indefensible. The services of Continental plasterers would, he stated, obviously be required for a long time, until the increased supply of apprentices had become duly qualified mechanics. Mr. Costigan adds that his association is paying these Continental workmen the full London rate of wages, which is about double the rate they can earn in their native country.

At Newport, the men employed by Mr. Dyson Parfitt, the secretary of the Newport Master Builders' Association, struck work on April 24, owing to his having imported three plasterers to take the place of his men on strike. Mr. Parfitt has had the secretary of the Newport Building Industries' Federation put on trial for alleged intimidation of and incitation of men against these three plasterers, and it is expected that the whole trade in Newport will be locked out by the masters this week.

The Bradford Amalgamated Builders' Federation passed a resolution of April 26, condemning the action of the master builders in reference to the proposed general lock-out, which was described as "contrary to all rules agreed upon between employers and men; six months' notice being required by either side before any such action is taken." It was further resolved to earnestly appeal to societies outside the building trade to support the operatives, both morally and financially; and that in the event of the master builders locking out the whole of the men in the building trade, the Bradford Federation at once offer to receive work from any proprietor.

A lock-out in Swansea is probable, for three months ago the plasterers and joiners tendered notices to cease work unless they received an advance on present wage rates. This notice terminated last Saturday. An effort has been made to bring the matters in dispute to a settlement, but up to now this has failed. It appears that masons, joiners, and plasterers at Swansea have been paid the same wage rate. In June last the masons obtained an advance of ½d. per hour, and now the joiners are asking for the additional ½d., whilst the plasterers have put forward a claim for an additional 1d. per hour. The joiners have been offered an increase of ½d. per hour. This has not been accepted. It is said that some

150 plasterers and 200 joiners are affected, and there is a remote possibility of the masons and others being locked out.

The quarterly meeting of the National Association of Master Builders of Great Britain and Ireland took place at Birmingham on April 27th, Alderman Houldsworth (Bradford) in the chair. The request in a letter from the Scottish Building Trades Federation asking to become affiliated with the Association was unanimously agreed to. The report of the deputation appointed to meet the operatives in conference was then received, and it was decided to form a Builders' Foremen's Society for the whole of the allied building trades. The chief business for consideration was the plasterers' lock-out, and the question was whether a general stoppage of all the other branches of the building trades should be ordered. This step will affect 300,000 men. Among the items on the agenda paper was a motion authorising a general meeting of the association to be summoned for the purpose of making a levy and, if necessary, of defining the procedure in connection with the plasterers' dispute. The only information that was supplied to the Press was the following resolution, which, it was said, had been unanimously passed:—"That this meeting recommends the National Association to ask the whole of the building trades' operatives' unions for a definite assurance that they have no sympathy with and will not support in any way the National Association of Plasterers in the present dispute, and that if such an assurance is not forthcoming from all of them by May 6th, the question and terms of a general lock-out shall be settled at a meeting of this council." The approximate number of members of the National Association of Plasterers was stated to be 10,558, and the number locked-out 4116.

A vote has been taken by the members of the Northern Counties Federation of Builders upon two propositions—first, whether there shall be a general lock-out of all branches of workmen in the building trades in the federation unless the plasterers' dispute is settled forthwith; and, secondly, whether there shall be in the Northern Counties a general lock-out of labourers in the employment of members of the federation in case the disputes at Sunderland, Gateshead, and Middlesbrough are not settled. The returns are not yet complete, but it is understood that a majority in favour of both propositions is assured.

The Yorkshire Federation of Building Trade Employers, at their meeting on April 28th, instructed the Hull master builders to lock out 25 per cent. of their men. In the event of the dispute not being settled by May 5th, it was further resolved to give instructions to the whole of the members of the Yorkshire Federation to immediately lock out 25 per cent. of the operatives in their employ. This will not only at once affect Yorkshire, but it is extremely likely that it will precipitate matters in the country generally, more particularly in the north. At the Birmingham meeting on Thursday the representatives from the Northern and Lancashire and Cheshire centres favoured a much stronger resolution than the one actually adopted. The Yorkshire Federation will now seek the support of all the federated districts, and will enforce their resolution, independently of any action on the part of the Executive of the National Association in regard to the general dispute. The cause of this latest ultimatum was that a section of the union bricklayers in Hull refused to work with non-unionist plasterers.

It is stated that the plasterers' strike in Birmingham is at an end, and that the whole of the 178 men who were originally locked out have returned to work. In several instances it is stated by the men that architects had made requests to the operatives' association that men should be allowed to work for them instead of for the builders, and this was permitted, though it was asserted that the master builders were cognisant of and connived at what was done. As a consequence some of the employers had sent for their plasterers back again, and had severed their connection with the employers' organisation.



## Professional Practice.

**Aberdeen.**—The Aberdeen School Board are erecting several new schools in the town. The new Kittybrewster School, to accommodate 1,112 pupils, is almost completed, internally and externally, and operations are now in progress for the laying-out of the playground. The Board has introduced its own system of heating and ventilation—a modification of the Key system—into this school. The modification consists mainly in that, whereas under the Key system the air is heated by passing through one large coil in the main duct, under the modified system the heating area is increased by introducing coils into the branch ducts as well.—The Old Aberdeen School, of 562 places, has the mason work finished, and the plumber and slater works are well advanced. It is expected that it will be opened in December.—The new Hanover Street School is being erected partly on the site of the old school and partly on adjoining land, and is designed to accommodate 985 pupils. The old buildings having been demolished, the masons have completed the walls up to the level of the top of the first floor, and the beams and joists of the ground and first floors are being laid.—The tenders for the new Mile End School have just been decided upon, and the following contractors have been accepted:—Mason work, James Gauld, Gilcomston Park; carpenter, Alexander Hall, Mile End; slater, Adam and Co., Hutcheon Street; plasterer, Stephen and Gibb, Hutcheon Street; plumber, James F. Anderson, Bath Street; painter, Mason and Son, Queen Street; steel and ironwork, George Bisset. The total amount of the contract price is practically £12,000. The new school, which will accommodate about 1,150 pupils, is to be erected on the vacant piece of ground bounded by Gordondale Road on the west, Mid-Stocket Road on the north, and Beechgrove Place on the south. The school will stand practically in the middle of the ground, running north and south, with the main front towards Gordondale Road—in which will be placed the main entrance to the ground. It will be a three-storey building, built of grey granite, the ordinary walls being of Rubislaw, and the more decorative features of dressed Kemnay granite. The main front of the school—facing westwards—is marked by two projecting gable-forms, one at either end, that rise to the full height of the building, each finished in the form of an effective pediment, pierced by a decorative circular window. The front wall between these gable-forms is slightly recessed. The boys' entrance will be placed at the north end, and the girls' entrance at the south end. The chief architectural features in the building, apart from the gable forms in the main front, are to be seen in the decorative heads of the windows, the moulded string courses that run along the building above the ground floor and first story, and the series of pilasters that run round the west, north, and south fronts on the second story. Surmounting all will be an elaborate overhanging cornice in Dantzic redwood. The front and back portions of the building, internally, will be divided by a wide longitudinal corridor, to which access will be gained by the main doorways at either end, and in which will be situated the main staircase leading up to the first and second floors. The accommodation on the ground floor will consist of head teachers' rooms at either end of the main corridor; along the west side of the corridor four class-rooms for infants; and along the east side of the corridor a large gymnasium. On the first floor will be assistant teachers' rooms, and eight more class-rooms; on the upper floor a music room, a manual instruction room, a science room, and a cookery room, with five class-rooms for advanced pupils. A janitor's lodge is to be provided within the enclosing wall at the south-west corner of the ground. The architect for the new school is Mr. A. H. L. Mackinnon, Union Street.—The Board have also in hand various minor building schemes. A new gymnasium and cookery and

manual instruction room in connection with the King Street School have just been opened, and have cost between £1,600 and £1,800. These building schemes of the Aberdeen School Board will cost between £50,000 and £60,000, in addition to the £17,000 for the Central School scheme, at present in abeyance.

**Hexham.**—At their annual meeting on April 18th the Hexham Board of Guardians approved of the plans for the new vagrant wards to the workhouse, submitted under the *nom de plume* of "Arcadia," the author of these being Mr. T. Leslie Anderson, M.S.A., of 4, Royal Arcade, Newcastle-on-Tyne. It was decided that the premium of £20 should be held over until after the Local Government Board had approved of the plans, and a contractor was found willing to carry out the work for the amount of the architect's estimate, £2,000.

**Perth.**—New offices are in course of erection on the site of the old Post Office, Perth, for the General Accident Assurance Corporation, Limited. The old Post Office has been entirely demolished, and the contractors are now proceeding with the erection of the structure. Owing to the uncertainty of a solid foundation, it has been found necessary to excavate over the whole area to a considerable depth. In the course of these operations the workmen came across what are supposed to be the abutments of the old bridge of Perth. Advantage has been taken of the excavations to form a basement floor, which will be set apart for fireproof safes, store rooms, boiler, engine, and dynamo rooms. The ground floor will be almost entirely taken up by a large counting room having accommodation for seventy-seven clerks, while a portion will be devoted to the counter and space for the public. On this floor are also the assistant manager's room, rooms for the heads of departments, telephone room, waiting and cloak rooms, and lavatories. On the entresole floor, between the ground and first floor, are the lady typewriters' rooms and retiring rooms. The first floor contains a second large apartment, with accommodation for thirty-six clerks. There are also situated here rooms for heads of departments, a large Board room and ante-room, and the general manager's room, having private lobby and retiring apartments. On the second floor are extra clerks' rooms, keeper's house, clerks' luncheon room, kitchen, and other accommodation, while the attic floor contains extra storage accommodation. The principal elevations are to be built with yellow freestone from Woodburn Quarry, Cumberland, with polished granite doorways and red stone columns in the colonnade of the second floor. Internally the walls of the principal office will be lined with marble and finished in oak. The principal staircase will also be in marble and oak, while the Board rooms will be panelled in mahogany. The whole building will be of fireproof construction, will be heated with steam and thoroughly ventilated, and the artificial lighting will be by means of electric light. The work is being carried out under the direction of Mr. G. P. K. Young, A.R.I.B.A., while the contracts, so far as settled, have been entrusted to the following tradesmen:—Mason work, Messrs. R. Brand and Sons; joiner work, Messrs. James Hay and Sons; plumber work, Mr. James MacLeish; plaster work, Mr. Alexander M'Ritchie, Dundee; slater work, Mr. James Buchan, Perth; glazier work, Messrs. G. R. Douglass and Son; iron work, Messrs. Mather and Son, Edinburgh.

**Woodford (Essex).**—The Woodford School Board have had a scheme for the erection of new schools in the George Lane district under consideration for some time, and plans have been prepared for a school for 750 children together with accommodation for a cookery centre. At a recent meeting of the Board it was decided to proceed at once with a block to accommodate 488 children and the cookery class room. The plans for this block have been approved by the Education Department and tenders will shortly be invited. The Architect is Mr. E. Tidman, C.E., F.S.I., Victoria Street, Westminster.

## Under Discussion.

### BRITISH ARCHÆOLOGICAL ASSOCIATION.

The tenth meeting of the Session was held on the 19th inst.—Mr. Bloshill, hon. treasurer in the chair. The hon. secretary, Mr. Patricks, announced that the Congress would be held at Buxton, from July 17th till the 22nd. Mr. Dack, of Peterborough, then read a paper on "Old Peterborough Customs and their Survival." The Rev. H. J. D. Abtley, hon. secretary, read a paper by Miss Russell, on "Some Recent Observations on the Vitrified Forts and Drystone Brochs in the North of Scotland and elsewhere." The paper elicited considerable discussion, the chairman remarking that it was not the first time that the subject of vitrified forts had been brought before the association, but more evidence of the vitrification was required. Mr. Gould remarked that these forts were not necessarily to be taken as early work; in several instances pieces of Roman tile had been found in their construction.

### ARCHITECTS AND SECRET COMMISSIONS.

At a special meeting of the Council of the Glasgow Institute of Architects, held on April 24th, Mr. David Barclay, F.R.I.B.A., president, who was in the chair, explained that the meeting had been called to consider the principle of the Bill, recently introduced into the House of Lords by Lord Russell of Killowen, relating to illicit commissions. The President stated that one of the objects of the Institute is to insure that the business carried on by its members would be free from anything dishonourable, and that they welcomed any action, through such a Bill or by any other means, which would insure fair trading in business and honourable dealing amongst all professional men. By Article 10 of the Articles of Association of this Institute every member is required, as soon as possible after his election, to sign a declaration that he will not have any interest in any trade contract for work which it is his duty to superintend or pass; nor will he receive or accept any pecuniary consideration or emolument from any measurer or tradesman working for a client under his supervision; but shall in every case receive payment for all professional services from his client direct, and not otherwise. It would seem, however, from the comments on Lord Russell's Bill which have appeared in some of the public prints, that this is not fully understood, and that architects, along with others, are assumed to be commonly in receipt of such double commissions. He believed that the profession in Scotland was singularly free from this taint. The following resolution was then unanimously passed:—"That the Council of the Glasgow Institute of Architects, in the interests of honest trade, and to show its disapproval of illicit commissions, in whatever form, resolves to support the principle of Lord Russell's Bill, and that this resolution be communicated to the Royal Institute of British Architects, and that this Council expresses its willingness to support that body in any similar action it may take in favour of the principle of the Bill."

### DISCOVERIES AT GLASGOW CATHEDRAL.

At the monthly meeting of the Glasgow Archaeological Society on April 20th, Mr. P. Macgregor Chalmers read a paper on "The Early Fabric of the Cathedral, with notes on the recent excavations." A short historical sketch of the early structures was given, bringing out prominently the probable relationship of each to the site of St. Mungo's altar, in the saint's own church. Under this altar, doubtless, the saint was buried. The site may be recognised to-day in St. Mungo's shrine. The church—the choir only—founded by Prince David, was in the Norman style, of the type of Dunfermline Abbey, or of much of the work of Durham. This choir must have been



destroyed at an early date, since there is evidence that a second choir was erected in the time of Bishop Ingelram (1164-1174). Of this fabric an interesting fragment remains in the old wa'l shaft in the lower church, marking, doubtless, one of the angles of the apse of this early south aisle. To this choir Bishop Joceline began to add a nave. Wynton says he enlarged the church in 1181. As the choir was again destroyed, this work was interrupted. Of Bishop Joceline's restoration a great deal more remains than is currently supposed. The north wall of the north aisle, the lower part of the north and south transepts, the general arrangement of the present vaulted landings leading to the aisles of the upper church, and almost the entire south aisle of the lower church, with its walls and vaulting, are of this period. The object of the recent search under the floor of the Cathedral, which was undertaken by permission granted by the Government, was to determine if any part of the ancient foundations had been allowed to remain. As a preliminary to this description, Mr. Chalmers indicated the results of a similar search at Jedburgh Abbey, carried out by him some time ago. At Glasgow the search went to prove that all the old foundations had been removed. It was doubtless found necessary to do this owing to the method adopted for the foundation of the present cathedral. It was found that the pillars are not carried down below the pavement level as pillars. A great wall, about 8ft. thick, seems to run continuously the whole length of the choir from east to west. It goes down a great depth, and reaches at the top to within 9in. of the floor. The four pillars of the shrine are also founded upon a four-square wall. One of the other interesting discoveries was the finding of two of the original glazed red brick floor tiles. These were exhibited at the meeting, and were compared with almost identical tiles found at Glenluce Abbey, which Mr. Chalmers is at present engaged in repairing. A series of interesting photographs were shown. These included one of the painted panels on the vaulting of the church. This contained four of the Ten Commandments. The last photographs shown were several of the remarkably beautiful carved bosses in the lower church, each carved with a beautiful face, undoubtedly portraits. The identification of the persons represented was to a large extent free from difficulty. One is a portrait of Bishop William de Bondington, who built this part of the church; another is a portrait of King Alexander II., who died in 1249. The other two portraits—those of a man and a woman—may be identified as Isabella de Vallonüs, lady of Kilbride, and Sir David Comyn, her husband. These carvings are unique in the Cathedral. They can hardly be considered in any other light than as a record in stone of a great benefaction. Mr. Chalmers referred to other such records in the Cathedral. Isabella de Vallonüs granted her "whole land, which is called the forest of Dalkam," to the Bishop and Church of Glasgow before 1250. The charter was confirmed by John de Balliol on September 14th, 1250.

**The Public Health Acts Amendment Bill** was read a second time in the House of Commons last Wednesday, and was referred to a select committee.

**A Shelter and Hospital** for the reception and isolation of poor patients suffering from infectious disease is to be erected on the site of the City Mortuary in Golden Lane, London. The superficial area of the new premises will be 2941ft. and the premises will consist of four storeys, the general management rooms and caretaker's apartments being on the ground floor. On the first floor will be the rooms for the patients suffering from disease. On the second floor will be the dormitory accommodation or shelter for families displaced by the outbreak of infection under circumstances which render the removal of the patient himself impossible. Ten beds will be provided for each sex. The third floor is to be held in reserve for further hospital accommodation.

## New Companies.

### Arvon Brick and Tile Company, Limited.

This company was registered on April 20th with a capital of £16,000 in £1 shares, to acquire, take over as a going concern, and carry on the business of brick, tile, and terracotta manufacturers and merchants, brick-earth, slate, clay, and building material merchants, builders, contractors, &c., now carried on at Carnarvon under the styles of "The Pebllick Brick Co." and "The Seiont Brick Company," and to enter into an agreement with U. Bromley, E. Pierce, and R. Evans. Registered without Articles of Association.

### Bagworth Brick Company, Limited.

This company was registered on April 19th with a capital of £10,000 in £1 shares, to lease from the Countess of Warwick certain lands at Bagworth, Leicestershire, and to carry on the business of brick, tile, terracotta, and earthenware manufacturers, clay and brick-earth merchants, coal and coke merchants, builders, contractors, &c. The number of the directors is not to be less than three nor more than five. The first are: H. Simpson Gee, John Roberts, and John F. Neal. Qualification, £100; remuneration, £100 each per annum.

### Carnells, Limited.

This company was registered on April 15th, with a capital of £10,000 in £1 shares (of which 4000 are Preference), to acquire and take over, as a going concern, the business now carried on as "Carnell and Co.," at Enfield, Middlesex, and to carry on the business of builders, contractors, decorators, brick and tile manufacturers, builders' merchants, etc. The number of the Directors is not to be less than two, nor more than five. The first are: H. K. Bridger, of 2, Danes' Inn, Strand, London, W.C.; A. Armfield, of 2, Central Buildings, Lancaster Road, Enfield, and H. W. Carnell, of Lavender Villa, Lavender Road, Enfield. Qualification £50. Remuneration, £300 per annum divided between them. Registered office: 5, Central Buildings, Lancaster Road, Enfield, N.

### Richard Bennett and Company, Limited.

This company was registered on April 18th with a capital of £12,000 in £10 shares, to acquire and take over as a going concern the business now carried on by William Sayer at Slack Lane and Thorncliff, Derby, under the style of "Richard Bennett and Co.," to enter into an agreement with the said vendor, and to carry on the business of brick, tile, pottery, and earthenware manufacturers, and merchants, builders' merchants, builders' contractors, decorators, &c. The number of the directors is not to be less than two nor more than five. The first are: Mrs. Elizabeth Bennett, of The Lindens, Utttoxeter New Road, Derby; William Sayer, engineer, of The Mount, Rowditch, Derby; and Richard C. S. Bennett, brickmaker, of The Lindens, Utttoxeter New Road, Derby. Qualification, £500. Registered office, Slack Lane, Derby.

### Wharfedale (Ilkley) Estate Company, Limited.

This company was registered on April 18th, with a capital of £55,000 in £10 shares, to enter into an agreement with Marmaduke F. Middelton, of Ripon, for the acquisition of certain lands on the north bank of the River Wharfe, near Ilkley, York, to enter into an agreement with Thomas Horsman, to develop, turn to account, and deal with such property, and to carry on the business of builders, contractors, decorators, stone merchants, brick, tile, and pipe makers, lime burners, &c. The first directors (to number not less than three nor more than seven) are: Henry Sutcliffe, Henry Ellis, Hugh O. Arnold Foster, M.P., Victor Edelstein, John K. Empsall, John T. Hemingway and John Illingworth. Qualification, £2,000. Remuneration, £350 per annum divisible. Registered office: 1, Piccadilly, Bradford.

### S X Brick and Cement Company, Limited.

This company was registered on April 26th, with a capital of £10,000 in £1 shares (of which 2,000 are founders'), to manufacture, sell, and deal in Portland cement, bricks, tiles, pottery, earthenware, china, terracotta, ceramic ware, &c. The number of the directors is not to be less than three nor more than five. The subscribers are to appoint the first. Qualification, one share. Remuneration, £50 each per annum.

### Hurry and Seaman's Patents, Limited.

This company was registered on April 26th, with a capital of £100,000 in £10 shares, to carry on the business of manufacturers and importers of and dealers in cement, lime, artificial stone, compositions, &c., mechanical and chemical engineers, contractors, &c. The first subscribers (each with one share) are: T. Totten Willcox, 45, Sugden Road, Clapham Common, S.W., secretary; Charles W. Pearson, 24, Turret Grove, Clapham, S.W., clerk; Walter H. Crocker, 52, Larkhall Rise, Clapham, S.W., assistant secretary; Cecil H. Reed, 15, Hanbury Road, Lavender Hill, S.W., clerk; A. H. Howard, Queen Anne's Mansions, S.W., electrical engineer; E. R. Carter, 51, St. John's Villas, Holloway Road, London, N., traveller; J. Mason, 44, Highbury Hill, N., engineer. The number of the directors is not to be less than three nor more than six. The subscribers are to appoint the first. Qualification, £500. Remuneration, as the company may decide. Registered office, 2, Queen Anne's Gate, Westminster, S.W.

## COMING EVENTS.

### Wednesday, May 3.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Annual Business Meeting and President's Valedictory Address. 8 p.m.

SOCIETY OF ARTS.—Mr. W. H. Preece, C.B., F.R.S., on "Ætheric Telegraphy." 8 p.m.

BUILDERS' FOREMEN AND CLERKS OF WORKS' INSTITUTION.—Ordinary meeting of the Members. 8 p.m.

ROYAL ARCHÆOLOGICAL INSTITUTE.—The Rev. W. G. Clark-Maxwell on "Roman Towns in the Valley of the Baetis." 4 p.m.

### Thursday, May 4.

CARPENTERS' HALL, LONDON WALL (Lectures on Carpentry and Joinery).—Mr. F. R. Farrow on "Strength and Strains in Wood." 7.30 p.m.

ROYAL INSTITUTION.—Mr. Lewis F. Day on "Embroidery." I. 3 p.m.

IRON AND STEEL INSTITUTE.—Annual meeting, to be held at the Institution of Civil Engineers, Westminster. 10.30 a.m.

SOCIETY OF ANTIQUARIES.—8.30 p.m.

INSTITUTION OF ELECTRICAL ENGINEERS (to be held at the Society of Arts, John-street, Adelphi).—Mr. P. V. McMahon on "Electric Locomotives in Practice and Tractive Resistance in Tunnels, with Notes on Electric Locomotive Design." 8 p.m.

### Friday, May 5.

ROYAL INSTITUTION.—Mr. W. J. Russell, Ph.D., F.R.S., on "Pictures produced on Photographic Plates in the Dark." 9 p.m.

IRON AND STEEL INSTITUTE.—Annual meeting (concluded). 10.30 a.m.

INSTITUTE OF CLAYWORKERS.—The Hon. Rollo Russell on "The Smoke Abatement Question," to be held in connection with the Building Trades' Exhibition.

### Saturday, May 6.

BRITISH INSTITUTE OF CERTIFIED CARPENTERS.—Meeting at Carpenters' Hall at 6 p.m. Lantern lecture on "Timber and Timber Trees," by Mr. J. Hudson Davies.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Visit to Peebles: (1) Neidpath Castle; (2) Cross Church; (3) St. Andrew's Tower.

SANITARY INSPECTORS' ASSOCIATION.—Professor Banister Fletcher on "The Present Position of Sanitary Building Construction."

### Monday, May 8.

BRISTOL SOCIETY OF ARCHITECTS.—Annual General Meeting. Mr. Frank W. Willis, on "Speculative Builders and their little ways."

### Tuesday, May 9.

SOCIETY OF DESIGNERS.—Mr. Stephen Webb, on "Design for Relief Decoration." 8 p.m.

### Wednesday, May 10.

EDINBURGH ARCHITECTURAL SOCIETY.—Mr. J. Edin on "Furniture."

SOCIETY OF ARTS.—Ordinary Meeting at 8 p.m.

### Thursday, May 11.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—The Second Conversazione at the Galleries of the Royal Institute of Painters in Water-Colours, Piccadilly. Also Exhibition of Water-Colour Painting.



## COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—</b>			
May 6	Bengeworth, Evesham—Wall...	Burial Board...	P. E. Garrard, Clerk, High-street, Evesham.
" 6	Hallifax—Schools, &c. ...	School Board...	W. C. Williams, 29, Southgate, Halifax.
" 6	Gloucester—School, &c. ...	School Board...	P. Cooke, 9, Berkeley-street, Gloucester.
" 8	Darlington—Electric Lighting Station ...	Corporation ...	Borough Surveyor, Town Hall, Darlington.
" 8	Ilford—Public Offices and Hall ...	Urban District Council ...	B. Woollard, 16, Finsbury-circus, E.C.
" 8	London—Superstructures of Bandstands, &c. ...	County Council ...	Architect's Department, 13, Spring-gardens, S.W.
" 8	Bristol—Additions to Warehouse and Factory ...	C. Wills and Sons ...	H. Williams, 21, Clure-street, Bristol.
" 8	Derby—Extensions to Electric Lighting Station ...	Corporation ...	A. Eaton, 6, St. James's-street, Derby.
" 8	Hetton-le-Hole, Durham—Boundary Wall ...	Urban District Council ...	G. G. Forster, Surveyor, Hetton-le-Hole, R.S.O.
" 8	St. Stephen's-in-Braunwell, Cornwall—School ...	School Board ...	W. Bennetto, Clerk, Kernick, St. Stephen's.
" 8	Swinton, Lanc.—Sludge-Press Buildings ...	Urban District Council ...	T. S. McCallum, 52, Corporation-street, Manchester.
" 8	Western-super-Mare—Library and Museum Building...	Urban District Council ...	H. F. Poice, Wilde and Fry, Architects, Western-super-Mare.
" 9	Donabate, Dublin—Station Building, &c. ...	Great Northern Rly. Co., (Ireland)	Co's Engineer-in-Chief, Amicus-street Terminus, Dublin.
" 9	Mortlake—76 Workmen's Dwellings ...	Barnes Urban District Council ...	G. B. Tomes, Engineer, Council Offices, High-st., Mortlake.
" 9	Sheffield—Elementary School ...	School Board ...	Holmes and Watson, Architects, St. James's-chambers, Church-street, Sheffield.
" 9	Hemel Hempstead—Alterations to Municipal Bldgs., &c. ...	Corporation ...	W. R. Locke, Borough Surveyor, Town Hall, Hemel Hempstead.
" 9	Westminster—Alterations, &c. to School ...	Vestry ...	Beazley and Burrows, 13, Victoria-street, S.W.
" 9	St. Mary Cray, Kent—Fire Station...	Bromley Rural District Council...	W. J. Winter, Council's Bldg. Surveyor, Station-rd., Sidcup.
" 10	Hammersmith—Extension of Electric Lighting Station ...	Vestry ...	H. Mair, Town Hall, Hammersmith.
" 10	London, W., Electric Lighting Buildings...	Hammersmith Vestry ...	H. Mair, Surveyor, Town Hall, Hammersmith.
" 10	West Ham.—Water Tank, Water Tower, &c. ...	Union Guardians ...	Clerk, Guardian's Offices, Union-road, Leytonstone.
" 12	Manchester.—Extension of Post Office ...	H.M. Commissioners of Works ...	Offices, Storey's Gate, S.W.
" 12	Illogan, Scotland—Additions to Boys' School ...	School Board ...	S. Hill, Architect, Green-lane, Redruth.
" 13	Bangor, Wales—Alterations at Workhouse ...	Union Guardians ...	R. Davies, Architect, Bangor.
" 13	Milford, Cork—Church and Presbytery ...	Rev. W. Coughan, P.P. ...	M. A. Hennessy, 74, South Mall, Cork.
" 15	Herne Common, Kent—Additions, &c., to Workhouse ...	Blean Union Guardians ...	Master of Workhouse, Herne Common.
" 15	Morpeth—Villa Blocks at Asylum ...	County Council ...	J. Cresswell, Architect, Moot Hall, Newcastle-on-Tyne.
" 15	Wath-upon-Deane, Yorks.—Chapel ...	Primitive Methodist Connection ...	W. G. Smithson, 13, Bond-street, Leeds.
" 15	Finchley—New Hall, &c. ...	Y.M.C.A. Branch ...	W. Hollis, Estate Office, opposite Church End Station, Finchley.
" 15	Bexhill—Electric Light Station ...	Urban District Council ...	A. H. Preece, 13, Queen Anne's-gate, S.W.
" 16	Lewisham and Forest Hill—Public Libraries ...	Lewisham Vestry ...	J. Andrews, 13, Basinghall-street, E.C.
" 16	Edmonton—Schools ...	School Board ...	H. W. Dobb, 110, London-wall, E.C.
" 17	Llandegfan, Wales—Chapel, &c. ...	Calvinistic Methodists ...	J. Owen, Architect, Menai Bridge.
" 20	Grimsby—Electricity Buildings, &c. ...	Urban Sanitary Authority ...	M. Petree, Borough Engineer, Town Hall-square, Grimsby.
" 23	Trowbridge—Technical School ...	Union Guardians ...	G. Fleetwood, 2, New-court, Lincoln's-inn, W.C.
" 23	Tending, near Colchester—Infirmary Wards ...	Union Guardians ...	F. Whitmore, Architect, Chelmsford.
" 30	Cheltenham—Reconstruction of Baths ...	Union Guardians ...	J. Hale, Borough Surveyor, Municipal Offices, Cheltenham.
" 30	Talgarth, Wales—Asylum ...	Union Guardians ...	Giles, Gough, & Trollope, 28, Craven-st., Charing Cross, W.C.
" 30	Darlington—Electric Light Buildings ...	Corporation ...	Borough Surveyor, Town Hall, Darlington.
<b>ENGINEERING—</b>			
May 6	Dunbar, Scotland—Gas Mains, &c. ...	Gas Commissioners...	C. Notman, Clerk, High-street, Dunbar.
" 8	Padiham—Steam Road Roller...	Urban District Council ...	Gregson, Surveyor to Council, Padiham.
" 8	Swindon—Steam Road Roller ...	Rural District Council ...	J. P. Kirby, 8, Victoria-street, Swindon.
" 8	Darlington—Electric Lighting Plant ...	Corporation ...	Borough Surveyor, Town Hall, Darlington.
" 8	London, W.—Electric Light Wiring and Fittings ...	St. Marylebone Guardians ...	A. S. Snell, 22, Southampton-buildings, Chancery-la., W.C.
" 8	Epsom—Electric Lighting Plant ...	Urban District Council ...	W. C. C. Hawtayne, 9, Queen-street-place, E.C.
" 10	Bakewell—Drainage Works ...	Rural District Council ...	Sterling & Swann, Engineers, Town Hall, Chapel-en-le-Frith.
" 10	Salford—Sewage Screens, &c. ...	Corporation ...	Borough Engineer, Town Hall, Salford.
" 10	Twickenham—Steam Road Roller ...	Urban District Council ...	W. Pearce, Surveyor, Town Hall, Twickenham.
" 15	Egremont, Cheshire—Gasholder Tank, &c. ...	Wallasey Urban District Council ...	J. H. Crowther, Engineer, Great Float, near Birkenhead.
" 15	Wimbledon—Steam Road Roller ...	Urban District Council ...	C. H. Cooper, Surveyor to Council, Wimbledon.
" 16	Fleetwood—Electric Lighting Materials, &c. ...	Urban District Council ...	T. Barton, Consulting Electrical Engineer, Ainsworth-street, Blackburn.
" 16	London, N.W.—Electrical Plant ...	St. Pancras Vestry ...	Chief Clerk, Electricity Dept. Offices, 57, Pratt-st., N.W.
" 16	Kew—Filter Bed ...	H.M. Commissioners of Works...	Clerk of Works, Kew Palace, S.W.
<b>IRON AND STEEL—</b>			
May 6	Morley—Cast Iron Water Mains ...	Waterworks Committee ...	G. B. Rawden, Waterworks Manager, Town Hall, Morley.
" 8	London, S.E.—Railings, Gates, &c. ...	County Council ...	Architect's Department, 13, Spring-gardens, S.W.
" 9	Salford—Tramway Rails ...	County Council ...	Borough Engineer, Town Hall, Salford.
" 9	London, E.C.—Railway Stores ...	South Eastern Railway Co. Ltd...	Sir G. B. Bruce, 3, Victoria-street, Westminster.
" 11	London, E.C.—Railway Stores ...	Great Eastern Railway Co. ...	W. H. Peppercorne, Secretary, Liverpool-st. Terminus, E.C.
<b>ROADS AND CARTAGE—</b>			
May 6	Minehead—Asphalting, &c. ...	Urban District Council ...	J. Cribb, Surveyor, Glenmore-road, Minehead.
" 6	Swinton, Lancs.—Materials ...	Urban District Council ...	H. Entwisle, Surveyor, Council Offices, Swinton, near Manchester.
" 6	Thirsk, Yorks.—Blue Stone ...	Rural District Council ...	C. McC. C. Swarbrick, Clerk, Thirsk.
" 8	Sudbury, Suffolk—Works ...	Town Council...	T. W. A. Hayward, Borough Engineer, Town Hall, Sudbury.
" 8	Church, Lancs.—Materials, Paving, &c. ...	Urban District Council ...	W. E. Wood, Surveyor, District Council Offices, Church.
" 8	London, W.—Paving Blocks ...	St. Marylebone Vestry ...	J. P. Waddington, Court House, Marylebone-lane, W.
" 9	Willesden—Road Making Works ...	District Council ...	O. C. Robson, Engineer, Public Offices, Dyne-road, Kilburn, N.W.
" 10	Twickenham—Improvement Works...	Urban District Council ...	F. W. Pearce, Surveyor, Town Hall, Twickenham.
" 12	Brighton—Granite Edge, Kerb, &c. ...	Corporation ...	F. J. C. May, Surveyor, Town Hall, Brighton.
" 13	Burnley—Paving, Kerbing, &c. ...	Highways and Sewerage Committee ...	G. H. Pickles, Borough Surveyor, Town Hall, Burnley.
" 13	Egham—Making-up Roads ...	Rural District Council ...	W. Menzies, Englefield Green, Surrey.
<b>SANITARY—</b>			
May 6	Perth—Sewers ...	Police Commissioners ...	R. M'Killop, 12, Tay-street, Perth.
" 8	Guildford—Drainage Work ...	Town Council...	C. G. Mason, Borough Surveyor, Tuns-gate, Guildford.
" 9	Bedwas, Wales—Sewers ...	St. Mellons Rural District Council ...	J. Powell, 131, Stow-hill, Newport.
" 9	Todmorden—Sewerage Works ...	Town Council ...	C. B. Pease, Surveyor, Town Hall, Todmorden.
" 9	Mortlake—Lime... ..	Richmond Main Sewerage Board ...	W. Fairley, Engineer, Works, Mortlake.
" 10	Oldham—Sewerage Works ...	Sewerage Committee ...	Borough Surveyor, Town Hall, Oldham.
" 10	Plumstead—Pipe Sewers, &c. ...	Vestry ...	W. C. Gow, Surveyor, Vestry Hall, Maxey-road, Plumstead.
" 12	Johannesburg—Sewerage Scheme ...	Urban District Council ...	Town Engineer, Johannesburg.
" 13	Southam—Drains, &c. ...	Rural District Council ...	C. Nelson and Company, Stockton.

## LIST OF COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
May 16	Arbroath—Public Shambles ...	£7, £5, £3 ...	Burgh Commissioners.
June 1	Leeds—Market Hall and Shops ...	£150, £100, £50 ...	Corporation.
" 6	Salford—Laying-out Site of Barracks ...	£30, £20, £10 ...	Corporation.
" 27	Edinburgh—County Buildings ...	£100, £50 ...	Midlothian County Council.
" 30	Wakefield—Central Buildings ...	£50, £30, £20 ...	Wakefield Industrial Society, Ltd., Bank-street, Wakefield.
July 3	Harrogate—Kursaal ...	£150, £100, £75 ...	Corporation.
" 27	Plumstead—Municipal Buildings and Public Library ...	£100, £75, £50... ..	Edwin Hughes, Vestry Clerk, Vestry Hall, Maxey-road, Plumstead.
No date.	Clacton-on-Sea—Laying-out Cliff Frontage, Pavilion, &c. ...	£75, £50, £25 ...	Urban District Council.
"	Totnes—Cottage Hospital ...	.....	Chairman, Cottage Hospital Committee, Plumstead



## CURRENT PRICES.

## OILS AND PAINTS.

Castor, French	per cwt.	1 5 8	—
Colza, English	per cwt.	1 2 9	—
Copperas	per ton	2 0 0	—
Kerosine, water white	per cwt.	1 5 0	1 15 0
Lard	per gal.	1 9 0	—
Linseed	per cwt.	0 18 0	—
Neatsfoot	per gal.	0 2 6	0 4 0
Paraffin	per cwt.	0 12 0	0 19 0
Pitch	per barrel	0 8 0	—
Tallow, Town	per cwt.	1 3 0	1 4 0
Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 13 6	—
Glue	per cwt.	1 19 6	2 18 6
Lead, white, ground, carbonate	per cwt.	0 19 0	—
Do. red	per cwt.	0 17 0	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	3 10 6	—
Do. sticklac	do.	2 2 6	2 15 0
Pumice stone	do.	0 8 9	—

## METALS.

Copper, sheet, strong	per ton	85 0 0	—
Iron, bar, Staffs. in London	do.	6 15 0	8 10 0
Do. Galvanized Corru- gated sheet	do.	11 15 0	—
Lead, pig, Spanish	do.	14 6 3	—
Do. sheet, common brands	do.	14 10 0	—
Do. sheet, English, elb. persq.ft. and upwards	do.	16 10 0	—
Do. pipe	do.	17 5 0	—
Nails, cut clasp, 3in. to 6in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Straits	do.	113 15 0	114 5 0
Do. English ingots	do.	112 0 0	—
Zinc, sheets, English	do.	27 10 0	28 10 0
Do. Vieille Montaigne	do.	31 0 0	—
Do. Spelter	do.	28 2 6	28 12 6

## TIMBER.

Fir, Dantzic and Memel	per load.	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0

Laths, log, Dantzic	per fath.	4 10 0	5 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Deals, Archangel 2nd & 1st	per P. Std.	3 15 0	13 10 0
Do. do. 4th & 3rd.	do.	8 5 0	8 15 0
Do. do. unsorted	do.	7 5 0	8 5 0
Do. Riga	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow	do.	14 15 0	—
Do. do. 2nd	do.	12 0 0	10 10 0
Do. do. Unsorted	do.	8 0 0	9 15 0
Do. do. White	do.	7 15 0	17 10 0
Do. Swedish	do.	12 15 0	17 10 0
Do. White Sea	do.	10 15 0	18 0 0
Deals, Quebec Pine, 1st.	do.	18 0 0	23 10 0
Do. do. 2nd	do.	15 5 0	16 15 0
Do. do. 3rd & 4th	do.	6 17 6	8 15 0
Do. Canadian Spruce, 1st	do.	7 15 0	9 0 0
Do. do. 3rd & 2nd	do.	7 10 0	8 0 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	do.	7 0 0	12 5 0
Flooring Boards, 1 in. prepared, 1st	per square.	0 11 3	—
Do. 2nd.	do.	0 10 6	0 10 9
Do. 3rd & 4th.	do.	0 9 3	—

## HARD WOODS.

Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 0 0	5 0 0
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, lin., Cuba	per ft. sup.	0 0 4	0 0 4 1/2
Do. Honduras	do.	0 0 4	9/16
Do. Tobasco	do.	0 0 4 1/2	—
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 4 5/16	—
Do. African	do.	0 0 3 1/8	—
Do. St. Domingo	do.	0 0 5 1/16	—
Do. Tobasco	do.	0 0 3 21/32	—
Oak, Dantzic and Memel	per load	3 5 0	3 5 0
Do. Quebec	do.	4 12 6	—
Teak, Rangoon, planks	do.	9 15 0	14 5 0
Wainscot, Riga (Baulk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub.ft.	0 2 1	0 3 2

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	At Wharf.	ex Ship within one month.	At Wharf
17 1/2 x 3 x 3	12 3	11 2	16 6
17 1/2 x 3 x 2	8 9	7 11	11 8
17 1/2 x 3 x 1 1/2	6 9	6 0	9 1



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1 x 4 1/2 " 42/6 " 21/-  
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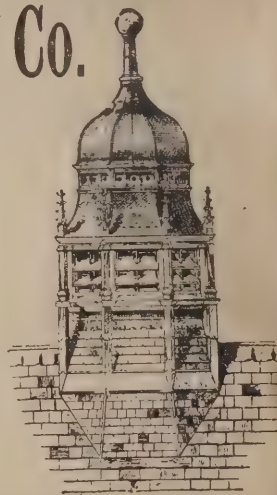
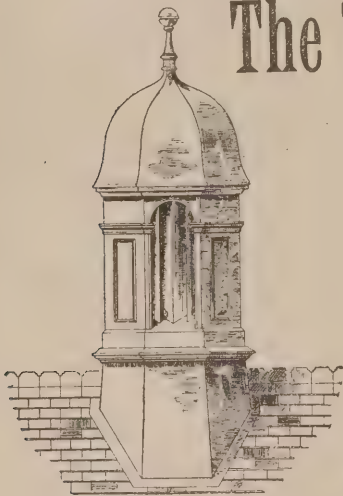
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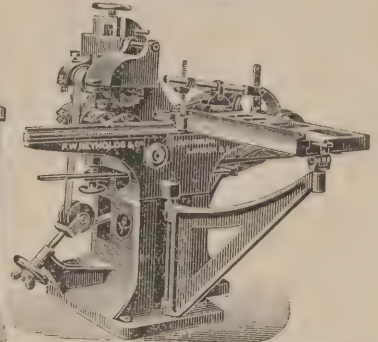
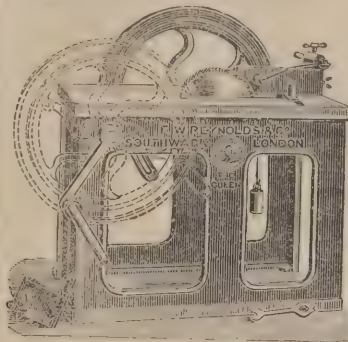
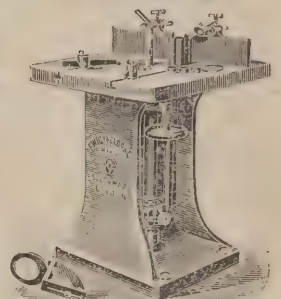
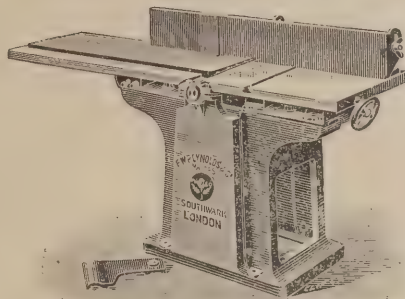
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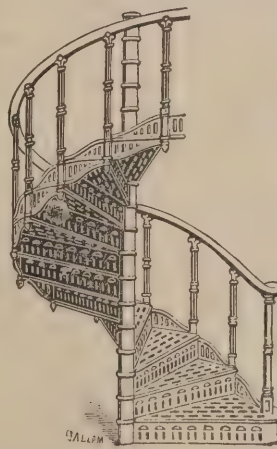
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## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

ASHTON-ON-LYNE.—Accepted for alterations and extensions to the New Jerusalem Church and School. J. H. Burton, and J. A. Percival, architects, Ashton-on-Lynde; 8 Tenders were received.

Edwin Marshall, Ashton-on-Lynde } Amended Tender ... £889.  
BRYN (Wales).—For the erection of school buildings, for the Margam School Board. Mr. F. B. Smith, architect, Port Talbot:—  
Davies and Sons... £3,625 C. and F. Gaen ... £3,640  
Evan Thomas ... 3,640 Jenkins, Port Talbot\* 3,273  
\*Accepted.

GATESHEAD.—For rebuilding the "Foresters' Arms" Inn, Askew-road, for Mr. R. Newton. Mr. A. G. Kyle, architect, 145, Pilgrim-street, Newcastle. Quantities by architect:—

J. Ross ... £2,650 16 T. and R. Lamb £2,327 13 2  
H. and A. Arkless... 2,407 2 J. Bowley ... 2,253 0 0  
J. C. Nichol ... 2,380 0 Turner Bros. ... 2,157 5 9  
J. Wales and Co. ... 2,850 0 Thompson ... 2,118 0 0

KIRKBY-IN-ASHFIELD.—For the erection of schools, for the School Board. Mr. Lawrence Bright, architect, 9, St. Peter's Church-walk, Nottingham. Quantities by architect:—

Wm. Bains ... £5,070 Wm. Maule ... £4,935  
G. Caulton ... 4,960 T. Cuthbert ... 4,927  
H. Vickers ... 4,970 H. Gilbert ... 4,860  
T. Barlow ... 4,950 J. Osroft, Nottingham\* 4,730  
\*Accepted.

LEAMINGTON.—For the erection of residence at Leamington, for Mr. F. M. Spencer. Mr. R. A. Briggs, architect, Norfolk-street, Strand. Quantities by Mr. J. Gandy:—  
Bromage & Evans... £6,233 18 Smith and Son ... £4,636 0  
J. S. Kimberley ... 5,353 0 C. H. Barber, Parnell and Son ... 4,767 0 Coventry\* ... 4,599 0  
\*Accepted.

LONDON.—For rebuilding 1, 2, and 3, Brabant-court, E.C. Mr. C. Watkins, architect:—

	Super-structure.	Foundations.	Total.
Foster and Dicksee ...	£25,998	£3,783	£29,781
Ashby and Horner ...	25,745	3,202	29,947
Lawrence and Sons ...	22,410	3,122	25,532
Colls and Sons ...	21,937	2,914	24,851
Ashby Bros. ...	21,592	2,954	24,546
F. and H. Higgs ...	21,749	2,836	24,585
W. Downs ...	21,736	2,767	24,503
Patman and Fotheringham ...	21,642	2,793	24,435
H. Lovatt ...	21,639	2,763	24,402
J. Greenwood ...	21,287	2,662	23,949

LONDON.—For the erection of warehouses on the site of Nos. 73 to 81, Clifton-street, and the City Stone Yard, Finsbury, E.C., for the Home and Colonial Stores, Limited. Mr. Robert Willey, architect, 33, New Bridge-street, E.C. Quantities by Mr. A. Howard, the Outer Temple, E.C.:—

	Extra for Glazed Brick Front.
Allen ...	£25,855
Larier ...	25,000
Holland and Hannen ...	24,914
Woodward ...	24,290
Clarke and Bracey ...	24,031
Lascelles ...	23,881
Dove Bros. ...	23,355
Patman and Fotheringham ...	21,791
Smith and Son ...	21,269

LONDON.—For rebuilding No. 6, Great Marlboro'-street, W. Messrs. W. G. Bartleet and Son, architects:—  
Webber ... £4,739 Ashby Bros. ... £4,587  
Carmichael ... 4,720 Bywaters ... 4,489  
Holloway Bros. ... 4,700 Lindon ... 4,303  
F. and H. Higgs ... 4,690 Patman and Fotheringham ... 4,281  
F. and F. Wood ... 4,680

LONDON.—For reconstructing twenty-eight gas retorts, for the Darenth Asylum (tenders from three selected firms), for the Metropolitan Asylums Board:—  
Leeds Fireclay Co., J. Drake and Son, Limited ... £1,425 Ovenden, Halifax\* ... £1,290  
R. and J. Dempster ... 1,325 \*Accepted.

LONDON.—For new coroner's court, mortuaries, shelters, &c., High-street, Poplar, E., for the Board of Works for the Poplar District. Messrs. Lansdell and Harrison, architects, 38, Bow-lane, E.C. Quantities by Mr. Jno. R. Hunt, Bridge House, 181, Queen Victoria-street, E.C.:—

A. E. Symes ... £3,575 Godfrey and Son ... £7,945  
Gregory and Co. ... 8,137 Spencer, Santo & Co. ... 7,796  
The General Builders, Limited ... 8,000 L. H. and R. Roberts ... 6,946  
W. Norton ... 6,763

MANCHESTER.—Accepted for the erection of a club house, Mossley, for the Mossley Working Men's Club. Mr. T. Cook, architect, 39, Victoria-buildings, Manchester:—

Masonry, Bricklaying, &c.—J. Batley, Mossley ... £1,390  
Joinery.—J. Hewkin, Greenfield ... 584  
Plastering.—Whitehead and Sons, Dobcross ... 74  
Slating.—Pickles Bros., Leeds ... 67  
Painting.—H. Sutcliffe, Mossley ... 80

MORTLAKE.—For the construction of roads upon the Castellan Estate, High-road, Mortlake. Mr. Robert Willey, surveyor, 33, New Bridge-street, E.C.:—  
Wimpey and Co. ... £3,060 Woodham\* ... £2,589  
Rogers and Co. ... 2,750 \*Accepted.



# Electric Bells,

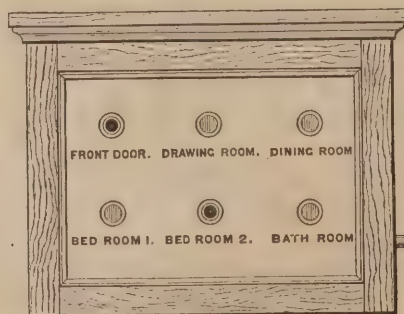
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STAND BUILDERS' EXHIBITION,  
No. 22,  
LONDON, April, 1899.

All Communications at present to be addressed to—  
J. C. MOORE, The Meads, EASTBOURNE.

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THESE window patents cover the only complete and up-to-date windows on the market, and are now in use with the following advantages over the ordinary antiquated pocket frames or other costly and complicated sorts. Our frame, being of **Solid Material**, it is much more substantial and labour is saved, in sawing, planing, and a lot of carpenter's time putting it together.

The sashes are made in the usual way and are slung so that they are always bearing on the inner beading; consequently they cannot rattle.

While both sashes can be regulated in any position with the hand, a child can also regulate them in like manner with the sliding handles.

A self-fastener operates when the sashes are closed, making it impossible to open them from without, while it pulls the meeting rails tight together, and ensures them being locked.

These sashes can also be regulated when high up by bringing the end of the cord down, or at a distance, by carrying it to any part of the compartment or building.

By stitching the end of a new cord to the old, and pulling the latter out by the other end, it is replaced in a minute by the new. Should it at any time break, the sashes are secured against falling, and a domestic can lace in a new cord in a few minutes, avoiding the unpleasantness and expense of bringing strange workmen into the house.

Simply and only by lowering both sashes to the bottom and turning in the hinged beading and withdrawing the parting bead, these sashes can be turned inward like a door on their hinges, for cleaning, &c., during which time they cannot lift off only when desired. This will prevent hundreds of accidents and save heavy damages under the Employers' Liability Act.

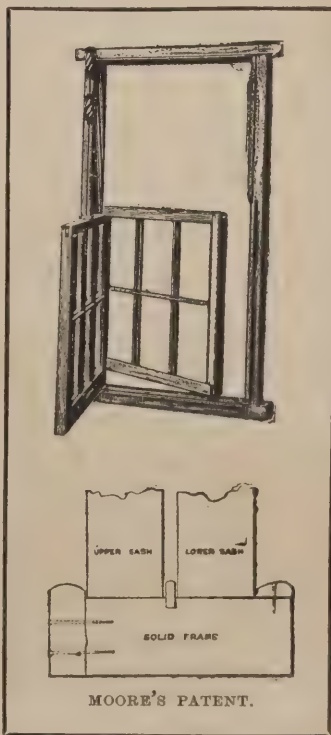
These windows are warranted watertight, and, as it is impossible to open them from without unless a smash is made, and being without doubt the most simple, cheap and efficient yet introduced, they are wanted everywhere, and on this account this Company can only take orders to execute them in rotation and as soon as the additional machinery is completed for turning out very large quantities.

Moore's Patent Faught Opener beats all records for cheapness and simplicity, as one cord operates it without cog or screw-gear.

Moore's Patent Door Spring does not require oiling. It is so simple it can be put on a door in a few minutes. While it closes the door gently, it will hold it open. It costs very little, and cannot get out of order.

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J. C. MOORE, The Meads, EASTBOURNE.





**NORWICH.**—For erecting a residence, Newmarket-road, Norwich, for Mr. E. D. Adcock. Mr. A. F. Scott, architect, Norwich:—  
 T. H. Yelf ... £1,765 W. S. Dawes ... £1,635  
 R. W. Wilkin ... 1,665 T. Gill ... 1,594  
 Tyrrell Bros. ... 1,650 J. Hurn ... 1,574  
 Youngs and Son ... 1,640 J. Evans\* ... 1,561  
 Scarles Bros. ... 1,638 \*Accepted.

**NORWOOD.**—For the construction of new roads and sewers, Lenham and Hythe-roads, Grangewood Estate, Norwood, Surrey:—  
 H. Woodham ... £2,173 S. Kavanagh ... £1,384  
 A. C. Soan ... 1,750 F. Smith ... 1,225  
 E. Iles ... 1,705 R. Ballard, Junr. ... 1,225  
 W. Langridge ... 1,598 Child's Hill, Hen-  
 W. H. Wheeler ... 1,550 don (accepted) ... 1,212

**OXFORD.**—For raising the main building another storey, and making other alterations and additions at Lloyd's Oriental Café, corner Market-street, Oxford. Mr. Herbert Quinton, architect and surveyor, 15, Magdalen-street, Oxford:—

Wilkins Bros. ... £240 Kinglerlee and Sons\* ... £315  
 S. Hutchins ... 375 \*Accepted.

**QUADRING FEN (Spalding).**—Accepted for the erection of stabling, granary, cart hovel, pigery, boiling house, and covering of crew yard for Henry Casswell, Esq. Mr. Edward A. Jollye, architect, High-street, Donington:—  
 Thomas H. Cade, Boston ... £580

**STRATFORD-ON-AVON.**—For the erection of a Technical School, Henley-street, for the Committee. Mr. Arthur S. Flower, architect, 7, Gordon-place, London, W.C. Quantities by Mr. W. W. Thornicroft, 6, South-square, Gray's Inn, W.C.:—

R. M. Hughes ... £2,241 0 0 Geo. Whateley,  
 Callaway Bros. ... 1,990 0 0 Stratford-on-  
 Smith and Sons ... 1,800 0 0 Avon\* ... £1,660 0 0  
 Fincher and Co. ... 1,785 0 0 Smallwood and  
 J. Harris ... 1,710 11 3 Co. ... 1,620 0 0  
 E. T. Kennard ... 1,663 15 0 \*Accepted.

**RAWTENSTALL (Lancs.)**—For the construction of pipe sewer, manholes, &c., for the Corporation. Mr. A. W. Lawson, C.E., Borough Surveyor, Municipal Buildings, Rawtenstall:—

Wm. Jenkins ... £3,436 0 0 H. N. Davison ... £2,832 18 9  
 Thomas Turner ... 3,224 8 11 John Moore ... 2,826 10 7  
 Enoch Tempest ... 3,054 4 8 P. D. and S. D.  
 J. and J. Lee ... 2,992 0 7 Hayes, Stock-  
 Etheridge and ... port\* ... 2,671 15 8  
 Clarke ... 2,889 3 0 \*Accepted.

**WHITBY.**—For the erection of parish room, St. Hilda's-terrace, Whitby, for the Rev. Canon Austen and Committee. Mr. E. H. Smales, architect, 5, Flowergate, Whitby:—

With Sureties.  
 Langdale and Sons ... £1,590 0  
 R. Harland ... 1,548 0  
 John Brain, Whitby (accepted) ... 1,525 0  
 Without Sureties.  
 C. Winterburn ... 1,670 0  
 Fletcher and Gladstone ... 1,463 5

## COMPETITIONS.

### PLUMSTEAD VESTRY. TO ARCHITECTS.

PROPOSED MUNICIPAL BUILDINGS AND PUBLIC LIBRARY AT GOSSAGE ROAD, PLUMSTEAD.

The Vestry of the Parish of Plumstead invite Architects to submit DESIGNS for their proposed new MUNICIPAL BUILDINGS and PUBLIC LIBRARY, which must be delivered to the Vestry Clerk at the Vestry Hall, Maxey-road, Plumstead, not later than NOON on JULY 27th, 1899.

The contemplated expenditure is £40,000, and premiums of £100, £75, and £50 will be paid to the authors of the Designs placed first, second, and third respectively by Mr. EDWARD W. MOUNTFORD, F.R.I.B.A., the Assessor appointed by the Vestry, whose decision shall be final.

Plans of the site and particulars of required accommodation, and instructions and conditions of competitions, may be obtained on and after APRIL 27th, 1899, on application to me at the Vestry Hall, Plumstead.

By order,

EDWIN HUGHES,

Vestry Hall,

Maxey-road,

Plumstead,

April 25th, 1899.

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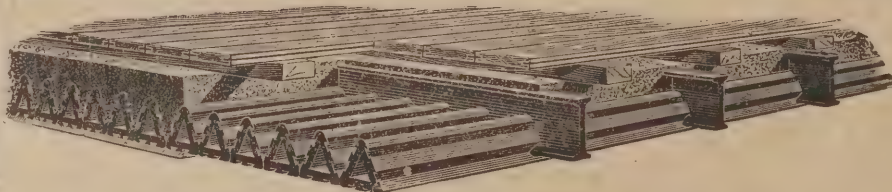
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# BUILDING TRADES' EXHIBITION Supplement.

MAY 3RD, 1899.

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*See Large Advertisement, Back Page, Monthly.*

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WITHOUT AFFECTING ITS UTILITY AS A BUILDING MATERIAL.**

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who have recently introduced into Europe the process now being so largely used in America, have erected large works in this country, and are now taking Orders for the supply of their

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... and ...  
THE R. G. DUNN BUILDING.**

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## THE BUILDING TRADES' EXHIBITION.

A SECOND survey of the Exhibition at the Agricultural Hall amply confirms the opinion we expressed last week that this is the largest and most comprehensive exhibition of the kind that has yet been held. There is scarcely any one of the numerous industries involved in building that is not fairly represented. In the matter of arrangement a great improvement has been made as compared with the exhibitions of previous years; the grouping together of exhibits of the same character—electrical, smoke-abatement, road-making and so on—is convenient for purposes of comparison as well as in other ways. During the past week visits have been paid to the exhibition by the Institute of Builders, the Association of Municipal and County Engineers' and the Surveyors' Institution. To-day the Clay-workers' Institute are holding their annual meeting and dinner at the Agricultural Hall, and to-morrow the Society of Architects will pay an official visit. We resume this week our detailed examination of the exhibits. In order that we may deal more or less adequately with the large number of stands that are worthy of notice, this week's number is enlarged by the addition of four extra pages.

### THE OPENING CEREMONY.\*

The Exhibition was formally opened at noon on Wednesday by Professor G. Aitchison, R.A. After making a tour of the building, in company with a number of other distinguished visitors, and examining many of the more notable exhibits, Professor Aitchison presided over a small meeting held in the gallery, and delivered a very interesting address, which, however, owing to the noisy efforts of workmen and others engaged in putting the finishing touches to the stands, was, unfortunately, inaudible to a large section of the audience. Professor Aitchison began by referring to the importance of the industries represented at the Exhibition. He pointed out that no building of brick, stone, or concrete could be erected without lime or cement, at least in this country, though we read of Babylon being built of bricks and asphalt. The inventor of mortar was not known, but it was known that the pyramids of Gizeh were put together with it. It was to the necessity for limestone and fuel that were due the destruction of so many temples and other grand classical monuments.

### The Uses of the Exhibition.

Viollet le Duc gave a long list of all the trades involved in building. They had come to this Exhibition to see new inventions and new applications of machinery to the builder's craft. The show was more or less useful to everyone, but was particularly so to the architect. The application of machinery to all sorts of productions had been of immense advantage to those engaged in building. As an example of the usefulness of this application of machinery, Professor Aitchison mentioned that on one occasion he wanted to use some square moulded balusters, but the expense of working these by hand was too great to allow of their use being thought of. He found, however, at a previous Building Trades' Exhibition, an exhibit that had been worked by machinery, and this enabled him to adopt the style of balusters desired.

### Steam and Electricity.

One of the ancient Roman poets spoke of "dreadful war yoking the red dragons to her iron car," but the elemental dragons, said the Professor, had been yoked by the moderns to the golden car of peace. The ancients had used the fall of water and the force of wind

for mills and ships, but just before our time the application of steam had increased our power of production at least a hundred fold, while the advances of electrical science—which were well demonstrated in this exhibition—opened a vista which was amazing to contemplate.

### High Wages and Bad Workmanship.

One of the great revolutions of recent times had been the increased wages of the working classes; but, like other revolutions, this had not been wholly advantageous, for it had been the means of encouraging the manufacture of rubbish. Up to a comparatively late period England was celebrated for the excellence of her workmanship; English cabinet work was known abroad for the excellence of its wood and fitting; and English firms, he hoped, were still celebrated for the excellence and durability of their machinery; but in some classes of manufacture it had become almost impossible to get anything really good. There was an insane desire to have things cheap, without regard to their excellence and durability, or even their temporary utility. The bulk of English cabinet work was very different from what it once was; small fastenings having the appearance of solid brass would bend in the fingers as if they were lead, while sash-lines and chair bands were made of stuff scarcely more durable than tinder.

### An Exception.

In certain trades there was a counterpoise to this passion for rubbish; in all kinds of sanitary appliances perfection of workmanship was one of the necessities. This was an immense advantage to the workman and manufacturer; it taught them to be thorough, careful, and accurate, and not to scamp their work, for the tests which sanitary experts had learned to apply, instantly discovered imperfect work or materials.

### Colour in Building.

Professor Aitchison then turned to a consideration of the question of introducing colour in building work. Twenty or thirty years ago, he said, he had pointed out the enormous advantage it would be in manufacturing towns to have the whole outer faces of buildings covered with enamelled bricks, or enamelled terra-cotta. This was sometimes done with white or pale coloured bricks in cases where the light for the fabric itself or neighbouring buildings had to be considered, but the appearance of such buildings was rather more hideous than if they had been built of ordinary brick. There were ridiculously few buildings of enamelled brick-work or earthenware where any attempt was made to give them beauty of form and colour. This was due to three causes: to the wretched leasehold system; to the time required, and the accidents both to shape and colour of fine earthenware, inherent in the potter's trade; and to the desire of people to get artistic design for nothing.

### The Use of Glazed Surfaces.

As to the advantages of the kind of building he advocated, Professor Aitchison pointed out that dirt and soot do not cling so much to a polished as to a rough and porous surface, and that which does stick is easily washed off. But what he chiefly insisted on was the great importance to mankind of beauty, both in form and colour. The works of Nature were all more or less beautiful, and those beauties were surely intended for man's purification, solace, and delight. In great towns, therefore, where Nature's beauties were shut out and where the sky was obscured by smoke and dust, there must be a lowering of man's intellectual and moral powers, unless those gifted men who could impart beauty were employed to confer those beauties they had culled from Nature on the habitations and the utensils of townspeople. The Professor quoted Charles Garnier's description of what he hoped Paris might become, and concluded with the expression of a hope that this country might furnish to the whole world artistic productions that might vie with the works of Flaxman, if they did not equal the superhuman excellence of the Greeks.

A vote of thanks to Professor Aitchison was proposed by Mr. J. W. Swan, F.R.S., who

said that we in England suffered from our conservatism. We were a conservative people; that was a source of strength, but also of weakness. English people generally were too prone to adhere to old methods when new ones had been found which ought to supersede the old. Means were required, such as this exhibition afforded, for making known the improvements that had taken place in the building arts. The motion was seconded in a few sentences by Sir Arthur Blomfield, A.R.A., and heartily carried. Professor Aitchison's acknowledgement of the compliment concluded the proceedings.

### CROSSLEY BROS., LIMITED.

Messrs. Crossley Bros., Limited, of 10, St. Bride Street, are showing the following engines:—One eight manpower nominal horizontal gas engine, which is capable of giving a maximum effective horse-power of one and a half, at its normal speed of 270 revolutions per minute. One ten horse-power nominal horizontal gas engine, which is capable of giving a maximum effective horse-power of twenty-two, at its normal speed of 180 revolutions per minute. One two horse-power nominal horizontal oil engine, which is capable of giving a maximum effective horse-power of four and a quarter, at its nominal speed of 230 revolutions per minute. One four horse-power nominal high speed special electric light gas engine, with extra-heavy flywheel and extend bearing, capable of giving a maximum effective horse-power of 13·4 at its normal speed of 250 revolutions per minute. This engine is being employed to drive the electric lighting installation of the stand, which consists of six arc lamps and forty-eight sixteen candle-power incandescent lamps. All the above, except the oil engine, are shown in operation.

### THE EASILY CLEANED WINDOW COMPANY.

The E.C.W. sashes are on view at No. 106 Stand in Row F. The exhibitors claim that their method is the simplest and safest, as all sashes and fanlights can be cleaned from inside. The patent sashes, casements, and fanlights are adaptable to any window without alteration to the frames, and can be supplied ready to fit to new or old frames, solid or cased. The firm is willing to supply any architect with working drawings if he wish the builders to make the sashes, the fittings only being supplied by the E.C.W. Co.; and they specially invite architects and builders to inspect the patent at their stand, or at their offices at 15, Chester Street, Shrewsbury.

### EDWIN PALMER.

Palmer's Patent Wire-supported Travelling Cradle is now so well known that a notice of it is almost superfluous; but Mr. Palmer, of 250, Westminster Bridge Road, London, S.E., anxious that all the building public may become personally acquainted with its merits, exhibits a large size model of his "cradle" in full working trim. It needs but half an eye to see that it is destined, in course of time, to beat the old-fashioned cradle off the field, or, shall we say, the house front.

### SISSONS BROS. AND CO.

As we recently (in our issue for April 19th) drew attention to this firm's speciality—Hall's Sanitary Washable Distemper, it is superfluous to repeat here the particulars there given. It may suffice now to say that Messrs. Sissons Bros. and Co. show at their stand the varied applications of this material to all classes of work.

### W. G. AND L. ENGLAND.

It might with truth be said that of the inventing of different styles of reversible windows there is no end; and, carrying candour a point further, it might almost have been said that the reversible window, which had not some fatal defect or else required an apprenticeship in order to become acquainted with the vagaries of its working, still remained to be invented. Another point which has seriously hindered anything like a general

\* This report appeared in the Second Edition of our last week's number, published on Thursday last.



adoption of any style of reversible window, however desirable from every point of view such a general adoption might be, has been the question of costs. On account of the extra work involved, reversible windows must always be more expensive than windows not so fitted; but in the windows exhibited at their stand by Messrs. England, of Summer Lane Saw Mills, Barnsley (London representative, Mr. H. F. Pickering, 84, Melbourne Grove, East Dulwich, S.E.), the usual objections seem to be met in a simple and practical manner. Here we find an ordinary sash frame with sashes hung in the usual manner, excepting that the weights are attached to independent stiles to which the sashes proper are pivot hung at their exact centre. Both sashes and stiles are rebated so that when the reversing sashes are in their ordinary position, and a couple of flush bolts—one on either side at the head—in each are shot, draught proof sashes are secured that slide up and down in the ordinary way. In addition to the simplicity of construction and action and, of course, consequent thereon, we are informed that the cost very slightly exceeds that of ordinary sashes and frames. These windows should have a future before them.

#### THE ANDERSON PATENT PIPE COUPLING SYNDICATE.

This pipe coupling is designed to obviate the necessity of wiped solder joints, and is applicable to all kinds of block tin, lead, and lead to iron pipe connections. As applied to lead pipes, the ends are flared—a pair of special lead-pipe expanding pliers being employed—to fit the interior of the coupling (of brass); a special conical casting is then inserted between the two ends of the pipes and the coupling is tightly screwed up, making a joint which, it is claimed, is absolutely tight under any pressure. A further advantage is that the joint can be uncoupled and recoupled indefinitely without injury to the connection. Further particulars may be obtained from the Syndicate at Clun House, Surrey Street, London, W.C.

#### RIGBY, BATTCOCK, AND CO.

This exhibit comprises specimens of the various kinds of brushes and tools used in the painting and decorating trades; the quality of these goods Messrs. Rigby, Battcock and Co. (50, Bethnal Green Road, London, E.) claims to be "second to none." Specially noteworthy are their copper banded brushes and tools; and a description of their exhibit would scarcely be complete without reference to a couple of relics in the shape of stumps of what were once distemper brushes, the bristles showing remarkably even wearing properties, and still (so the firm claim) retaining their "spring."

#### JOSEPH WEDGWOOD AND SONS, LIMITED.

An elegant exhibit, in a special position, is that made by the above-named firm, of Etruria, Staffs., and Hutton Garden, E.C. (London agent, A. Richards). It shows in a pleasing and tasteful manner the application of glazed tiles to both internal and external decorative purposes. The interior of the building presents a complete scheme of decoration in the "Adams" style, entirely ceramic, treated in four tones of one colour, which at once convinces one that tile decoration can be made "restful enough for ordinary living rooms." With this is introduced with pleasing effect original Jasper plaques; these have subjects upon them modelled by such masters as Flaxman, Tassie, Hackwood, &c.; their beauty, therefore, needs no description. This style of decoration is particularly suitable for hall, smoking, or billiard rooms in private houses. On the exterior of the stand are seen examples of richly coloured schemes and bright warm tones, which lend themselves to the exterior decoration of public buildings (so desirable in this cold, grey climate), or the vestibules, saloons, and smoking rooms of hotels, theatres, &c. The oak mantel within the building has been specially made for this exhibit by the well-known firm (established over a century) of Messrs. Thomas Edwards

and Sons, Newcastle-under-Lyme, who have also furnished the room. The Jasper frieze in the overmantel is made from the original models of Flaxman, and represents the twelve dancing hours following the chariot of Aurora. The panel in the mantel is also from the original moulds, the subject being the nine muses. There are also a collection of vases, and specimens of all classes of tiles for walls, floors, &c.

#### ABRAHAM THOMAS COOPER.

Mr. A. T. Cooper, of 92, Moray Road, Finsbury Park, London, N., is at hand with his well-known suction and vacuum pump; his periodical seances with this appliance, in combination with the exhibit of relics comprising all manner of unconsidered trifles gleaned from the otherwise unfathomable fastnesses of choked sinks and drains, suggest latent possibilities in the shape of hidden treasures, when his pump, to which no obstruction seems sacred, once gets to work. Mr. Cooper also exhibits samples of Cooper and Bryant's patent "clinch" lock—"absolutely burglar proof." The advantages claimed for this lock over others are: (1) That, the bolt being constructed with an aperture at the end which slides over and clinches the catch firmly, the door is securely fastened, so as to prevent

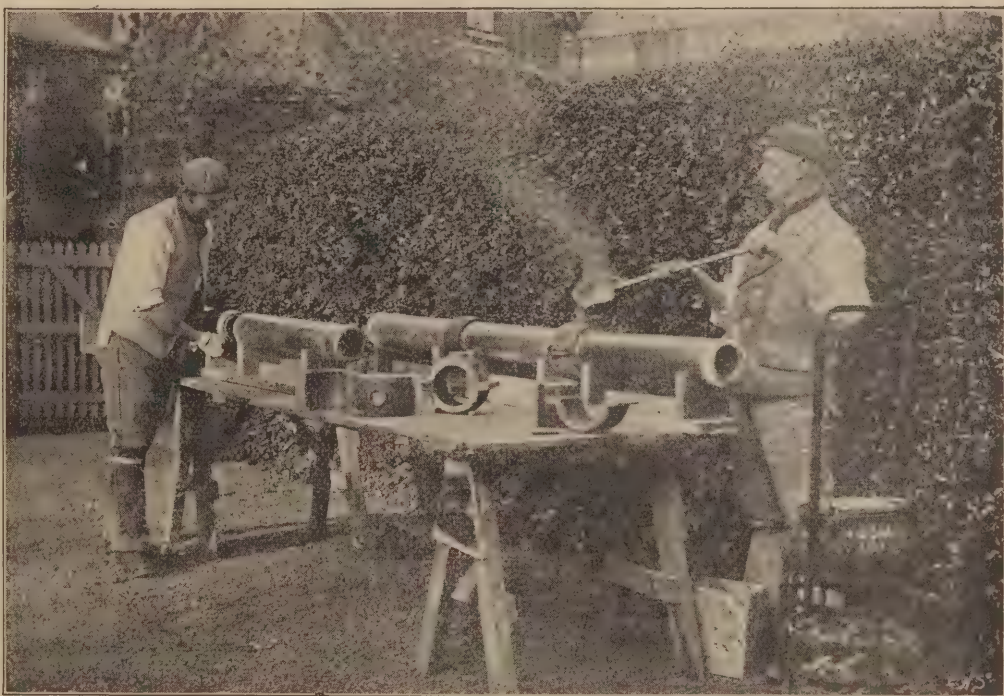
trouble was experienced from crooked pieces or bad joints." This speaks volumes for the care which the firm takes in executing its orders.

#### THE PATENT VULCANITE ROOFING AND ASPHALTE CO., LIMITED.

Vulcanite roofing—flat roofs covered with vulcanite and converted into gardens and promenades—seems to be steadily growing into favour, if we may judge from the photographic views of completed jobs issued with the catalogue of the Patent Vulcanite Roofing and Asphalt Co., Limited, of Dace Road, Old Ford Road, London, E., and Belfast. Samples of this material, also of asphalt damp-course, and felts for general building purposes, are on view at their stand; and those interested should make a point of visiting it, or of writing to the company for a catalogue.

#### LOWE'S PATENT SANITARY PIPE JOINT SYNDICATE, LTD.

The joint supplied by this firm is claimed by the makers to be a perfect and reliable water-tight joint as soon as it is completed. The patent consists in the use of bitumen for the joint, doing away with a socket altogether.



SHOWING METHOD OF MAKING LOWE'S PATENT SANITARY PIPE JOINTS ON SURFACE OF GROUND BEFORE LAYING IN TRENCHES.

any person from prizing the door open from the outside, and (2) that the catch which fastens the large bolt also slides a shutter over the keyhole, thus preventing picking or tampering with from the outside.

#### JAMES STIFF AND SONS.

This Lambeth firm are exhibiting a splendid collection of architectural terra-cotta work. The first thing that meets the eye in looking at the stand, is a richly carved Corinthian capital in terra-cotta. This is in very high relief, and forms a splendid centre to an interesting exhibit. Various styles of terminals, trusses, cantalivers, medallions, pedestals, vases, &c., in buff and red, are being shown. Sanitary stone ware is a speciality of the firm, and many specimens of their work are to be seen at the stand. Messrs. Stiff and Sons had an extraordinary task to perform some time ago. An order was given them to supply and send out ready for placing about 30,000 cubic feet of terra-cotta, to be manufactured from drawings made some 7000 miles away. They successfully accomplished this feat; and the architect states that "each piece fitted exactly into the place intended for it, and no

The joint is made by smearing the ends which butt with clay in a plastic condition. A cast iron collar is then fitted over the joint, and the bitumen is poured through a hole in the top. This mixture flows round the pipe, filling up the space between it and the collar, and completes the operation. The firm are demonstrating at their stand the strength of the joint by means of air pressure. The accompanying illustration shows the method of making joints on surface of ground, before laying in trenches. The address of the syndicate is, 315, Dashwood House, New Broad Street, London, E.C.

#### ENGRAVED WOOD, LIMITED.

A good selection of artistic wood panels, pediments, brackets, mouldings, &c., for a variety of purposes, will be found at this exhibit. The elegantly designed panels turned out by this Liverpool firm are much cheaper than those done by hand, and being wood throughout, are not liable to the drawbacks that seem inseparable from composition panels. Special attention should be paid to the patent chamfered panels, of which some splendid patterns are shown.





AN OVERDOOR (6FT. BY 1FT. 9IN.). EXHIBITED BY THE WOOD CARVING COMPANY, LIMITED.

### THE WOOD-CARVING CO., LIMITED.

This stand is, perhaps, one of the most artistic in the Exhibition. The front is formed of a Saracenic finement, and is a splendid piece of work. The firm are making a great speciality of this kind of work, and also their carved wood over-doors, a number of which are shown on the stand. The one here illustrated is typical of what they produce. Specimens of hand-carved panels, pediments, spandrels, capitals, and brackets are being exhibited, and the workmanship in all cases is excellent. Examples of mouldings for dados, picture frames, cornices, &c., made by the firm, complete this very pretty exhibit. The address of the company is Windsor Street, Birmingham.

### THE SANITARY LEAD LINING AND PIPE BENDING CO., LIMITED.

The patent lead lined pipes and fittings introduced by this firm are an important innovation. The firm claim that owing to the precautions taken, it is impossible for the lead lining to collapse. These pipes can be cut with facility to any length required. The lining is non-corrosive, and the iron casing so protects the lead as to render perforation or indentation a matter of impossibility. The Sanitary Lead Lining and Pipe Bending Co., Limited, of Cremorne Wharf, Lots Road, London, S.W., state that the pipes have been subjected to severe heat tests, and boiling water has been passed through them without any injury to the lining. At the exhibition a very extensive display of the pipes is being made.

### EWART AND SON.

Messrs. Ewart and Son, of 350, Euston Road, London, N.W., have a very large exhibit, a special feature of which is the hydraulic ventilator. This is driven by means of a water jet, and costs about one halfpenny per hour to keep going. It seems to be perfectly noiseless. The "Pagoda" soil pipe, made in copper or zinc, is a new thing, and admirably serves the purpose for which it is intended. Messrs. Ewart have succeeded in producing a porcelain enamel which rivals iron in hardness. The bath on which it is used is called the "Ewart agate porcelain bath." Although the enamel is so hard, it expands with the metal it covers. The geysers and heat radiators supplied by this firm are too well known to need describing here, but mention must be made of the fact that the "Acme" geyser supplies boiling water in the remarkably short time of one minute.

### BROAD AND CO. LTD.

Messrs. Broad and Co. Limited, of Paddington, who were the pioneers in introducing white enamelled ware into general use for drainage appliances, exhibit an excellent assortment of interceptors, grease and gully traps, channel pipes and junctions, manhole covers, and sanitary specialities generally. Their impermeable pipes are of so excellent a quality as to render the water pressure test

superfluous, but this test is still applied by them to these particular pipes, as also to salt glazed ware. They make a strong point of the design and configuration of their traps, &c., ease of flow and accessibility being leading features. This firm also exhibits samples of various kinds of bricks, brick-making forming an important branch of their business; amongst the samples may be found an exceedingly useful wire cut engineering brick, now being made at their Southall Brickworks; this brick is peculiarly hard, and has a ring like true metal. Broad and Co.'s patent sink is a most useful improvement on the old pattern; and will doubtless be largely used.

### W. P. BONWICK.

Mr. W. P. Bonwick, of 40, Clinton Road, Bow, London, E., is the manufacturer of "The Flaming Kitchener Cheek," which is a patent fuel saver and a smoke consumer. This patent cheek is made of the best Stourbridge fireclay, and is perforated with holes. These holes lead into central passages having exit at the top, through which the flames are drawn from the hottest part of the fire. Combustion takes place, and very little smoke or soot passes into the flues. "The Flaming Fire Brick" also serves the same purpose. Mr. Bonwick is illustrating the value of his patent at his stand at the exhibition.

### J. MITCHELL AND CO.

This firm occupy a prominent position on the ground floor, and the special feature of their stand is the enamelled fireclay bath, which is convenient and at the same time attractive in appearance. An article in great demand is their syphon closet, which is made in one piece. The firm claim that it is impossible for the closet to empty itself and so unseal the trap. They are exhibiting a new range of urinals which do not need a sparge-pipe, as the flushing rim is in the ware. The patent inspection valve is a very useful arrangement, as it affords ready access to the clearing arm of the sewer gas interceptor. The address of the firm is Craven House, Drury Lane, London, W.C.

### J. C. BROADBENT AND CO.

Although the employment of silicate cotton—sometimes termed "slag wool," the material being a mineral fibre, somewhat resembling wadding or cotton wool, prepared from slag, the refuse from iron smelting furnaces—for fire-proofing and sound-proofing purposes is no new thing, the material has not, perhaps, so extended an application as it might have were it better known outside the building trades. Favourable notice must therefore be given to the exhibit of J. C. Broadbent and Co., of Redcar, Yorks, and 93, Basinghall Street, London, E.C., who show a large sectional model of a building in which silicate cotton is used in every possible direction where its application would be of advantage. This exhibit seemed to attract a good deal of attention from visitors at the Exhibition.

### THE MURAL DECORATIONS SYNDICATE, LIMITED.

The Mural Decorations Syndicate, Limited, of 50, Milton Street, London, E.C., have one of the most attractive stands at the exhibition. At each end of the stand is a room, the walls of which are built with their patent terra-cotta and wire lathing for fireproof partitions. A dome, also made with the terra-cotta and wire lathing partially covered with their patent fibrous plaster, is over the space between the two rooms. The dome is supported by four columns, the centres of which are covered with the terra-cotta and wire lathing and fibrous plaster. Panels and statues made from the patent plaster are on view, and are very beautiful. The advantages claimed for the mural decoration are that it is solid in relief, that it does not alter, cringe, crack, or move after being hung, and that its artistic beauty cannot fail to charm. The claims of the company seem to be in the main justified; of the artistic beauty of the exhibit there can be no doubt.

### ASPINALL'S, LIMITED.

This firm's ordinary enamel is too well known to need any describing, but "Wapicti" is a recent success. It is a washable distemper, and has the properties of a strong disinfectant and antiseptic agent. It dries with a dull, flat surface, producing an effect not unlike fresco-painting. There seems to be no limit to the number of colours to be obtained. "Wapicti" is manufactured expressly for stopping the suction of porous walls, &c., and is a superior and effectual priming for new woodwork, saving coats of much more expensive paint. It will not decompose, chip, crack, or peel off, as is the case with size. An article of this description has long been the want of the decorating trade. "O" enamel is a good article; it gives a brilliant gloss, works easily, and dries hard. It is intended to be used for inside work. For outside work the Indian enamel is especially suitable. Both of these enamels are made in various colours. Inside the stand a door is on view which has been painted with the "O" enamel. It has a good appearance, and the enamel has set very hard.

### THE EMDECA METAL DECORATION COMPANY.

The decoration manufactured by this firm is unique. It is made of thin, flexible, gauze zinc sheets, which can be cut with ordinary shears and bent round the sharpest angle without injury to the surface coating. It is as easy to fix as ordinary artistic wall coverings. Paste made of two parts of ordinary whiting, and one part of white lead, well ground and thoroughly mixed with ordinary varnish, is the adhesive used. This is applied with a trowel or mason's scraper to the back of the sheet in a thin and even layer. The sheets can be applied to wood as well as to plaster, but not to walls or ceilings newly rendered with Portland cement. There are a number of attractive designs being exhibited, which are sure to commend themselves to visitors. The firm can work from a new design if a



sufficient guarantee to warrant the extra expense of making it is ordered. The Emdeca Co's. Offices are at 97, Queen Victoria Street, London, E.C.

#### GEORGE SKEY AND CO., LIMITED.

Messrs. Skey and Company, Limited, of Wilneote Works, near Tamworth, are showing an excellent combined sink standard and waste. It is made in stone ware, white, buff, or brown glazed to match the sink. The most important advantage in connection with it, is that one side is entirely open and the trap or pipe is thus exposed, so that when it is necessary to remove or clean the trap or pipe, this can be done without any trouble. These sinks are supplied with either one standard or two standards. Skey's channel and gully trap is claimed to prevent the suction of sewer gas or bad smells into the house through the sink waste, and to be self-cleansing. A variety of other sanitary appliances can be seen at this stand, among which may be mentioned the firm's salt and brown glazed kitchen sinks, sink bends, stoneware sink traps, improved manhole "channel" traps, Trew's grease traps, white and buff glazed channels, channel curves, and Roger Field's sewer gas interceptor. The red and buff chimney pots shown are well shaped, as is also the firm's spiral vent, which, they informed our representative, has sold in thousands on the coast.

#### THE LIMNER ASPHALTE PAVING COMPANY, LIMITED.

The interior of this stand is made attractive with a number of photographs. On each side of the stand is a long table on which will be found specimens of the asphalt made by the firm. Their rock asphalt is principally from Ragusa, in Sicily, and from their own mines at Montrotier, Bassin de Seyssel. The article is quarried in the usual manner and brought to England in the natural state. Refined bitumen, Bridport grit, and asphalt powder are being shown in great variety. The address of the firm is 2, Moorgate Street, London, E.C.

#### THE FIREPROOF PARTITION SYNDICATE, LIMITED.

This exhibit takes the form of a small shed composed of the Cunnah-Wright patent dove-tailed corrugated iron sheets for partitions, walls, floors, &c. They are fire, sound, vermin, and damp proof, and can be rapidly erected. Sections of the Cunnah-Wright patent laths are also being shown. These are intended to supersede all wood laths; they are perfectly fireproof. The stand also includes specimen bricks painted with Blundell's petrifying liquid. This material is an excellent substitute for glazed bricks, and produces a surface like porcelain. The standard colours are white and red. The address of the syndicate is 25, Billiter Buildings, London, E.C.

#### THE KETLEY BRICK CO., LTD.

The exhibit of this firm of manufacturers of terra cotta ware is one which cannot easily be overlooked. It takes the form of a fine doorway, suitable for an entrance to a gentleman's grounds. It is about 18ft. high, and is capable of being enlarged. It is built with their B.B. brand of best pressed facings. They have also a general display of brindle, panels, kerbings, garden edgings, &c. The address of the firm is Magersfield, Brierley Hill, Staffordshire.

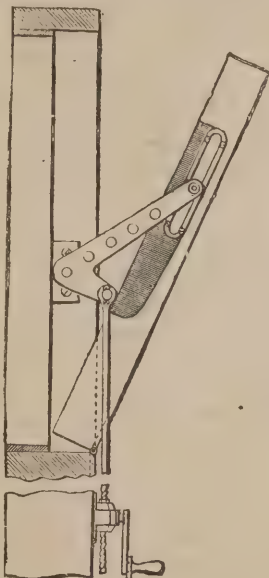
#### W. GRIFFITHS.

This stand fully illustrates the value of the speciality manufactured by Mr. W. Griffiths, of 39, Hamilton House, Bishopsgate Street Without, London, E.C. It has the appearance of having been built with glazed bricks, but on application to the gentleman in charge our representative was told that the bricks had been treated with "Opalite." This is a patent material for glazing bricks and wall surfaces. The exhibitor claims that the material is imperishable, and does not lose its beautiful polished surface by exposure. It is not limited as regards colour, several tints being obtain-

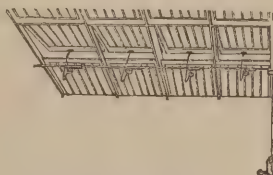
able. This glaze can be applied to old brick-work equally as well as to new, and, as it is cheaper than ordinary tiling, its wide adoption is only likely to be a matter of time.

#### ROBERT ADAMS.

The exhibit at this stand comprises models of the various manufactures which are each and all specialties of this firm, whose place of business is at 65 and 67, Newington Causeway, S.E. They include various single and double action spring hinges, door springs, opening gear for fanlights, lantern lights, &c., the "Caledonian" being very effective. Mr. Adam's exhibit of fanlight openers is perhaps the most comprehensive and varied that has yet been brought together. The "X IT" double swing doors, with Victor spring hinges and frame door bolts, deserve special mention; the striking feature of the latter being that whilst any rush at the emergency doors instantly releases the bolts, allowing the doors to swing outwards, yet



THE SECRET STAY FAN OPENER.



SKYLIGHT GEARING.

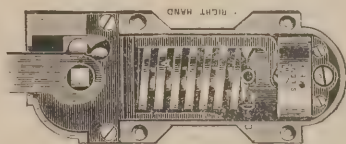
feature of which is a hollow spindle connected with a tap at the top, a turn of the plug of which will at once indicate if the pipe communicating with the valve is free or choked. A combination radiator and towel airer is also exhibited, this being formed of lengths of wrought tubing united at the junctions by iron cast *in situ*.

#### W. PARKINSON AND CO.

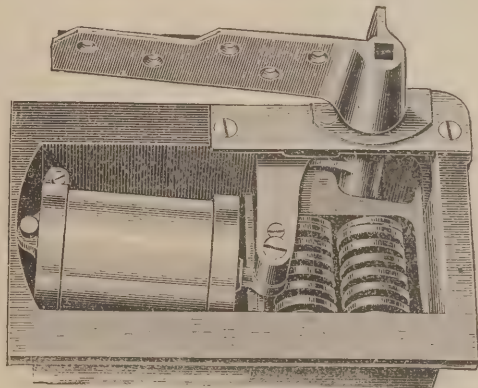
Messrs. Parkinson and Co., of Bell Barn Road, Birmingham, have a very attractive array of gas cookers for domestic and hotel use. The Victoria patterns of gas fires in various designs and enamelled black are in evidence on the stand. Parkinson's patent breakfast griller is no doubt an excellent affair to cook one's breakfast, especially quickly and cleanly. The patent prepayment gas meter supplied by this firm is used in conjunction with the "P. P." cooker, and this is certainly a good combination. The meters are supplied in both the wet and dry forms.



THE "EMPRESS VICTOR" DOOR SPRING.



VICTOR SPRING HINGE SINGLE ACTION.



THE VICTOR PNEUMATIC SPRING SINGLE ACTION.

EXHIBITED BY ROBERT ADAMS.

from the outside the doors are securely fastened, a key being necessary to gain admittance. Reversible windows are also shown fitted with the Pullman patent sash balances (spring) in place of the usual weights, a metal ribbon replacing the customary cords of weight hung sashes.

#### THOMAS POTTERTON.

Mr. Potterton, of Cavendish Works, Balham, S.W., who is now associated with Mr. Frederick Dye, exhibits his well-known dual hot water boiler, as adapted for heating from the kitchen fire, the two halves of which form a zig-zag flue, and thus expose a large heating surface to the action of the heat escaping into the chimney. Upon superficial observance it would seem that a boiler with so many angles and corners would offer a great inducement for a good collection of "fur," and, still further, offer great difficulties in the way of its removal. But "the proof of the pudding is in the eating," and Mr. Potterton asserts that they give no trouble in either direction, experience having proved that the only deposit takes place at the lower portion—that in direct contact with the fire. Potterton's indicating safety valve is also shown, the

#### THE CRANSTONE ENGINEERING WORKS, LIMITED.

Hoisting tackle of different kinds forms the principal exhibit of this firm, whose works are situated at Hemel Hempstead. A dinner lift is also shown; but the chief item of interest is a patent self-sustaining, quick-speed, sack hoist, the only quick-speed hoist, so the firm claim, which is self-sustaining. But there it is, ready to sustain its reputation as well as its load before anyone who cares to inspect it and critically test its capabilities.

#### JOSEPH KAYE AND SONS, LTD.

Kaye and Sons' stand always seems to be a centre of attraction in any exhibition; and visitors who may be drawn thither by other than feelings of curiosity will find the exhibit worthy of a close inspection. The name of Kaye has long been associated with much that is novel and of value in the way of locks and fastenings, and their automatic safety railway carriage door lock is so well known that it is almost superfluous to draw attention to it. The firm's panel door fittings, also, are highly ingenious, providing that doors with which they are fitted, whilst perfectly secure as against intrusion from the outside from anyone



not duly provided with a key, nevertheless, instantly yield to a slight pressure from the inside, throwing the doors open outwards. Kaye's locks and fittings for ordinary doors also display considerable ingenuity in their design, and indicate the firm's best efforts to baulk the enterprise of Mr. William Sykes. The works of Kaye and Sons are at Hunslet, Leeds, and the firm's London address is 93, High Holborn, W.C.

#### BRILLIANT SIGN CO., LTD.

This firm's stand is resplendent with a display of numerous examples of "Brilliant" concave metal letters and lettering, &c., in wood, glass, metal, enamel, and opal, for all kinds of effective display, for tablet and window decoration, and for any and every advertising purpose. Readers who desire to know further of the company's specialities should apply for specimens and prices at 38, Gray's Inn Road, London, W.C.

#### THE MOSAIC MANUFACTURING CO.

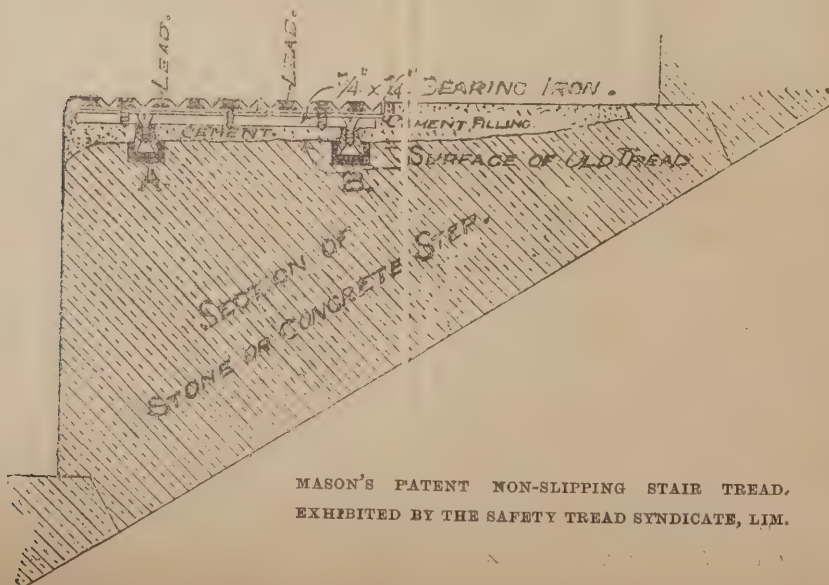
This firm's exhibit comprises varied examples of their specialities in the way of Roman and Venetian marble mosaics, Venetian glass mosaic, and ceramic mosaic, in many pleasing patterns, with a nice range of colouring. Pattern sheets and further particulars may be had from the company at 119, Pentonville Road, London, N.

#### THE WELSBACH INCANDESCENT GASLIGHT COMPANY LIMITED.

The company have made good use of the special position allotted to them, and have a striking display of the illuminative and decorative goods they manufacture. Claiming to have a monopoly of the rare earths with the salts of which their "mantles" are impregnated, the Welsbach Company (of York Street and Parmer Street, Westminster, S.W.) claim that the average life of their mantles is ten times that of any of the manufactures of competing companies. Of the advantages of the incandescent lights over the ordinary burners nothing need be said, the facts being too firmly established to need any additional bolstering up. But the beauty and attractiveness of the light is much enhanced by the elegantly designed fittings shown, and not less so by the beautiful designs in glassware used in conjunction therewith.

#### T. C. FAWCETT LTD.

This Leeds firm (Whitehouse Works, Hunslet) are exhibiting several specimens of their hand and power brick and tile making, pressing and repressing machines, and also samples of the various manufactures for which they make special machinery. The firm seemed to be doing business, for we noticed three of their exhibits were ticketed as "sold" early on the day following the opening ceremony.



MASON'S PATENT NON-SLIPPING STAIR TREAD,  
EXHIBITED BY THE SAFETY TREAD SYNDICATE, LIM.

#### DOWSON, TAYLOR, AND COMPANY, LIMITED.

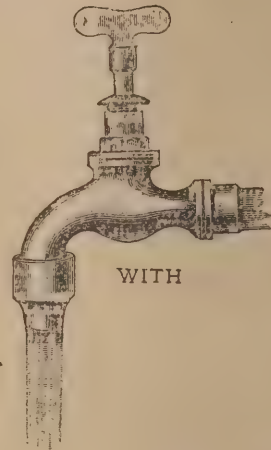
Armoured fire-proof doors, consisting of two or three thicknesses of wood and covered on either side with tinned steel sheets of small size, fixed without solder, is the exhibit of Messrs. Dowson, Taylor, and Co., Limited, of 14, Victoria Street, London, S.W. It might seem a peculiar idea to use wood in the construction of anything desired to be fireproof; but when it is considered that the steel armour effectually excludes air, and that consequently sufficient oxygen could not reach the wood so as to support combustion it is easy to realise that such a door possesses many advantages over a door made of solid iron, which, in addition to being heavy, easily and quickly twists under the influence of excessive heat.

#### THE SAFETY TREAD SYNDICATE LIMITED.

The prevention of accidents to life and limb is a worthy aim, and the The Safety Tread Syndicate, Limited, of 15, Barbican, London, E.C., have this object in view. The manner in which they are prosecuting it is by means of non-slipping stair treads, hydrant and man-hole covers, coal plates, etc., all covered with their speciality, Mason's patent, unwearable, non-slipping treads. The treads are a combination of steel, iron, or other hardened metal with lead. One advantage they possess which should make them invaluable to hospitals, is that they are comparatively noiseless, the lead only coming into contact with the feet. Worn steps can be repaired by this system much more cheaply than with stone. Every step of the Tower Bridge is covered with this arrangement, and the number of government buildings in which it is used should render any further recommendation unnecessary. The accompanying illustration shows the manner in which worn stone or concrete steps are renovated with the "unwearable" non-slipping treads. For worn stone or concrete steps, cut mortice holes for caulking nuts in tread of step, as shown at A and B in the illustration. Chip down the face of the tread on step at ends (if not worn) the thickness of the patent covering, so as to obtain the original level of tread. Put the covering in position, and test the same with spirit level both lengthways and across the step. Then run in caulking nuts with lead. When these are fixed, the patent covering can be taken off, the steps made up with cement or concrete, and the covering refixed. Care should be taken to chip away back of step, as shown in the illustration, so as to give a dovetail key to the cement, or whatever material is used for making up the back of steps. If 3½ in. nosing only is desired, no bearing irons are required, only caulking nuts.



WITHOUT



WITH

THE ANTI-SPLASH TAP, MANUFACTURED BY  
THE ANTI-SPLASH SYNDICATE.

#### NEWMAN WILKINSON.

Mr. N. Wilkinson, of 2, Gresham Buildings, Basinghall Street, London, E.C., is exhibiting a novel arrangement which fits on to any ordinary water tap, and prevents splashing. This anti-splash is made of excel silver, a metal claimed to be perfectly hygienic and non-corrosive. The illustrations given above of a water tap without the nozzle, and one with it, render any further description of its action needless. Mr. Wilkinson is also exhibiting a variety of electric lamps.

#### YATES, HAYWOOD, AND CO.

This exhibit comprises a large collection of high-class wood and iron mantelpieces and overmantels, some of the designs being exceedingly chaste. In addition thereto the goods on view comprise a varied selection of stoves, interiors, and mantel registers. Shown in operation are specimens of the firm's patent "Quadrant" kitcheners, and the patent "Guinness" self-setting range. Messrs. Yates, Haywood, and Co.'s address is 95, Upper Thames Street, London, E.C.

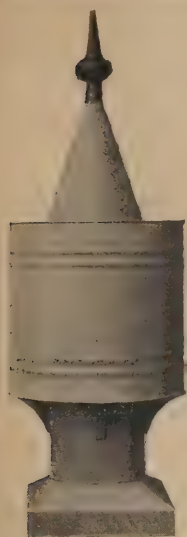
#### THE INCANDESCENT ACCESSORIES AND MAINTENANCE SYNDICATE, LIMITED.

In addition to a good display of daylight and incandescent burners and mantles, together with accessories of a varied and pleasing description, the Syndicate are showing what they term the "Thrifty" incandescent burner—a special, mantleless burner of an improved argand type. Whilst not throwing so good a light as the ordinary burner with mantle, this burner is worth attention as obviating the expense of mantles, which many find to be a great drawback. Further particulars and prices may be gleaned by addressing the Syndicate at 11, Farringdon Road, 59a, Farringdon Street, or 24, Hatten Garden, London, E.C.

#### MOORWOOD, SONS, AND CO., LTD.

Occupying a large stand against the wall of the hall, Messrs. Moorwood, Sons, and Co., Ltd., of Sheffield, and 15, Southampton Row,





"A" DESIGN.



"B" DESIGN.



"C" DESIGN.

"MANSFIELD" VENTILATORS. EXHIBITED BY THE MANSFIELD PATENTS COMPANY, LTD.

Holborn, make a large exhibit, primarily devoted to cooking-ranges and appliances suited for hotels, clubs, institutions, &c. A ventilating ward stove may also be mentioned, and several fireplace suites of elegant design are worthy of close inspection.

**THE MANSFIELD PATENTS COMPANY, LIMITED.**

This firm has a stand which contains so great a variety of sanitary appliances that we will not attempt to enumerate all of them, but will select a few of the most important. The "Mansfield" closet basin is one which ought to be durable, as it does not contain any perishable or corrosive materials, and brass ferrules are conspicuous by their absence. Rigid iron bends do not find a place in its manufacture, and, therefore, there is no lack of vibration. The "Mansfield B" block for connecting lead soil and drain pipes is a more lasting affair than a brass ferrule. To obtain an iron pipe junction which will stand any pressure or strain, and be proof against leakage of gas or water, is not easy. The "Mansfield" Company claim that their patented sanitary iron pipe junction possesses these advantages. Many other things are also shown, including several patent chimney pots, heating radiators, and ventilators. The "Mansfield" ventilator, of which we give three illustrations, is an excellent arrangement. The address of this firm is Mansfield, Notts.

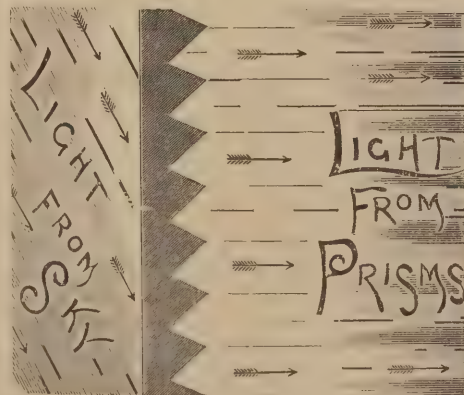
**BRITISH LUXFER PRISM SYNDICATE, LTD.**

This exhibit is a remarkable one in many ways, but the awkward lighting of the stand does not do justice to the articles exhibited. In the design of the Luxfer pavement lenses a radical departure has been made from all other pavement prisms. The latter attempt, unaided, to throw the light to the rear of a basement; the former throw it downward, and upon a plate of window prisms which, in its turn, throw the light horizontally into the apartment. The whole of the Syndicate's window glazing, whether plain, ornamental, or prismatic, is of the style they describe as "Electroglass." Briefly, the pieces of glass are cut to pattern and size and laid upon a forming table; strips of copper ribbon are then placed between each adjacent piece of glass; the joints are temporarily soldered, and the whole sheet is then immersed in a copper depositing bath, in which the deposited copper forms a flange on each side of the glass, securing it firmly in position, and also filling up all interstices caused by irregularities in the cut edges of the glass, thus making, as it were, a continuous sheet of glass and metal. The compactness of "Electroglass" may be judged when it is stated, and evidence to prove the statement is not wanting, that when a sheet of it is subjected to flames until it is red hot,

and then played upon with cold water, though each square of glass may be fractured into a thousand pieces, its homogeneity is such that the plate remains intact and thoroughly fireproof. Fire will never reach beyond it until the woodwork in which it may be fixed is burned away. The syndicate are also showing some neat and intricate specimens of electroglass as applied to the doors of bookcases, and also what, for want of a better term, we may describe as electroglass lead lights, the usual lead strips being replaced by the copper strips with the electrical deposit on either side. Electroglass is an undoubted triumph, as also are the Luxfer prisms; and the fire-resisting qualities of the former are tested before anyone interested upon any day at the Syndicate's Works, 16, Hill-street, London, E.C. Those interested, but unable to



SHOWING COPPER DEPOSIT OVER EDGES.



SHOWING THE FRACTION OF LIGHT BY LUXFER PRISMS.

THE LUXFER PRISMS. EXHIBITED BY THE LUXFER PRISM SYNDICATE.

attend, should send for a Manual of Luxfer-prisms and Electroglass. The illustrations show one of the Luxfer prisms with a sectional diagram.

**WILLIAM BROWN.**

The "Bricklayer Steeplejack," as Mr. Brown, of 55, Beechey Street, Oldham, terms himself—he claims the distinction of being the only "jack" who is a practical brick-setter—has a stand by the wall, on which he makes a good display of various items used in the pursuit of his highly dangerous calling, as well as a number of photographs of jobs he has successfully negotiated, such as imparting rigidity and plumbness to shafts which had acquired a more or less decided tendency to assume the horizontal position; lengthening stacks whose already giddy height was deemed insufficient, without stoppage of works; and razing to the ground those whose weather-beaten sides were no longer able to stand the strain and stress of tempest. A feat in the latter category of which Mr. Brown is proud—it creates a record—is the throwing of a shaft 210ft. high, and piling up all the débris within 80ft. of the base, a feat witnessed by over 30,000 people, and of which Mr. Brown says in his own forcible way he "meant to do something, or be under it when it came down." Mr. Brown exhibits several contrivances of his own invention, one being a building-in holdfast to take a copper tape lightning conductor with a detachable clip, and another being one that should, if better known, be of use to the building trade generally—patent clips to replace ropes for lashing scaffolding. When lengthening chimneys whilst work is still going on beneath, the heat generated is sufficient to char ropes, consequently their use on such jobs is attended with great risk, hence the clips which, in point of time saved, must effect a great economy in the cost of scaffolding a building. Samples of special close textured bricks, specially made for chimney work by the Whinney Hill Plastic Brick Company, are also exhibited, and various styles of terminals for lightning conductors;



A ROOM BEFORE THE APPLICATION OF THE PRISMS.



THE SAME ROOM WITH THE PRISMS.



but the most elaborate exhibit is a polished copper nine-pointed "magnet," or terminal designed as an architectural feature for capping spires, &c.

#### J. B. STONE AND CO.

The stand of Messrs. Stone and Co., of Chiswell House, 135, Finsbury Pavement, London, E.C., representing the Fox Machine Company, The New Britain Machine Company, and the S.A. Woods Company, seemed to be a centre of attraction, much interest being apparently manifested in the exhibits, possibly on account of the intricate work being done upon a 36in. band saw with laminated wood driving and saw straining wheels, the band saw in use being exceedingly fine. The Fox trimmers were being shown in several sizes trimming the edges of boards, an adjustable fence, perfectly rigid at any set angle, allowing cuts to be made in any desired direction. These machines worked exceedingly well and with evident ease, the cuts being as smooth as if dressed with a finely-set smoothing plane. We were informed that several thousands of them had already been sold in London alone. A combination rib and cross-cut saw bench with disappearing saws, a railway cut-off saw, a 24in. thicknessing machine, a surface planer with sliding tables for easy access to the cutter bar, and a wet or dry knife grinder, were also shown at work. A noticeable feature of the installation was the slackness of the driving belts, gripping of the pulleys being secured by double spiral grooves cut in their face.

#### T. W. PALMER AND CO.

Messrs. Palmer's exhibit comprises unclimbable iron fencing and gates, hurdles, galvanised cisterns, dustbins, &c. Their works are at Stockwell, and their offices and showrooms at 5, Victoria Street, Westminster, S.W.

#### GEORGE JENNINGS.

The well-known sanitary engineer of Lambeth Palace Road, London, S.E., exhibits a good collection of his improved sanitary and building appliances, comprising baths, water closets, lavatories, sinks, urinals, bonding bricks, damp-proofing courses, drain pipes, traps, &c.

#### JOHN TANN.

John Tann, of 11, Newgate Street, London, E.C., who boasts a business pedigree in the safe line of over 100 years, has a good show of various kinds of fire and thief-resisting safes, &c.

#### ASHTON AND GREEN.

This firm, whose business address is 11, Bevis Marks, London, E.C., have a good show of chimney-pieces in marble, enamelled slate and wood, stoves, interiors, tile hearths, curbs, baths, sanitary goods, and general builders' ironmongery, together with a selection of ranges in operation, showing the many improvements effected by the firm in this class of goods.

#### THE OWEN STONE CO., LIMITED.

The Owen Stone Company, whose works are at Worpleston, Surrey, with offices at 22, Austin Friars, London, E.C., exhibit several specimens of their stone both in a rough and finished form. Owen stone, it should be mentioned, is an artificial product of a creamy colour, prepared from dry quartz sand, dug in the vicinity of the works, and mixed in a dry state with a percentage of hydraulic lime. Still in a dry state, the mixture is packed into moulds and placed in a steel cylinder into which water, near the boiling point, is admitted. As the lime slakes, the material, having no free play, is compressed within itself, which tends to render the resultant stone very compact.

#### THE BRITISH COMPO BOARD CO.

The present partial deadlock in the building trade—so far as plastering is concerned—is the extremity which provides the opportunity for

the introduction of plastering substitutes, and the British Compo Board Co., of 18, Roscoe Street, London, E.C., are attempting to improve the occasion by showing at their stand the adaptability of their product to replace the plasterer with his attendant mess. Compo board consists of fillets of wood about 1in. wide and 1/4in. thick, the grain of adjacent pieces running in contrary directions, cemented together with a fireproof cement. On either side of the wood core compact, damp-proofed paper boards are cemented, and when the whole is pressed between iron plates a very compact substance is produced. Compo board is manufactured up to 4ft. wide and 18ft. in length, and thus readily lends itself to treatment for covering ceilings, walls, partitions, &c., large expanses of the material being easily broken up by affixing mouldings to its surface. It takes paint or distemper well, is fixed by nails in the ordinary way, and will doubtless command a large sale for many purposes where a large smooth surface is an advantage.

#### CHAS. ATKINS AND NISBET.

What is "Stripso?" "Stripso" is a composition for the rapid removal of paint, varnish, &c., without occasioning any damage to the wood; and this preparation, so Messrs. Atkins and Nisbet (of 1, Water Lane, Great Tower Street, London, E.C.) allege, has not the slightest injurious effect upon any part of the work. Shown in use at the stall, it certainly seemed to be all that was claimed for it.

#### J. SAGAR AND CO.

Woodworking machinery makes a brave show in this year's exhibition, and Messrs. J. Sagar and Co., of Canal Works, Halifax, whose machinery bears a reputation of the highest class, are well to the fore with a full line of machines to suit general requirements. Their "Premier" combined hand and roller feed surfacing, thicknessing, and moulding machine is a standard tool, accommodating stuff from 1 1/2in. to 7 1/2in. in thickness, and up to 20in. in width. Circular saws, band saws, a fourcutter moulder, a vertical spindle moulder, a tenoning machine, a mortising and boring machine, planing and knife-grinding machines, complete the list of a useful and high class exhibit.

#### W. AND C. JOHNSON.

A good collection of various hardwoods in boards, plank, and square is shown by Messrs. Johnson, of 118, Hoxton Street, London, N.E. Specially deserving of mention are some very fine quality oak, walnut, and mahogany squares and boards; also a fine board of American whitewood, 3ft. 3in. wide.

#### SAMUEL WRIGHT AND CO.

Plain and decorative fibrous and fireproof plastering is the exhibit of Messrs. Wright and Co., of Crown Works, Andre Street, Amhurst Road, Hackney, London, N.E., a special feature being made of fibrous plaster slabs, with a perfectly smooth face, of which Messrs. Wright are supplying a quantity to a job at Nottingham which was stopped owing to the plasterers' dispute. The firm also manufacture artificial stone, and were exhibiting samples thereof.

#### THE EDISON AND SWAN ELECTRIC LIGHT CO., LTD.

This well-known electric lighting firm has, perhaps, one of the most striking exhibits. It is in the form of a kiosk, and shows nearly all their latest improvements in electric lighting. Special attention should be paid to the Ediswan closed motor, which is thoroughly dustproof, and has a patent clutch pulley. A variety of high voltage switches is being shown. The attention of the visitor is sure to be drawn to the beautiful brass electrolier suspended from the roof of the stand, and it is almost certain that he will be attracted by the Queen lamp. This is a prettily-designed lamp; its light is covered with a delicately-shaded opal top, and its whole appearance is artistic. A quality it possesses is sure to make it a popular lamp, i.e., a large increase of light without a greater

consumption of current. They have a life-size bronze statue of a page holding an electric light in the centre of the stand, which is a fine ornament for a hall. Although the stand is at the end furthest from the door of the electric lighting appliances section, the eye will, perhaps, be first drawn to it, owing to the trade mark of the firm, "Ediswan," in various coloured lights, being placed on the top of the front of the stand. The address of the firm is 36, Queen-street, London, E.C.

#### GEORGE B. DAVIS.

Mr. Davis, of Westminster Sanitary Works, Great George Street, London, S.W., has a very nice exhibit opposite the stand of THE BUILDERS' JOURNAL. A large number of lavatories are being shown, among which is the "Empire" twin lavatory. This is a novel arrangement of the basins, and is of special advantage where space is limited. Although the lavatory is but 3ft. wide, it affords every facility and comfort for two persons, in fact more than with a straight lavatory of greater width. A bath made of sheet copper that is being shown is not a very pretty affair to look at, but it has qualities that recommend it. By a very simple manipulation a spray plunge, wave, douche, or shower can be obtained when taking one's morning constitutional bath. It is an excellent bath, although clumsy in appearance. Examples of patent stall urinals, "syphonic" closets, ventilating apparatus, all kinds of baths, improved quick waste sinks, help to make a very complete exhibit of sanitary articles.

#### JAMES WOODWARD.

Mr. James Woodward, of Swadlincote, near Burton-on-Trent, has a very large stand at the Liverpool Road end of the hall. It is devoted to a large number of stoneware pipes and connections, channels for manholes, intercepting traps, glazed bricks, urinals, and closets. The "Archer" patent jointed pipe is being exhibited; it is a pipe for laying in waterlogged ground. Ewing's X-centric shoulder pipe is being prominently displayed, and the pipe is suitable for sewers, drains, and electric cables. It has a gas and watertight joint, and the mode of laying consists in placing a roll of clay or plastic round the bottom of the socket before the pipe is driven home. The socket is then packed with Portland cement in the usual way. Mr. Woodward is showing a case of glazed bricks in various colours, which are certainly well made.

#### HALL AND BOARDMAN.

Messrs. Hall and Boardman, of Swadlincote, Cadley Hill Collieries, near Burton-on-Trent, occupy a very prominent position at the Exhibition. There is a very large selection of sewerage pipes and fittings on view—not an attractive exhibit from the spectacular point of view, but worthy of the attention, nevertheless, of those interested in sanitary matters.

#### DIESPEKER AND COMPANY.

We noticed this stand at some length in our last week's issue, but by a printer's error it was stated that the firm had laid about 1500 yards of mosaic for the Metropolitan Asylums Board; the quantity should have been 15,000 yards. The error was corrected in our second edition.

#### THE NEWELLITE GLASS TILE CO., LIMITED.

The Newellite Glass Tile Co., Limited, of 139, Cannon Street, London, E.C., are showing their patent wall tiling. By means of the Newellite patent process a sheet of opal glass of any colour is converted into an opal tile of great beauty, soft tone, and high reflecting power, which, properly fixed with a backing of cement to a wall surface, is practically indestructible. By means of a second patented process a design in any colour or colours can be transferred and permanently burnt into the surface of this tile, with the result that at a very slight cost an effect is produced equal to the most beautiful specimen of decorative glass, faience, or ceramic ware.



**JAMES GIBBONS.**

This stand has an artistic display of brass-work of nearly every description. The top of the stand is surrounded with embossed brass which is very finely executed. Nearly every description of locks seems to have found a place in the show case, and Mr. Gibbons can fairly claim to be a builder's complete ironmonger. The E. C. Reversible window is a simple affair, and the outside of the window can be cleaned from the inside. He is showing two kinds of this window, one which can be put into existing cases, and another which has to be put in when the house is being built.

**WILSON AND CO.**

In addition to the articles mentioned last week as being exhibited by Messrs. Wilson and Co., of 24, Harrison Street, Gray's Inn Road, London, W.C., may be mentioned their "safety" pavement lights. These pavement lights prevent slipping, and also meet the objection made to the projecting studs on the surface of pavement lights, especially in front of shops and at entrances. The upper portions of the frames are made entirely of lead, and constitute a firm and even hold for the foot, as well as forming a much more sightly pavement light, as the lead is finished quite flush with the glass. Messrs. Wilson and Co. also make these pavement lights with the lead bars partly intersected with ornamental tiles or mosaic work.

**THE KAURI TIMBER CO., LTD.**

The Kauri Timber Co. (West Australia) Ltd., whose agents are Messrs. Fry, Morgan & Co., of London, are exhibiting a great many samples of jarrah wood, polished and unpolished. The specimens shown illustrate the value of the wood under certain conditions. Some athletic accessories made from the pine are being exhibited, and the make and finish of these is very good.

**THE MOSAIC MANUFACTURING CO.**

At stand No. 52, Row B, the Mosaic Manufacturing Co., of 119, Pentonville Road, N., are exhibiting a number of very fine samples of Roman and Venetian marble mosaic. The original designs of many of the floors recently executed by this firm are also on view. Their stand, which has been formed so as to allow a passage from Rows B to A, is paved with black and white Roman mosaic.

**MESSRS. GIBBS AND CANNING.**

This firm is exhibiting a very fine buff terra-cotta porch, which has been specially designed for the exhibition by Mr. C. H. Townsend, A.R.I.B.A. It is typical of the work they turn out. White and salt glazed bricks are a speciality of the firm, whose address is, Glascote, Tamworth.

**THE WADE DISINFECTANT SYNDICATE, LIMITED.**

This syndicate is exhibiting its patent self-acting "Government" disinfectant, which will fit any flush tank or cistern. The apparatus consists essentially of a containing vessel, from the upper surface of which, and communicating with the interior, rises a curved tube, the free end of which descends to within about an inch of the bottom of the cistern. On the upper surface of the containing vessel, and flush with it, there opens a small bore tube for the ejection of the disinfectant, the quantity of which is regulated by a sliding tube in which the free end of the tube terminates. The action of the disinfectant is purely automatic.

The Wigan Carpenters and Joiners have been awarded an advance of  $\frac{1}{4}$ d. per hour on their present wage by the arbitrator appointed by the Board of Trade. The workmen asked for an advance of 1d. and a reduction in hours from 54 $\frac{1}{2}$  to 49 $\frac{1}{2}$ . The award gives no reduction in hours, and is to come into operation on September 1st.

**SMOKE ABATEMENT SECTION.**

"Smoke" is in the air. In other words, the subject of the pollution of the atmosphere by coal smoke is beginning to attract serious attention. That a smoke-laden atmosphere is bad from every point of view is admitted; and, although it is asserted that the prevention of this contamination is not only possible, but even easy and profitable, these theories yet remain to be converted into proven facts. So long has the smoke fiend been with us that we have almost ceased to cavil at his objectionable presence, except at such times as a "London particular" holds in its murky embrace the vomit of a million sooty uptakes. Now the old order changeth, and things in this particular direction are to become new—that is, if the Coal Smoke Abatement Society can accomplish the aims of its founders. As a step in the right direction, a Smoke Abatement section is found located in King Edward's Hall; but in spite of the fact that medals, designed by the eminent president of the society, Sir William Richmond, were offered as awards, the section cannot be pronounced a decided success. We were hoping to find—and were disappointed in not finding—a goodly display of inventions faculty competing for public favour. Whilst stoves fed with oily or gaseous fuel are certainly coal-smoke preventers, they leave the larger problem untouched. But an Englishman loves a coal fire—something he can poke at; then what is wanted, if we are to retain our national characteristic, is some method of insuring that the products of the combustion of coal shall not escape into the atmosphere, which we have to pass through our lungs, laden with carbon in the form of soot. "Soot," said Dr. Julius B. Cohen, in a lecture delivered before the Leeds Philosophical Society, "is not pure carbon; it contains about 15 per cent. of a thick oil, by virtue of which it adheres tenaciously to everything, so that much of it cannot be removed by rain. Then, not only should we gain from an hygienic point of view, but also from the architectural standpoint, if the smoke nuisance could be successfully combated.

Owing probably to the disappointing character of the majority of the exhibits, the gold and silver medals offered by the Coal Smoke Abatement Society have not been awarded. Bronze medals, however, have been awarded to E. E. Pither for his "Ever Radiant Stove" for anthracite coal, and to the London Warming and Ventilating Company for their Anthracite Drawing-room Stove. The judges were Messrs. Raphael Meldola, F.R.S., H. A. Des Vaux, M.D., Stephen H. Terry, M.I.C.E., Ernest Newton, G. Wyld, M.D.

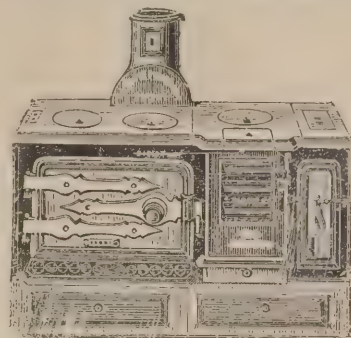
**HY. ROSSELL AND CO., LIMITED.**

This firm, whose address is Waverley Works, Effingham Road, Sheffield, exhibit an automatic attachment connected to the furnace door of a steam boiler, by means of which, at each time of firing, an amount of air is admitted in sufficient quantity to ensure perfect combustion of the gases generated, and at the precise moment required.

**ERNEST E. PITHER.**

At this stand a "Dual" kitchen range is shown in action, burning "slack" coal, of which the average consumption of a 5ft. range is set down at 5 $\frac{1}{2}$ cwt. per week. The construction of the fire of this range is peculiar; for, although the fuel is fed at the top in the ordinary manner, the flue opening is at the bottom, consequently all smoke given off by the coal is drawn through the fire and entirely consumed, the residue from the flue taking the form of a grey dust, without, apparently, a trace of carbon left behind. Mr. Pither, whose address is 36, Mortimer Street, Cavendish Square, London, W., also exhibits an independent smoke-consuming range, "The Thrifty," and a galley stove designed upon the same principles, for an exhibit of which, in the nautical section of the Cookery and Food Exhibition at the Imperial Institute, the firm was awarded a diploma, of which they are justly proud. Independent heating

apparatus, designed upon the same lines, is also a speciality of the firm, and one of these boilers, with an 8in. fire, consuming 6 $\frac{1}{2}$ cwt. of slack per week, is giving a hot water supply, consisting of four baths and thirteen draw-off taps, to twenty families and eight workshops in a block of London County Council buildings. In connection with this exhibit, Milne's anti-down-draught chimney-pot is shown. Strongly made of galvanised iron or steel, and painted



COOKING RANGE. EXHIBITED BY  
ERNEST E. PITHER.

a terra-cotta colour, it has much to recommend it as a substitute for the usual unsightly "tall-boy." Its action being syphonic, the main flue is not affected by atmospheric depression, and the up-draught is very considerably increased; whilst there being no loose or revolving portions, no impediment is offered to the sweep's brush when the flue requires cleansing.

**RICHMOND & CO., LTD.**

At this stand Messrs. Richmond, whose show rooms are at 132, Queen Victoria Street, London, E.C., are exhibiting "The Quaker Grate," a stove designed to burn coke or anthracite coal, and for which it is claimed that it is the first successful appliance of the kind calculated to occupy the place of the ordinary English open fire grate, while competent to burn the cheapest description of fuel; hitherto, it has been impossible to burn such fuel, except in closed stoves, which have a dull appearance and yield a "stuffy" heat without ventilating the room. In "The Quaker Grate" a wire gauze blower creates a strong draught through the fire, without obscuring the glow of the fuel. A feature of this grate is a rocking bottom, whereby the contents of the fireplace can be freed from ashes to the last morsels of combustible fuel. It can also be used for burning ordinary coal where the chimney gives any trouble due to defective draught. The cost of fuel, with coke at 6d. per bushel, is set down at from 2d. to 3d. a day only. In the Arcade Messrs. Richmond have another stand with a "penny-in-the-slot" installation, comprising a prepayment gas meter, a "Model" gas cooker, a pendant light, and two gas brackets, the whole being such as many gas companies will fit up and supply to users on rent. A good feature of these gas ranges is that all the internal fittings can be immediately removed should they from any cause become choked and need cleansing. Another point meriting mention is that the usual burner at the front of the hot plate is divided into two parts, each governed by its own top, so that a separate set of holes is used for either boiling or grilling, they being arranged so as to perform their work in the most effective manner. Several other designs of gas stoves are also on view.

**THE DOMESTIC CRATER COMPANY, LIMITED.**

This company is attempting to fight the smoke demon by means of a simple appliance, the object of which is to consume the smoke and waste products by converting them into radiant heat. This is accomplished by supplying heated air to the centre of combustion. An iron, tunnel-shaped grating is placed in the fire-grate, and a fire of coal or coke built over and around it; the tunnel is thus surrounded with glowing fuel which

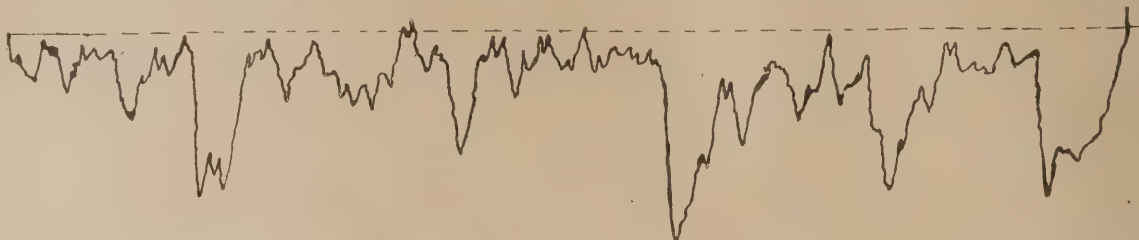


heats the air within it to a very high degree. The constant stream of superheated air which thus flows through the fuel compels perfect combustion. Many of these tunnels are being shown at the stand of The Domestic Crater Co., Ltd., of Bourdon Street, Berkeley Square, London, W., and the extreme cheapness and usefulness of the article, together with the important features, which must not be overlooked, that it can be adapted without the slightest alteration to any existing grate,

andirons, and has a very attractive and natural appearance. The "Salamandre" close stove, with a mica front, automatically regulates the draught, and is shown at the stand in working order. The anthracite coal, which is burnt in a number of the firm's stoves, gives off no smoke when burning. The firm claims that it has great heating powers and requires less attention than ordinary coal. The "Cheminée" stove, which is here illustrated, has a heating capacity of 4,500 cubic

## ROAD-MAKING MATERIALS AND PLANT.

This section of the Exhibition has been organised by our contemporary "The Surveyor." One of its divisions is a loan exhibit. A sectional drawing of a Roman roadway has been lent by Mr. W. Banks, of Rochester. This road was constructed across marshy



A VIAGRAPH RECORD OF PART OF THE VICTORIA EMBANKMENT BETWEEN TEMPLE STATION AND TEMPLE GARDENS. UNEVENNESS 152FT. TO MILE. (HALF SIZE.) EXHIBITED BY J. BROWN.

should make it popular. For use with kitcheners special fire-brick appliances are made, supplied with single, double, or triple tunnels, according to the size of the fire.

### THE BELCHER SMOKE PREVENTER COMPANY.

This company, of Ethelburga House, 70 and 71, Bishopsgate Street, London, E.C., exhibit the "Belcher" apparatus, which is applicable only to steam boilers, and which has for its object the prevention of smoke by raising the combustion of the fuel to the highest degree, and at the same time affording increased efficiency in generating and maintaining steam. The apparatus consists of an air pipe fitted with regulating discs, and with various valves and tubes fixed on the outside of the boiler, by means of which a forced draught of air and steam is introduced into the furnace. By means of a "spreader" in the inside of the furnace the draught is concentrated upon the fuel.

### THE LONDON WARMING AND VENTILATING COMPANY, LIMITED.

At the stand of the London Warming and Ventilating Company, Limited, will be found a number of stoves specially adapted for

feet, and will burn continuously with anthracite coal for twenty-four hours at a cost of 3d. The stove is provided with a regulating plate, which works automatically, thus ensuring the exact amount of draught required for the proper working of the stove, and at the same time acting as a ventilator.

### THE INCANDESCENT FIRE MANTEL AND STOVE CO., LTD.

As a means of burning coke or anthracite coal in an ordinary grate, the above company, of 53, Victoria Street, Westminster, S.W., show their method of insuring the requisite supply of air necessary to the proper combustion of non-bituminous fuel, the "mantel" consisting of a wire grille to the lower portion of which a series of fireclay tubes is attached.

### S. CLARK AND CO.

A display is made at the stand of this firm—address, Park Street, Islington, London, N.—of gas and oil heating stoves of various forms and sizes and for all purposes. They are all constructed upon the "syphon," or condensing principle, all the products of combustion not condensed being again passed through a hot chamber, wherein perfect combustion then takes place, making these stoves safe for use anywhere. Special mention may be made of the "Syphonette" series of stoves, which are constructed so as to radiate a downward heat, throwing the warmth generated therein upon the floor of the apartment.

### PERRY'S CERTAINTY SMOKE CURING COWL CO.

Although having only a very indirect bearing upon the subject, the exhibit of this firm, whose address is at 178, London Wall, E.C., is found in the smoke-abatement section. Their cowl can be fixed to any ordinary chimney, and having a series of pockets arranged round the sides, air currents are caught in whatever direction the wind may be travelling, thus, it is claimed, always creating an up draught in the flue, whilst a conical hood prevents any down, even though a gale be blowing.

St. Jude's Vicarage, Wolverhampton, has just been erected in Tettenthal Road, at a cost of £2,200. The building is of red brick, with stone dressings and tiled roofs. The contractor was Mr. James Herbert, and the architects were Messrs. John Weller and Sons.

**The Sett-making Trade.**—A conference took place on the 19th inst. between the Scottish Quartermasters' Association and the Aberdeenshire Branches of the Settmakers' Union, when the employers conceded the following increases on the prices on the various sizes of setts:— $3\frac{1}{2}$  by 7 setts from 8s. to 9s. per ton; 3 by 6, from 10s. to 10s. 6d. per ton; 3 by 5, from 8s. to 8s. 6d. per ton; 4 by 7, from 6s. 6d. to 7s. per ton. It was also agreed that the rate per hour for day work be increased from  $7\frac{1}{2}$ d. to 8d. per hour.

ground, and its foundations are very deep. A photograph of a portion of Roman road-paving has also been lent by the same gentleman. Mr. J. W. Bradley, of Wolverhampton, has lent several maps and portraits. An old engraving of the first iron bridge ever erected is among his collection. It was designed by Pritchard, of Shrewsbury, in 1777, and Keynolds and Darby, of Coalbrookdale, were the builders. A photograph of John London Macadam is being shown, which was specially taken for the "Surveyor" Exhibition from a bust in the possession of the Museum Committee of the Bristol Corporation. The Worcester Victoria Institute Committee contribute a fragment of Roman concrete and a photograph of Roman tessellated pavement.

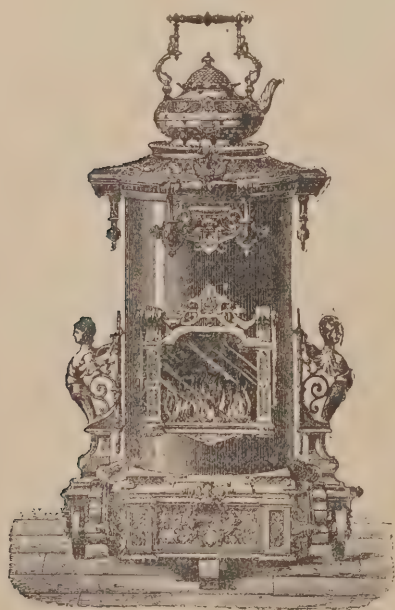
Mr. C. Mayne, municipal engineer of Shanghai, lends the exhibition a sample of road metal, "Diorite Porphyrite," from the Shanghai Municipal Council's Quarry at Ping-Chiao, 150 miles south-west of Shanghai. In spite of difficulties in obtaining dynamite for blasting, the output of the quarry for the last year was 16,781 tons. At the quarry a ten-ton traction engine and a Blake stone-crusher are in use, and rain gauges, thermometers, &c., have been fitted up. The stone, broken to a  $\frac{3}{4}$ in. gauge at the Council's depôts in Shanghai—allowing for interest and depreciation, quarry, freight, &c.—costs 4s. per ton.

Another interesting exhibit, also lent by Mr. Mayne, is a Chinese wheelbarrow, constructed of oak, at a cost of about 16s. The wheel is 3ft. in diameter, and has an iron tyre  $1\frac{1}{2}$ in. wide by  $\frac{1}{2}$ in. thick. Sometimes in the streets of the foreign settlements at Shanghai about fifty wheelbarrows may be seen travelling one behind the other, each carrying two barrels of English Portland cement and pushed by one man. Very frequently, however, a load is carried on one side of the barrow only, so that the edge of the  $1\frac{1}{2}$ in. tyre cuts into the macadam road like a knife, to the great damage of the municipal roads. It has been found, after repeated experiments, that granite broken to pass through a  $\frac{3}{4}$ in. ring, and rolled in the usual manner, is the only kind of macadam roadway that will stand this severe traffic. During 1898 the extraordinary number of 52,546 of these wheelbarrows were licensed by the municipality.

We will now deal with the exhibits of some of the various firms interested in road-making materials and plant.

### J. BROWN.

At this stand the principal exhibit is Brown's patent Viagraph, a new instrument for testing road surfaces. The appliance is, in principle, a straight-edge applied continuously to the road surface along which it may be drawn, and conveying an apparatus for recording on paper a profile of the road surface, and indicating a numerical index of the unevenness of the surface. These taken together give a fair estimate of the quality of the road at the part tested. The specimen



THE CHEMINÉE STOVE. EXHIBITED BY THE LONDON WARMING AND VENTILATING CO. LTD.

burning anthracite coal. Particular attention ought to be paid to Ye Olde Yule Log Gas Fire. This is fitted into a Louis XV. mahogany mantelpiece, brass dogs and bright steel



section here reproduced is from a test recently applied to a portion of the Thames Embankment—about as bad a road as could be found anywhere. The records of the instrument are likely to be valuable to surveyors wishing to test various methods of road maintenance, or to convince local authorities of the need of improvement. Particulars concerning this ingenious appliance can be obtained from Mr. E. Shrapnell Smith, 98, Duke Street, Liverpool.

THE HARD YORK PATENT STONE COMPANY.

The Hard York Patent Stone Company's "Non-slip" stone is used for footway paving, steps, landings (moulded or plain), window and door-heads, window cills, building blocks for docks, harbours, &c., and plain and decorated panels. It is made from the "Silex" stone, which we noticed last week, and is non-slippery. It is made at a great hydraulic pressure, and has a foothold and colour equal to the best hard York stone, and the texture of natural stone is copied with great exactness. Its durability is undoubted, and the quantities used by vestries and in government works go far to show its worth. The address of the Hard York Patent Stone Company is Lightcliffe, Halifax.

W. DUFFY.

No one interested in street paving should fail to examine the system of dowelled wood pavement which is the patent of Mr. W. Duffy, of Gainsborough Road, Victoria Park, N.E. The method employed is to secure the hard wood blocks together by means of dowels or bonding keys of a special type. Thus fastened together, the blocks mutually support each other, so that the weight of the traffic is distributed over a considerable area, and the danger of a block here or there tilting or becoming loose, is almost entirely avoided. This distribution of the load also tends to preserve the blocks from destruction by the concussion and stresses to which they are subjected.

ALBION CLAY CO. LIMITED.

A notable exhibit in the road drainage section is that of the Albion Clay Co. Limited, of Burton-on-Trent. The Company are showing a representative selection of their specialities, most of which are very well known. Among these may be mentioned Syke's Patent Street Gully, which has several distinct advantages as compared with most other gullies. It is so constructed that the water descends and rises again over a diaphragm before it escapes, so that all road detritus is prevented from entering the sewer. It has an exceptionally deep seal and is very easily reached for cleansing. Electric conduits made with any number of ways and electric lamp boxes of a specially convenient kind are among other exhibits we noticed at this stand.

THE ROAD-BREAKING CO., LIMITED.

The Road-Breaking Co., Limited, of Broadway Chambers, Westminster, London, S.W., are exhibiting their special scarifier. This machine is quite separate from the roller operating it, and is attached to it by a suitable coupling, immediately behind and in the centre of it, ensuring uniformity of action and reducing to a minimum the jars and strains inseparable from this class of work. The machine works backwards and forwards with equal facility, no turning of the roller being necessitated even in the narrowest of roads. Another of the Road-Breaking Company's scarifiers, Hosack's Patent, has been designed to meet the requirements of engineers and surveyors who prefer the road scarifier to form part of the engine. Its action may be best explained by stating that by turning either of the hand wheels the worm is caused to revolve in the worm quadrant, and thus the tools are easily adjusted to the required depth for the work in either direction.

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## FURTHER SUPPLEMENTS

Will be given in the June and July issues, it being impossible to publish in one number the large number of drawings placed at the disposal of the Editors.

These illustrations are given in addition to the ordinary contents of “The Architectural Review,” which will consist of a beautifully illustrated article on COPTIC TEXTILES, the examples being chosen from the South Kensington Museum, written by May Morris; TOLEDO—a Descriptive and Archæological Sketch by Joseph Louis Powell, with many Illustrations procured on the spot; Part Two of Mr. G. L. Morris’s Interesting Contribution to the Church and Village Series—IN NORTH DEVON; and the concluding number of ARTS IN ANCIENT EGYPT by the Rev. W. J. Loftie, B.A., F.S.A.

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MAY 10, 1899.

No. CCXXII.

## An Architectural Causerie.

### "Making the Ugly."

THIS phrase will have vogue for a time; it seems to express a truth and it

answers well to current opinions as to the state of the arts at this moment. As Lord Salisbury intended it, we must understand that Art is losing always more and more of the sanction of antiquity and is therefore despaired of by Academicians and by all who have acquired their ideas from the jargon which is called art criticism. To give up the forms of beauty which were invented and were appropriate three hundred years ago, or three thousand, is like giving up an old creed; and, by all who still accept it, those who cannot are regarded as mere atheists, however sincere they may be in seeking for new light and a purer faith. The innovators in matters of art just now, having the example of a great victory before them, won by the "atheists" of the third century, may be excused if they do not adopt the despondency of Lord Salisbury, and if they even venture to see in the ugliness of some modern art a hopeful sign of new life and of beauty, to be one day developed. The embryo is rarely beautiful, but, if it contains the germ of a healthy organism, its natural forces moulding all assimilable matter that comes within their reach, will create a form which will have its own appropriate type and be recognised as beautiful or ugly, according as the force has acted freely on plastic matter, or with difficulty on more obdurate material. For ugliness is generally the result of force acting under impediments, as when a sculptor has no clear idea or purpose and he strikes ignorantly, or a builder is baffled by the incompatibility of the materials he is compelled to use. Ignorant force is always unavailing, and material which is master and not servant gets itself into meaningless and ugly forms. Ugliness, therefore, may be supposed to come from the lack of clear purpose and the want of underlying system. It is less likely to be found in the work of men who are steadily applying natural laws in their design than in that of another school which aims no higher than the adaptation of forms which have been good in their proper time and place. The ugliness of much modern work is of this last—barbaric kind; it is not, however, that referred to by Lord Salisbury. What he had in mind was rather the ugliness of the ironclad and the fort—if these essentially modern things may be called ugly:—the ugliness—equally questionable—of rudimentary design, unable as yet to attain its ideal.

The two kinds are essentially different and, according as we prefer one or the other—for our choice just now seems to lie only between kinds of ugliness—our art will either sink deeper and grow feebler or, it will clear itself from the tangle and obstruction with which the decayed and now useless art of former time has clogged it. It is worth while, then, to think a little about this second

when the authority of tradition was still great, a factory engine would have been set up with a framework of Doric columns, cast in iron, and cranks were shaped like legs with joints. Nobody had yet thought of finding the proper mechanical equivalents for stone pillars and human legs when the material became cast iron. Was machinery more beautiful in those days? We have



A COMPETITIVE DESIGN FOR ST. ANDREW'S CHURCH, AYR. JAMES A. MORRIS, ARCHITECT.

kind of ugliness, that which the artists who dined with Lord Salisbury are so nobly "struggling against." Let us see on what it depends—what it really is. In the first place it is the result of a daring disregard of consecrated forms. The connoisseur who looked always for his "brown tree," would have found ugliness plentiful to-day, and he also who abides by "five orders" and certain "periods" would never give his approval to buildings which are designed according to no laws but those of Nature. Fifty years ago,

come to think that when each part has its appropriate form studied firstly from the mechanical conditions, the machine is more shapely as it is certainly more rational. So designed it is, in the strictest sense natural, and pleases mind and eye, just as in a higher degree does some fine animal. Machinery is the black beast of every railer at modern ugliness. Well, it does not, nor ever will belong to the higher orders of beautiful things because of its limitations. It is an organism of low type. Let us go a step



higher. Is not a modern railway station in all respects better than those first ones which depended for ornamental character on certain "fixings" borrowed from the details of Greek or Gothic architecture? We may say of some of the smaller stations built recently that they are among the best and most hopeful beginnings of good architecture we know. The same causes have produced them which led to the reform of the machinery, only, the constituent material of the buildings being diverse, more variety was attainable by them in form and colour, and more scope was offered to the inventive faculty. These instances show us that the second and most valuable character of unconventional design is that it is governed strictly by natural laws. In this lies its strength and our hopefulness. We are glad, then, when Lord Salisbury tells us that the tendency of every change that is going on is towards this ugliness of the ironclad. We do not agree with him, however, when he says that "the whole current of modern thought is opposed to the beauty which appealed to the cultivators of art in earlier years." On the contrary we find that the two are strictly allied. In appealing to nature our designers must find themselves in sympathy with all the best work of antiquity. How far our laureated and fashionable art is removed from that of the great periods is abundantly shown by the applause which greeted Lord Salisbury's question—"What is constitutional government from the point of view of art?" What indeed is constitutional government and freedom to well-dressed people who think only of privilege? To the citizens of Siena in the thirteenth century it was something worth having—very precious indeed, and their artists knew how to express that. The noble picture by Lorenzetti in the Sala della Pace would be classed by the diners on Saturday as a very mediocre affair and "ugly," but in it was the possibility of the future greatness of Italian art. The other kind of art, that which doffs its cap to foolish patrons and does not dare to be true, to be ugly even, if that imperfection be the price to be paid for sincerity, is a declining art. Between the two the world has to choose if it would rather have life made beautiful than have many thousand academic pictures, and it behoves all true artists to see that the judges with whom the decision rests understand clearly the issue. It is, fundamentally, between freedom and authority. To authority the world naturally turns for guidance; it would save itself all trouble of thought, all responsibility of choice, and so it becomes the dupe of one imposter after another. In matters of art it is the tyranny of worn-out forms which checks spontaneity and creates artificiality. Let us never cease protesting. When we are asked if some new mode is "correct," let us say boldly yes, or explain that nothing is correct in art but what is based on natural laws, and that loyalty to those laws must always precede the consideration of beauty. But is not beauty the aim of art? Yes; surely, only it must be the beauty which grows naturally out of the work, as the beauty of a flower is the final expression of its purpose, not its original motive. While the artist sets himself thus resolutely to work; the perfect form, the ultimate expression of the thought which moulds or binds together brute matter to make of it a new organic body, may still be wanting, but he need not despair. If he does not arrive there are others coming after who will carry forward his work, and the final perfection will witness to a common feeling of reverence for law, for Nature and sincerity. It is thus that National Art is made. In its earlier stages it may be rude, ungainly; but, inspired by the right instinct, it will be the solid basis on which every ornament of grace and fancy may be set.

G. Y. W.

### Colonial Architecture at Earl's Court.

The Greater Britain Exhibition at Earl's Court is well done, and offers several interesting points for observation. Practically the main buildings remain as they were, with new decorations and some minor improvements. Quite new, however, is the charmingly arranged Egyptian street, with its public buildings surmounted by domes and minarets, its shops and cafés ornamented with handsome screens—marvellous specimens of cabinet work wherein minute pieces of hardwood are arranged in weirdly diversified geometrical patterns. Of course, the street has been constructed of timber framework, covered over with fibrous plaster. It affords a capital example of the fine, realistic effects obtainable with this material, which lends itself to all kinds of uses, is easily bent, takes the most elaborate moulded decorations, and looks as well if coloured as if left plain white. Its weathering properties, as proved out of doors here at Earl's Court, are extremely good. The old street of Picturesque England shows another use of this fibrous plaster in connection with timber and tiles. Well worthy of a visit is the Native African Village, with its collection of mud and willow wand huts—so closely allied to the wattle-and-daub primitive architecture of Devon. There are forty huts, circular in form, and with a diameter of 12ft. The natives did their own building. A wind pole is stuck in the ground, and a circular mound is formed at the requisite distance from it. Into this mud "footings" stout, supple willow wands are fixed, bent over, and fastened to the top of the centre pole. Then more willow branches are woven between the uprights, and the close lattice work is finally covered with a thick coating of mud. One section is left clear as a doorway. As a rule, the floor is merely trodden hard; at Earl's Court it is cemented, for sanitary reasons. It is interesting to know that plans and sectional drawings of these huts were submitted to, and solemnly passed by the London County Council. The lake has been considerably enlarged, its capacity has been increased from 1,372,380 gallons to 1,512,720 gallons. It takes over three weeks to fill the lake, which receives draining from surrounding paths and gardens. The lake was formerly entirely cemented, but to prevent leakage, part of the bottom and the sides have been asphalted. Towering above the lake is a light, and not altogether inelegant structure known as a Canadian water chute; a deck of hard wood with maple runners being supported on the series of diminishing trestles. Down this declivity canoe-loads of happy folks are to be shot onto the waters of the lake, the canoes being so constructed that as soon as they strike the water they rise and glide onwards. People and boats are to be hauled up the dizzy heights by cable power. The Empress Theatre has been rearranged; the arena measures 160ft. by 180ft. and will accommodate some 400 Africans and Europeans when they assemble in mimic battle. In the various sections occupied by Colonial Governments many things of value have been gathered. Mining and mining machinery are conspicuous; also precious ores and refined metals. Both Queensland and Victoria send large and valuable collections of timber. It is, perhaps, a pity that the pioneer side of Colonial life is not more strongly brought out. Models, or pictures, of huts and houses in every corner of our Empire would have been instructive. However, as it is the Earl's Court Show has its educational value, helping to familiarise the public with diversified forms of architecture and styles of decoration.

G. C. R.

## A "BUILDERS' JOURNAL" COMPETITION.

### DESIGNS FOR A COUNTRY HOUSE.

IN accordance with our announcements, we have arranged a competition, to be open to all our readers, for designs for a country house.

All intending competitors should read carefully the following details, which have been revised and amplified since the original announcement of the competition.

To avoid any possible misconception as to our object in publishing these revised conditions, it may be well to state that the original particulars were given to us by a relative of the client during the client's absence abroad. It was not until his return to England that we were able to obtain the fuller and more definite particulars which are here given. As a set-off against any possible inconvenience that may have been caused to any reader who may have set to work directly the first statement of conditions appeared, we have doubled the premiums originally offered, so that the premiums are now **Twenty Guineas, Ten Guineas, and Four Guineas.**

As the competition is intended to meet the requirements of an individual correspondent, we append a statement of his wishes and, in making the awards, preference will be given to designs which most nearly comply with the following requirements:—

"I want a house long and low, with a large square entrance hall, to be used as a comfortable sitting-room, a wide staircase, and a gallery going partly round hall, a dining-room and boudoir for a lady, about six bedrooms, and three servants' rooms, with comfortable offices, &c. I want something a little unusual, either dark stained wood and thatch, or old timbers and thatch, and all kinds of angles and windows."

The house is to be built on a level site on the crown of a bank overlooking a large garden which is surrounded by woods. The grounds in which the house is to be built cover an area of 6½ acres, and are situated in the neighbourhood of Hythe. The house will face N.W., but the main entrance is to be at the back, facing S. The drainage runs N.N.E. The house is to be long and narrow; the roof may be thatch or tiles, but not slate; large eaves are desired. In addition to the requirements given above as to the rooms, it is desired that there should be a small study and two bathrooms—one in connection with the best bedroom. No stable is required. The cost of the house should be from £1,500 to £2,000.

Any intending competitor wishing to view the site can obtain the exact address by communicating with the Editor.

Premiums will be awarded for the three best designs, viz.:—

First Premium	...	£21 0 0
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Third Premium	...	4 4 0

The services of a well-known architect will be secured to act as assessor. The three premiated designs will be forwarded to our correspondent, who may commission the carrying out of one of them; but it must be understood that our responsibility in the matter ends with the payment of the premiums.

The designs submitted may include a perspective view, as well as plans and elevations, and must be accompanied by a brief specification (that is to say, a description of the house and the materials proposed to be used). They may be drawn to any convenient scale, but must be inked in and be without colour or wash.

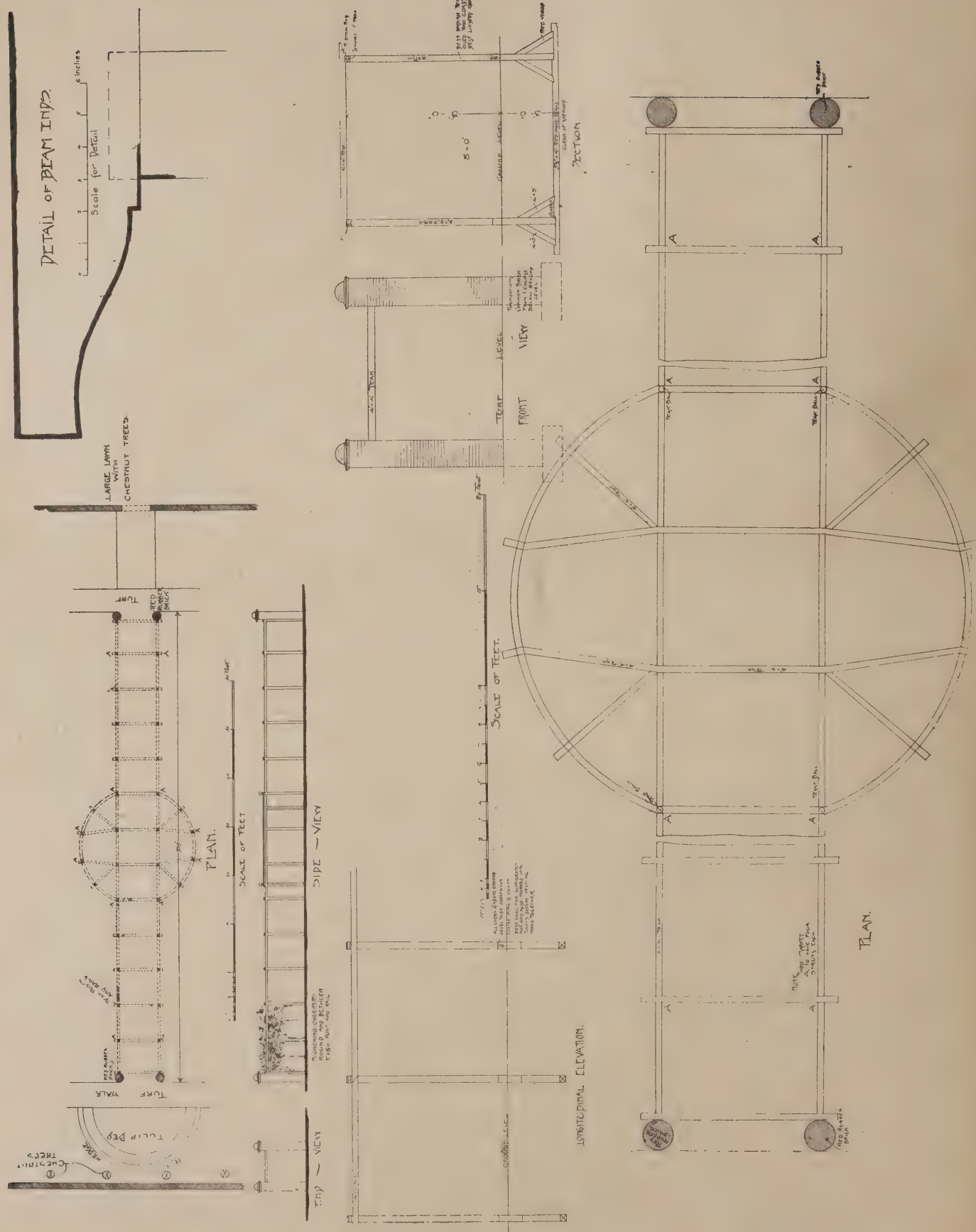
Drawings must be despatched so as to reach the Editor of the BUILDERS' JOURNAL not later than May 24th; they must be submitted under a motto, accompanied by the name and address of the competitor, in a sealed envelope.

The drawings will remain the property of their authors, but we reserve the right to reproduce any we think fit.

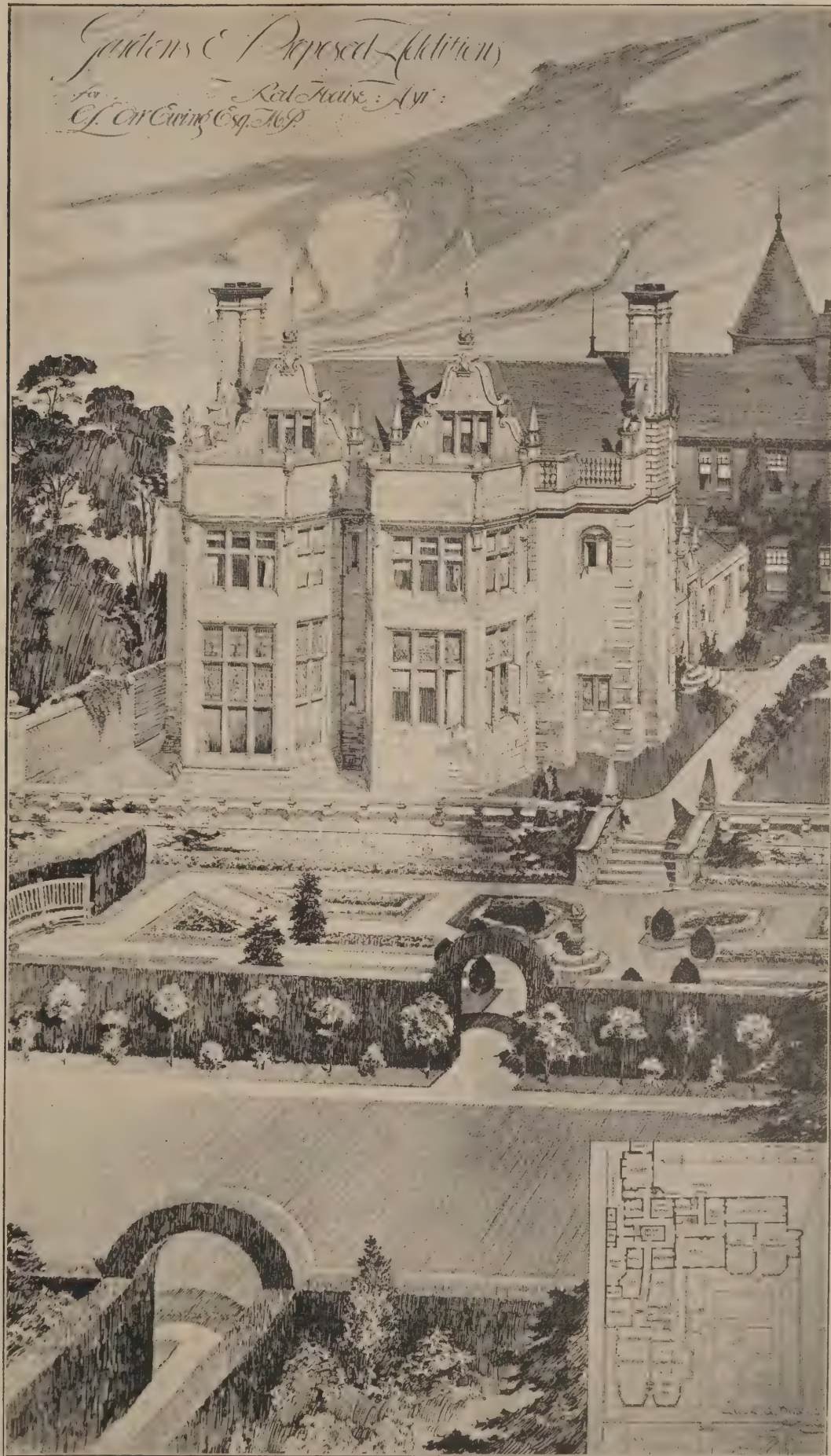












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JAMES A. MORRIS, ARCHITECT. (See p. 201.)



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JAMES A. MORRIS, F.R.I.B.A.

## Men Who Build.

No. 56.

JAMES A. MORRIS, F.R.I.B.A.

**E**MULATING in a manner a prominent characteristic of the subject of our present notice—that of coming to the point, we may at once mention that Mr. James A. Morris is a man whose pronounced personality at once arrests the attention of all who are privileged to come into contact with him. No man, they say, is truly great to his valet, and whether by parity of reasoning, an extended opportunity of seeing Mr. Morris in many phases of his work should in any way militate against an impartial appreciation of that work, we leave the reader to determine.

The illustrations shown here are only such as have readily lent themselves to reproduction, but they may none the less in a manner indicate the versatility of Mr. Morris's practice.

The Spaniards have a proverb, "It is only your friend who can betray you," but any betrayal of the process of Mr. Morris's success would simply divulge the trite secret of *all* success, industry united to patience, tempered by a singleness of purpose and lucidity of ideal.

In a lecture lately given to the Glasgow Architectural Association, of which, by the way, he is honorary president, Mr. Morris, quoting Corot, said: "Truth is the first thing in Art, and the second, and the third." Then he resumed: "If a man knows or cares nothing for this spirit in Art, this ideal, then is the man no true artist, and if he has this spirit, let it be ever so feeble a spark, and does not submit to it, and walk up to it, then is he no true man." This intensity of *morale*, coupled with an indefatigable perseverance, is the whole process, then, of Mr. Morris's success.

Architecture has been not inaptly described as frozen music; thinking in the same conceit, we might translate some of Mr. Morris's work in phrases of the stately pavan, the delicate, dainty minuet, or the brief staccato movement of the coranto. In short, his work, especially his domestic architecture, has a delicate, indescribable charm, in fact, all the quaint quintessence of older numbers. Not the mere transcription of old ideas in the uncouth fitment of modern garb, but rather the deft adaptation of an artistic imagination, and a well stored mind to the absolute utility of modern times.

Patience is genius! there are architects and architects, and the prime factor in the resolution of individuality from the dense current of

commonplaceness is undoubtedly—imagination; but, mere invention will not of itself suffice to bring an artistic harvest to a golden fruition, for, unless the man has industry, the capacity for mastering details, for assimilating the minutiae of his craft, he will never be a great architect, if he even become a successful one. The faculty of rendering details interesting is strongly evinced in Mr. Morris's work, and this may be explained by the fact, that he always tries not only to make them look well, but also to feel pleasant and restful to the touch of the hand; for just as one may close one's eyes when listening to music and hear better thereby, so with mouldings one may feel them rhythmic to the touch as well as to the eye, and learn from two senses rather than from one alone.

If it be possible, that, to the mind of the architectural pedant for a man to be an artist, to have the potent gift of imagination, is to be a criminal, then, we fear Mr. Morris is extremely guilty, and when we consider that it is generally taken for granted that the function of an architect is "to build," and when we know that the different decorative crafts are in a manner left to the freedom of their own will, we must be grateful for every instance that establishes a precedent to the contrary.

Even in these latter days of paramount science when the tendency is to relegate things to the materialistic level of a mathematical equation (as if music were a mere matter of rhythm and ratio, and Architecture an affair of strains and stresses), no one would certainly deprecate an essential regard for the science of construction; but one result of the trend of this mechanical tendency is the introduction of incongruous decoration. The intensity, in fact, of modern competition produces by a natural evolution eccentricity instead of beauty.

An examination of Mr. Morris's work reveals a harmonious unity between building and details, and in his domestic work especially, we find the same scholarly selection, artistic taste, and acute discrimination, from the quaint "tiring pin" on the front door to the naïve set of the chimney pots, while in his larger work, simple forms and strong dominant lines and masses are its prevailing characteristics.

Mr. Morris practised for many years in London, and while there acquired or developed much of that spirit of originality, that recusance of the mere convention, which has since distinguished the work of some of our "newer" men. This element of "newness" Mr. Morris has deftly wrought into the texture of his own invention, and he has given us a local taste graced with the robustness of a large community. Though his work in Scotland was at one time distinguished by the scoff of the uncultured general, and the praise of the enlightened few, it is much to be able to say that his earlier work which, from its

striking originality, was almost certain to meet with such a fate, has now redeemed its welcome, has justified its existence, and to an extent is now a standard by which contemporaries measure the limit of their courage. In short the "fools who came to scoff" have now remained to admire, and where formerly local architecture could only be described as commonplace, uninteresting and tersely bald, we now find the trend has been along the lines initiated by Mr. Morris many years ago.

It is hardly necessary to distinguish between mere artistic facility and the science of architecture. We know that many a man who, by lissom fingers and subtle eye, can inscribe for you an exquisite "note," can no more build a house for you than fly; that in fact the art of sketching, or if you will even, inventing, graceful bits does not of itself constitute an architect. Yet we cannot think that any of Mr. Morris's exquisite "bits," quaint corners, and artistic "notes" have ever been gained at the expense of construction, and it is really remarkable how, as in the case of his own residence, every nook and corner has been utilised and beautified.

Of the examples of Mr. Morris's work shown here one which will eventually be not the least interesting is the Pergola, of which parts are illustrated in our inset plate. This Pergola is about 100ft. long, 8ft. wide, and 7ft. high. It is built of teak, oiled, and forms a long alley across the middle of a high walled garden. It is entered from a wide lawn, shaded with chestnut trees, and is placed axially with the arched opening in the ivy-covered wall between these gardens. At either end of the Pergola are tall circular piers of red rubber brick, against which the teak framework of the Pergola abuts. At its further end, and separated from it by the width of a footpath, thereby gaining a space for strong light between, is an apse of yew, against the dark green of which the semicircular bed of tulips or brightly-coloured flowers, seen at the end of the long dim turf-floored vista, gleams like a jewel. Midway in the Pergola's length, and on either side of it are semicircular spaces to be curtained like the long alley on sides and roof, by roses and wistaria, clematis and honeysuckle, climbing plants of many hues, and bright green creepers; so that the side chambers may, by-and-bye, form cool places of retreat, and yield also an unbroken length to the Pergola alley.

According to Lombroso, talent—genius, if you will—is endemic; and, doubtless, success is often dependent more upon circumstance than the mere textual arrangement of the "grey matter." In Glasgow, the new School of Painting has been locally dignified by the title the School of Progress and Poverty, and it might be a question how far success might be impelled by a chronic condition of "hard-upness."

However, all that not merely by the way, but partly to suggest the fact that in a



AYR WORKING MEN'S UNIONIST CLUB. JAMES A. MORRIS, ARCHITECT.



provincial area, such as that in which Mr. Morris' practice has principally rested, method, style, material, local features and details, are, to an extent, tradition. In such an area, the "family" idea of the mediæval craftsman is to an extent unconsciously emulated and the architect is in closer touch with the builder and other craftsmen than is possible in larger towns.

"Touch" might not be the right word. "Sympathy" one should say; be this as it may, it is hardly too much to say that Mr. Morris' dainty creations, full of delicacy, polish, education, precision, largeness and yet simplicity, could never have been done without that essential intimacy between heart and hand: the innate excellence of architecture welded to the no less valuable excellence of good workmanship.

## HOUSING OF THE LABOURING CLASSES.\*

By P. FYFE.

(Continued from page 189, No. cxxi.)

OF the second class a few words are necessary, because they are a recent growth in Glasgow, creatures of sad circumstances, often of their own making, but nevertheless inexpressibly sad. When, through the death of the breadwinner, or his prolonged illness, or failing health, or loss of steady employment, or, as often happens, through the drunken

\* A paper read before the Glasgow Architectural Society.

habits of one of the domestic partners, the scanty furniture melts away into the pawnshop, the family stand on the very verge of poverty. They cannot get a house—they have little or nothing to put into it, and consequently they fall into the hands of the house-farmer, who is the small capitalist of this unfortunate class, and who demands full—very full—profits for his accommodation. A hasty survey in the city recently revealed the existence of 366 separate houses of this class, lodging 1680 of these, the poorest of the poor.

### Victims of the House Farmer.

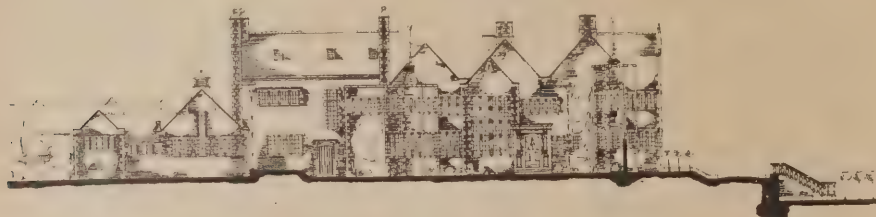
What is going on is as follows: A house-farmer rents a whole building from the owners at rents averaging about 7s. 6d. a month per single apartment, and puts in each compartment a bed, bedding, grate, fender, kettle, pots, a frying-pan, a table, two chairs, cups and saucers, plates, knives and forks, spoons, oil-lamp, a jug, a pail, a basin, a scrubbing-brush, a shovel, and a few other odds and ends. Several inventories have been taken of such furnishings, and a liberal estimate of their total value would be 40s. per set. These furnished apartments are let to the sub-tenants at 5s. per week on the average, paid in advance. Now, I am going to assume that the farmer requires to refurnish each such house every six months, which would cost him 80s. per annum; this added to his average yearly rent for it would bring his yearly expenditure up to 170s. per room. For this he draws at the rate of 260s. per annum, which returns him 53 per cent. on his outlay. If this be not usury, levied on the poorest and most unfortunate of our free population, I don't know what it could be called. Of course, it is admittedly a risky business, requiring constant personal oversight to prevent destruction and moonlight fittings in many cases, yet, withal, it involves these people in a mesh out of which, once caught, they can hardly hope ever to escape, and completely bars the way to their possessing again, without benevolent help, the means to furnish a home of their own. We now come to

### The Main Question.

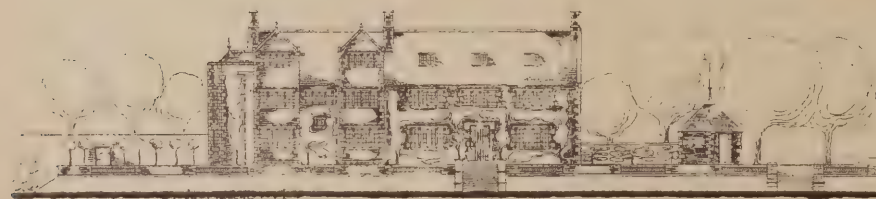
viz., can sanitary dwellings for the labouring classes be erected and rented to them at a tenth part or thereby of their total earnings without involving the undertakers in financial loss? To answer this question we must not theorise, but take such experiences as are afforded us from well-known blocks of such houses existing in the city. I have accordingly selected nine blocks of tenements belonging to three classes of owners, viz., three belonging to the Corporation, three belonging to the Glasgow Workmen's Dwellings Company, and three belonging to private proprietors. These it will be convenient to number 1, 2, and 3 for the first; 4, 5, 6, for the second; and 7, 8, and 9 for the third. In order to solve the problem and keep in constant touch with the labourer's wage I have reduced everything to the level of a weekly rent, and, further, for purposes of strict scientific comparison, I have abandoned the varying unit of the house, and have taken in every case the unit of 1000 cubic feet free air-space in each house, which, as you know, is the legal minimum allowed for all houses to be built after 1892. A house for the labouring and poor classes may mean anything from 1000 to 2000 cubic feet of space, and as air-space to dwell in is the all-important thing for the labourer and his family, it is on this basis my inquiry rests. It will become obvious as we proceed that what are the facts about 1000 cubic feet of house-room are the identical facts about the whole house, about every house in the various blocks, and also about the whole block of houses dealt with. It becomes in each case simply a matter of multiplication by the number of available cubic feet in any part or in the whole, and by the number of weeks in a year to arrive at the exact sum paid or due under each heading.

### Conditions to Avoid Loss.

It will be plain to all that to buy or build house property, and rent it to tenants so that no immediate loss will result, four main conditions must be met. Provision must be made



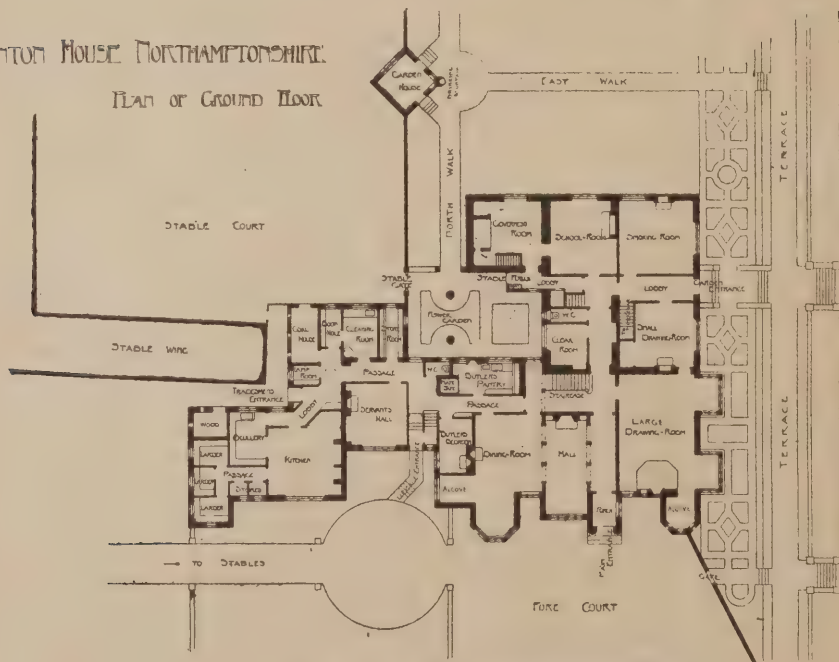
ENTRANCE FRONT.



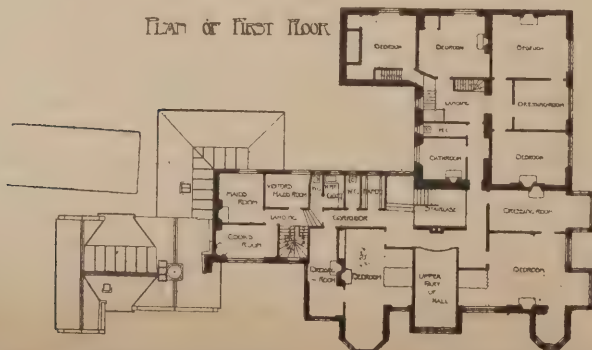
GARDEN FRONT, WITH TERRACE WALL.

HINTON HOUSE NORTHAMPTONSHIRE.

Plan of Ground Floor



Plan of First Floor







PERGOLA IN CARRICK HOUSE GARDENS, Ayr.  
JAMES A. MORRIS, ARCHITECT.

for meeting (1) the ground rent; (2) the interest on cost of building; (3) the outlays for management, owners' taxes, and fire insurance; and (4) for actual repairs on the property. Anything which is left over after discharging these obligations may be used to meet future loss due to property depreciation, which may be called a sinking fund, a redemption fund, a reserve fund, or other suitable name, and what thereafter remains may be justly deemed available as profit or surplus over and above the bare interest a corporation, or society, or individual has to pay the capitalist for borrowed money. It is evident at the threshold of the inquiry that we must fix two things, viz., our standard of ground rent, and our standard of bare interest on building capital. It matters little what standard we adopt, as additions or deductions per 1000 cubic feet per week can easily be made from any given basis; but for purposes of exact comparison these two must be laid down on parallel lines.

#### Ground Rent.

Now first as to ground rent, I have taken each site as costing 30s. per square yard, and the ground burden or rent to be covered by rents chargeable on the tenants at 3 per cent. on the cost of the total site at the above rate. Building rent or the bare interest on the total cost of the building is put at 2½ per cent., because the City Registrar informs me that the Corporation can borrow all it needs at this rate. The cost of the respective buildings themselves represents the exact sums paid for them, and in the case of those mentioned in the tables belonging to private proprietors, the very liberal valuation has been put on them, all being old buildings, of 4d. per cubic foot over all outside measurement. It will probably be of considerable interest to property valuers to know that in developing these calculations I find that in such old properties, containing one and two apartment dwellings, the available cubic space for living purposes comes out at between 52 and 53 per cent. of the total over all cubic measurement. That is to say, for every 1000 cubic feet of free air-space a labourer gets to live in, 1923 cubic feet are absorbed in building from the ground level to the ridge of the roof.

#### Some Comparisons.

With these explanations we can now examine the properties selected and compare results. Let us take first Nos. 1, 2, 3, belonging to the Corporation. No. 1 contains forty-eight houses of one apartment and twelve houses of two apartments, is a four-flatted block on the balcony system, and is built of brick. Here the two apartment tenant pays as rent per week for each 1000 cubic feet, 14½d. (Please recollect that all rents now to be spoken of do not include Police-rates, School Board rates, nor Poor-rates, but do include payment for water and stair gas light). Each one-apartment tenant pays as rent for similar space 14s. 4d. 4pence per week, or nearly 14½d. Splitting these weekly rents up, we find the one apartment weekly rent per 1000 cubic feet charged

with the following, viz.: for ground rent, 2s. 2175d.; for interest on building, 7s. 15d.; for management, owners' taxes, and insurance, 2s. 706d.; and for actual repairs, 1s. 208d., leaving a surplus over 2½ per cent. on buildings of 1s. 225. Similarly the figures for the two apartment rents per 1000 cubic feet per week are respectively 2s. 27d., 7s. 296d., 2s. 752d., and 1s. 236d., leaving as surplus, 1s. 186d. per week. Now these conjoined weekly surpluses per 1000 cubic feet per week, multiplied by the total cubic feet in the two classes of houses, and by fifty-two weeks, amount together to £29 12s. 9d., or nearly ½ per cent. on the building cost, and together with the bare 2½ per cent. interest, to nearly 3½ per cent., or exactly £3 8s. 10d. Therefore, here at the very entry of our inquiry, we have a block of buildings which almost meets what we are looking for, viz.,

#### A Self-Sustaining Labourers' Property,

rented within the labourer's means. It may fairly be said that ½ per cent. is not enough to meet contingencies and depreciation, nor is it, even with a Corporation financing, but, on the other hand, it must be taken into account that the cost of these buildings was £6,738 9s. 4d., or 6d. per cubic foot over all measurement. Here I join hands with the Committee of the London County Council in deprecating such high standards of construction and material. Government and municipal standards are in the main good and desirable, but infinitely more important and useful for the poor labourer are good accommodation and low rents, and, in my opinion, where the former makes the latter impossible, elasticity must be found in construction, as there is none in the poor man's ability to pay. Here is the point where the architectural craftsman comes in—where his special knowledge and skill may be employed with the greatest usefulness to his poorer fellow citizens. The question of the greatest urgency is, cannot a large block of labourers' dwellings of four or five flats be properly erected and completed for less than 6d. per cubic foot measuring over all? I think it can. Mr. Robert Scott, the well-known measurer, has certified that the four stone-built four-story tenements belonging to the Corporation in Osborne Street and King Street were erected and completed in all respects for 4½d. per cubic foot; that four similar tenements fronting King Street and Parnie Street, with basements 7ft. high, were left finished for 4½d. per cubic foot; and that six tenements of the same construction fronting Parnie Street and circling into Osborne Street cost to complete them the same—viz., 4½d.

If this be so, then you will be able to say whether brick-built labourers' dwellings should cost more or less.

#### Cost of Building.

But I am now going to assume that a building identical with No. 1 belonging to the Corporation can be finished in every respect and left ready for occupancy for the same sum—viz., 4½d. per cubic foot, and ascertain, in that event, what the new surplus over 2½ per cent. will be. At 4½d. the cost of this building would be £5,053 17s. 1d., in place of £6,738 9s. 4d., which it actually cost, and the interest at 2½ per cent. £138 19s. 7d., instead of £185 16s. 3d. This would allow of a surplus of £75 19s. 5d., or £46 6s. 8d. more than the actual surplus, or £1 6s. 1d. per cent. for reserve, instead of 8s. 10d. per cent. now available. This one example, therefore, proves that with ground at 30s. per square yard charged with 3 per cent. interest, and a four-story block built thereon at the rate of 4½d. per cubic foot, the poorest labourer may have a sanitary and comfortable house on the balcony system for 14½d. per 1000 cubic feet per week, and yield £4 1s. 1d. per cent. of interest on the cost of the building. Should the labourer require that the size of his dwelling be 2000 cubic feet, he would have to pay 2s. 5½d. weekly for it, or fully 9½ per cent. on the average wage of £1 6s. 5½d., and 12 per cent. on the lower average wage of £1 0s. 6½d. Such a house would legally accommodate three adults and four children under ten years. I look upon this No. 1 property as the best in this city for the labouring man, and think it reflects on our Corporation the very highest credit. I have gone so minutely into the figures here that it will be, I imagine, unnecessary to cover the same extent of ground with each of the others. I shall therefore deal with them more generally.

#### Other Block Dwellings.

No. 2 consists of a block of thirty-six single-apartment houses in the very centre of the city. The weekly rent for the 1000 cubic feet here is more than in No. 1, being 18s. 14pence. The increase is due to two causes, viz., ground rent, and surplus over 2½ per cent. on building. The total interest yielded here is 4½ per cent., but the rents are more than the 10 per cent. of earnings desiderated, as each house contains 1832 cubic feet, and hence demands a weekly payment of 2s. 9½d. Block No. 3 is a small property in the Calton district containing fifteen houses of each class on the balcony system. Here the two-roomed tenant pays



INGLE NOOK: BILLIARD ROOM, RED HOUSE, Ayr. JAMES A. MORRIS, ARCHITECT.



18-520d. per 1000 feet per week, or 3½d. more than the tenant in No. 1 block, and without countervailing advantage so far as I can see; while his one-apartment neighbour pays 2½d. less, or 16-339d. The tenants pay more than those in Block No. 1 on every item, excepting for interest on building, and the surpluses over 2½ per cent. are 3-127d. and 2-769d. per 1000 cubic feet per week respectively, thus leaving the total interest on building cost at £4 1s. 5d.

#### An Interesting Experiment.

We now come to a consideration of the blocks of the Glasgow Workmen's Dwellings Company. Here we have two blocks of five-storey buildings with a fine concreted court between them 62ft. in width. The walls are of brick, built hollow and rough cast with cement outside. The two blocks contain eight single-roomed houses and forty-eight two-roomed houses. There is also one three-apartment house occupied free of rent by a resident caretaker, who is a joiner working on the property, and a suite of rooms or recreation hall rented from the Company by the Toynbee Association. There is a difficulty in dealing with these blocks in a comparative way because of these exceptional extras, but in the following figures I have eliminated from the calculations any rentals derivable from the caretaker's house and from the recreation halls, and have tried to ascertain how far the tenants of the fifty-six dwelling-houses could pay for everything, and, if so, what extra surplus would be left over to be added to the £110 per annum the Company receive for the halls from the Toynbee Association. Under this method we find that the forty-eight two-apartment tenants who pay 18-605 pence per 1000ft. per week, and the eight single-apartment tenants, who pay 17-068 pence, can clear off all charges, and leave per 1000 cubic feet per week '688 pence and '607 pence respectively. Multiplying these figures by the total cubic feet in each class, and by fifty-two weeks, leaves a surplus over 2½ per cent. of £14 8s. Had the recreation halls been built as extra one-apartment houses, the rental would have been exactly the £110 which the Toynbee Association are paying for them, so that it is quite fair that this £110 should be added to the £14 8s. to arrive at the true surplus profit. This, then, yields the company a surplus over the 2½ per cent. of £124 8s., which is equal to an additional £1 17s. 4d. per cent., or £4 12s. 4d. per cent. as total interest on the cost of the buildings. But this, favourable as it is, fails to give a correct comparative figure, as we should take into account a special system of renting inaugurated by this company—viz., that of allowing all good, steady, permanent tenants a biannual deduction of two week's rent at Glasgow Fair and at the New Year holidays. Assuming that all the tenants received this bonus, the total surplus would be £154 9s. 6d., instead of £124 8s., or £5 1s. 4d. per cent. of a total interest on cost of buildings in place of £4 12s. 4d.

#### Conclusion.

From our study of these new properties I think I am now justified in saying that in Glasgow the Corporation can erect new dwellings on 30s. ground for the poorest, and rent them on a ten per cent. average earnings basis, not only without loss, but with a small profit, as by employing a jobbing caretaker, and keeping the property in good repair, 1 per cent. is sufficient for the sinking fund. It seems clear that, except in a few new buildings, the rent-paying capacity of the poor is not so much considered as the question—What are the rents for similar houses in the neighbourhood? The law of supply and demand in old properties has free play, but this is not fair play to the poor, because neither builders nor property owners are building houses of this small class, and consequently the demand is o'er-topping the supply. The result of this is only too evident in the very high rents charged. If a study of these figures and suggestions will eventually lead to the building of sanitary dwellings for the poor by the Corporation, or by such Associations as the Glasgow Workmen's Dwellings Company, my labour will have met with a full reward.

## DELLA ROBBIÀ POTTERY.

IN our issue for April 12th we reported two papers on "The Application of Colour to Interior Ornament in Relief," read before the Royal Institute of British Architects on April 10th. In the discussion which followed Mr. Harold Rathbone, of the Della Robbia Pottery (Birkenhead), made some remarks which will probably be read with interest.

Mr. Rathbone said there was nothing more objectionable than the large masses of glazed coloured tilings, with a perfectly flat surface, though it seemed necessary now to get some material which would defy the dirt and smoke and retain its colour-quality and brilliance. The machine-made tilings of the chief manufacturers of the day were intolerable; and in order to make others with an interesting surface and broken colour, the promise of support from the architects was an absolute essential. Permanency in material was also a necessity. It amounted to an insult (or at all events a vulgarity) to put a noble and historic design into a material such as coloured plaster, which was absolutely certain to suffer from the effects of time, although the surface of this material, so long as it lasted, and the variety and softness of colour which could be obtained, made it among the most attractive of all decorative settings for more temporary purposes.

Very fine effects might be secured by the utilisation of simple material in combination with richer material—such, for instance, as large surfaces of Candy's glazed ivory bricks which were made in Devonshire, Van Stratten's green tiles, other tiles which were being made by Conrad Dressler at Medmenham modelled on those used at the Alhambra, bands of plain colour, such as De Morgan's peacock-green tiles now supply, with accents and settings carried out in low relief work, or, if circumstances demand it, modelled in high and rich relief, with coloured grounds rendered in a permanent medium, after the manner of the works of the Della Robbia family made in the fifteenth century, on whose model his firm were endeavouring to work their factory at Birkenhead. All these methods were much more suited to this climate than marble, which so soon gets discoloured. Such glazed work, used in discreet conjunction with brick, produced in architecture the same delightful sensation which was felt in a lesser degree from the shine and shimmer of porcelain and glass on a material of a different nature, such as the every-day white table-cloth.

This difference in texture, and the variety of charming architectural effects of colour and quality, could be obtained by adapting materials of even the same colouring but different textures, such as enamelled terracotta used in conjunction with ordinary red brick. Very beautiful permanent effects could also be produced by the use of mosaic, such as Rust's, amid a green or white tiling introduced as panels in a wall, with accents of rich modelled and glazed ware, telling as jewels of colour within these limits.

Adopting this attitude, with the condition that the decorative settings of glazed ware thus introduced yielded the right perspective of architectural, or one might even term it orchestral, effect required for the building in question, depending mainly on the creamy or light silhouetted outlines and masses against the simple coloured grounds; or, on the other hand, adopting the method of clearly mosaiced or patterned colour, there was little limit to the discriminative uses which the Della Robbian treatment, with colouring sympathetically adapted to our less sunny climate, could serve. The designs of leading sculptors working hand in hand with the architects, or simply the architects' own designs or suggestions, could be carefully and wisely interpreted to suit the potter's art, so as to insure the effect demanded by the architectural conditions. As an instance of this he might be pardoned for citing Mr. Colcutt's construction for the fountain in the courtyard of the Savoy Hotel, for which his pottery had supplied the ornamental treatment and

colouring in glazed material, with a use of mosaic in the basin. Nothing more telling could be used in this temperate sense for wall fountains in the street or restaurant, reredoses, friezes, dado bands of colour, mantelpieces, memorial tablets, tympani for internal or external purposes, &c.; and it had been his pleasure to carry out work on these lines and for each of the objects enumerated.

This was an art which positively had not yet been seriously begun in this country, though the effects to be obtained were rich and delightful, and sufficiently economical in comparison with other methods. The work of the Della Robbias was as fresh to-day as it was when it emerged from the oven 400 years ago; but out of many specimens of coloured plaster he (the speaker) had seen, the colour had sunk in and deteriorated sadly within the last ten years. If glazed ware were made use of in a constructive manner, it ought to be of the simplest nature, and in the main undecorated. The examples of modelled ware taken from moulds and dipped into coloured glaze led to the insinuation among them of a machine-made art which must needs be highly distasteful to their artistic sense for its treacherous quality over monotonous flat surface, but if the simple material made large use of had an interesting and broken surface leading to a pleasant play of light, the effects of Venetian-like colour which could be got by judiciously introduced settings were infinite and delightful.

## Enquiries Answered.

*The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.*

### THE COMPETITION FOR A COUNTRY HOUSE.

To the Editor of THE BUILDERS' JOURNAL.

BRADFORD.

DEAR SIR,—If I am in order in asking questions about the above, I should be pleased if you will answer the following, viz.:

1. Will filling in the walls solid with Indian ink be considered as a wash, or should they be left open?
2. Is it in compliance with the rules to send in a perspective done in sepia ink?
3. Should the drawings be mounted on stretchers or boards or not?

W. B.

The walls may be filled in solid, but all the drawings, including the perspectives, must be in line, without any wash or colour. The object of this regulation is that the drawings sent in may be in a form suitable for direct reproduction in our pages. Each competitor may suit his own convenience with regard to the mounting of the drawings.

### RIGHTS OF WATER COMPANIES.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Am I unduly troubling you in asking your opinion of the following? The Waterworks Company in my town, in giving a direct supply (without meter) insist upon their own fittings being put in, some of which are hopelessly out of date. If you want fittings of an improved type, you must take your water through a low-pressure meter, into a supply cistern with ball valve—in my eyes, an unwholesome abomination. They can, and have, fixed high-pressure meters with direct supply to some premises, but such privilege apparently goes by favour. Can anybody legally demand a direct supply by high-pressure meter?—Yours, &c., G. W.

The answer to this query depends upon the statute under which the Waterworks Company is constituted, and the bye-laws, if any, made thereunder. If you will give information on these points a satisfactory answer can no doubt be given.



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WHITECHAPEL PICTURE GALLERY. C. HARRISON TOWNSEND, ARCHITECT.





THE LADY CHAPEL, HOLY TRINITY CHURCH, CHELSEA: SCHEME OF DECORATION. BY H. WILSON, C. WHALL, AND LOUIS DAVIS.



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THE  
ARCHITECTURAL ASSOCIATION.

## SPECIFICATIONS.

(Continued from page 191, No. cxxvi.)

HERE is another way to shorten a specification. Take, for example, the windows to a building, one or two of which are dissimilar from the rest. I would first describe those, and then refer to all the others on all floors, in all positions, in the one item, and not describe them to each floor separately. Take, again, the external facings to brickwork. Describe any special facing first, and then the whole of the other facings to all parts of the one item without reference to special position. There are many other items which may be treated in this manner. One more suggestion. The wording itself of a specification may be much curtailed by care and practice. You will never be able to write concisely and to the point until you have written many specifications.

Do not labour the wording needlessly nor repeat yourself unnecessarily. In time the requisite language will come simply and quickly.

I want it to be understood that my remarks chiefly apply to the correct form and wording of a specification of which quantities do not form a part of the contract, or perhaps have not even been supplied.

## Tabulation.

Another important point in a specification is that it should be readily understood and clear. To avoid confusion, tabulate as much as possible the various parts of a complete item of work by placing each separate particular under the preceding one. It will take more paper, but then that is always a good fault, for it will make the description clear at a glance. The form of tabulation I would suggest is as follows, which illustrates the description of a roof formed with trusses.

The roof to be formed of, say, six whole trusses and two half trusses, each to be placed 10ft. apart, and composed of the following cantlings, and the whole notched, framed, spiked, and strapped together:—

Tie beams 12in. by 6in., resting on 2ft. 6in. joists 12in. by 3in. tooled York templates.

King posts out of 6in. by 5in.

Principal rafters... 6in. by 4in.

Struts ... 4½in. by 4in.

and so on. Here it will be noticed that each separate component part of the roof is placed immediately under the preceding one until all the items have been described. Thus, at a moment, the sizes and particulars of any one special part of the roof may be seen.

This form of tabulation will be found much clearer than the method which is so often adopted of running on the particulars of the various items line after line without a break. In the same way may be tabulated the descriptions of floors, windows, doors, and many other distinct items severally composed of many parts.

As another aid to the clearness of a specification, divide the descriptions into many clauses, and do not make the clauses too long, nor omit an occasional full stop. Also keep the clauses well apart, and do not crowd them together; any item will then be quickly seen, and you will not have to question to which part of the building a description belongs.

## Trade Headings.

Conceding this point that a specification should be perfectly clear at a glance, a further question arises: Should the work be divided into separate trade headings? As a general principle this is unavoidable, and I think desirable, but I would also say, without hesitation, that very many distinct items of work would be clearer and more comprehensible if the various trades relating to them were not separated, but the complete item of work described under the one heading, placed in whichever part of the specification seemed most desirable. Thus, to illustrate:—

Take an iron casement window, with wood

frame, linings, and the usual glass and fittings. Ordinarily this would come under several trades; but I would describe everything connected with that window under the one heading of, say, joiner—that is, the iron casement, the wood frame, linings, shutters, and finishings, the ironmongery, and glass, with, perhaps, a cross reference in smith, stating that the iron casements are described in joiner. The builder will see at a glance all the requirements of that window, and the client, if he peruse the specification, will also have an idea how it will look when finished. Another example: Take an iron girder. I would describe under smith and founder the girder itself, the templates, cover stone, any cement packing, felt or lead seating, and the painting. Perhaps it might be better to generalise the painting under painter in the one description applicable to all girders and covered up ironwork, and in that case a reference should be put under smith and founder. There will then be no excuse for the painting to this work escaping the builder's attention.

When describing the work to small alterations, repairs, or decorations, it is almost essential to adopt the order of running on the description, regardless of trade headings and formalities. Of course, when work is let to separate tradesmen you cannot adopt this method.

## Conditions of Contract.

A building contract, which is often referred to in a general way as the specification, is understood to include the conditions of contract, the form of contract—that is, the actual agreement—and the specification of the subject matter embraced in the contract. The conditions of contract and the form of contract should only embody, so to speak, the actual legal requirements, which, taken, by themselves, do not affect the description and value of the work and materials. These strictly legal clauses I do not propose to touch upon.

But it will often be found in many specifications that under the leading conditions of contract are placed many clauses which do actually affect the amount of the estimate. This, I think, is a mistake, for at the time of tendering, a builder so often only hurriedly scans the conditions of contract, and when reading them over again, preparatory to signing the contract, may, unfortunately, find there are several items included which he has omitted to price in his estimate. The client does not always see his point, and the builder either has to bear the loss or throw up the work. This remark chiefly applies to a work for which no bills of quantities have been prepared.

But that part of the contract, or, in other words the specification itself, which concerns the actual work and material, should embody every item which may in any way affect the estimate therefore, under the General Clauses, or Preliminary Items as they are often called, I would include the following matters, which are so often to be found only under the Conditions of Contract:—

The date of completion—this requirement may necessitate an extra allowance for overtime or other special employment of labour;

The mode of payment—under certain conditions the builder may require to borrow money to enable him to carry on the work between the times allotted for payment;

Keeping the work in repair for a stated period after completion—this may necessitate an allowance to cover any matter which may crop up under this item;

The insurance fees and fees to any authority should also be included under this heading of Preliminary Items, as also any other matter not coming under a trade heading which may possibly require a price.

Just a hint as to the outside cover of a specification. Put as a reminder in red ink a note of the insurance and date of completion. One is apt to forget these matters.

## Marginal References.

Then as to the marginal references. It will be found a great convenience to all parties if a marginal note is given to each distinct item of work. It will then be seen at a glance where a "bath casing" is placed, or the "spandril framing to a staircase," instead of having to

wade through pages of other subject matter. In addition to the marginal notes, I would put all the principal items under sub-headings, so to speak, in their respective trades; such as all wood staircases under a sub-heading of "Staircases" in Carpenter and Joiner; similarly all casement windows under a sub-heading of "Casement Windows," and all other such divisions of work. And when you come to the many minor items which only require a separate clause to each, these might be put under the one sub-heading "Other Items," or "Other Fittings." These sub-headings should be written across the page.

As to numbering the clauses. This, I think, very important. It will be found of great assistance to be able to refer to the number of a clause in a letter when calling the builder's attention to any special part of the work, as also in the case of cross-references when referring from one part of the specification to another. Each separate clause need not necessarily be numbered, but only each distinct item of work which may embrace several clauses.

As to marginal sketches to illustrate rather involved parts of the specification, I think in many cases these will be found very useful. I would then suggest that the lithographer take them direct from the architect's sketches. If the specification is typewritten or fair copied in the office, then either do all the sketches yourself or else see for yourself that they are copied correctly.

## Provisional Amounts and Prime Cost.

Where should provisional amounts and prime cost items come in a specification? Should each amount come under the trade in question to which it refers, or should they all in a body be put together? I think no hard and fast rule can be applied to this, but small provisional amounts should run on with the subject-matter to which they refer; and distinct and perhaps more costly provisional amounts, and of which there may be no other description in connexion, should be all placed together under the one heading "Provisional Amounts," either immediately following the preliminary items or else at the end of the specification.

The general run of "Prime Cost Items" usually apply more to small matters, and these, I think, should follow the items to which they refer. But if of any considerable amount I would then put them also under the heading "Provisional Amounts."

Should a specification have an index similar to that provided with a technical or scientific work? I think this would be very useful, and it certainly would make a specification a more complete and handy document. The index need only refer to the principal items.

Sometimes it is difficult in a specification to locate the description of a particular part when there is no distinct mark or name on the drawing. Some employ the points of the compass; this is very well if they will apply, but when you get a position perhaps centrally situated, it rather fails in its object. I prefer in such cases to put a number or a letter, and that perhaps in a circle, against the part in question, and so refer to it in the specification. Many of these references will not be required, as the drawings will generally be sufficiently clear to locate the descriptions by referring to the ordinary parts of the building by name or position.

Should an old specification be referred to when describing the work relating to another building? I think only so far as the general clauses are concerned, such as those under the preliminary items, the preambles to the various trades, and the other general covering clauses under those trades. But the details of the work I would write entirely in the first place without any reference whatever to a former specification. All detail descriptions cannot be exactly alike, and you will be far more likely to put in any necessary variation of the detail in question if you think it out as you go along, than if you copy an old description and alter it afterwards to suit, because when you copy an item you cannot properly be thinking out the details yourself.

To obviate omitting, so to speak, any of the



general items common to all work, have by your side a form or tabulated index of the items coming under the various trades. This can be looked down at a glance and all the items extracted which may be required.

### The Word "Best."

There is one word in a specification of which the meaning is often disputed. It is the word "best" when applied to workmanship and materials, especially to materials, and is, I grant, somewhat ambiguous. But I would not use such terms as "best finest," "extra best," "super best," "best best," and so on, but merely employ the word "best" once and for all, and attempt to define its meaning.

Here is a suggested definition of this word:—The word "best," as applied to materials, articles, and workmanship, shall mean that there is no superior quality of material or finish of article in the market, and no better class of workmanship obtainable.

In fact, by defining this word "best," it will only be necessary to mention it in the one clause when stating that all materials and workmanship are to be of the best quality and class.

We are all apt to fall into the error of describing certain materials mechanically, such as timber from a market which has long since been entirely exhausted, or stone from a worked-out quarry, or we use misleading and exaggerated language, "timber free from knots," demanding what, in our own minds, we never expect to obtain. We should only specify what we can get, what we mean to have, and then see that we get it.

At the same time we must not lose sight of the fact that our endeavour must be to obtain the most suitable and best material procurable in the market, and that the work when executed shall be a credit to all.

As to the question of sub-contracts, this, I fear would take some time to discuss, but, as a general rule, let a sub-contract go through the general contractor; but when this is impossible then make the sub-contractor subject to all the conditions of the main contract equally with the general contractor, and in the main contract stipulate that the general contractor is to give every facility to the sub-contractor, and allow him the use of his scaffolding and plant.

### Order and Place.

Having now so far settled the general scope and bearing of a specification, the next step is to put the various items into order and place. As I have before said, we cannot do better, generally, than divide the specification into separate headings or trades as they are called. As to the order in which these trades should be placed, I do not think that very important, only let each trade, if possible, come in the order in which the building would be erected.

Thus the specification would be started with the preliminary items or general clauses, under which heading would come every item that would apply to the building generally as a whole. Then would follow the trade of excavator, this being the first start of the actual work; then the trades embracing the structural parts of the building, such as bricklayer or mason, whichever trade would chiefly apply to the walls. In like manner you would go on constructing the building on paper until it was roofed in, when the trades taking the interior fittings, finishings, and requirements would follow, and finally the decoration and painting.

As to what items each particular trade should embrace, or how many trades the specification should be divided into, that, to some extent, would be a matter of convenience and clearness, consequent on the nature of the building in question. Thus, if pavior is a considerable item, make it a separate trade; but if a very minor point, then the paving may come under the trade of bricklayer. Again, if the drainage is a large item, I would make that a distinct trade, instead of putting it as it is often done, under excavator. Further, floor and wall tiling might either come under pavior, bricklayer, or plasterer, as each of these trades, in certain parts of the country, is performed by the same class of workmen. Many

other items may be treated in the same manner.

Each trade is started with a preamble or the general clauses mostly applicable to all the items under that trade, such as the description of the various materials, and the general covering clauses referring to similar parts of the work in different positions; after which follow in detail the actual items of work. Strictly speaking, a preamble is an introduction or preface, but in a specification the term is applied in the sense of denoting the general clauses and descriptions at the beginning of each trade.

Going more fully into the various items of almost similar description under each trade, I think the best plan, in most cases, is to describe all the items of a similar nature to each floor separately, from the lowest to the topmost story, continuing with other similar items on each floor. But if the description of any item will apply equally over the whole of the building, describe it so, without reference to each separate floor, and thus save useless repetition. As to the exact order of the various items under each trade, I would put them as far as possible in that order in which they would be built. But there is no hard and fast rule to follow in this respect, as in many cases it will be clearer to run them on, regardless of that order.

### Material.

When describing the items, do not omit to mention the class of material, thus state the particular quarry and bed of stone, give the class of wood for the timber and joinery work, and state whether it is rough or wrought. A general clause, such as this, "that all exposed faces of timber and joinery work, except where otherwise mentioned, are to be wrought," will save repetition of this word "wrought."

State if you mean Portland or other kind of cement, the word Portland is often omitted.

And all other descriptions of materials should be clearly defined.

Reverting once more to what is considered the best order in which to place the items of work under the various trades, I know that this is one of the chief difficulties of the beginner, and I will suggest an arrangement for some of the principal items. I have before mentioned that, as a rule, it is best to specify the items in that order in which the work will be built, but that it is not always possible to carry out that order. But I would say that whatever order you once adopt, always follow in all your specifications and in all its parts, so that you will know yourself where to find an item.

I have also said that each trade in every case should start with a preamble, or the general clauses and description of materials.

Now to take the principal items under the various trades respectively. In

### Preliminary Items

I do not think any particular order is essential, but it would be as well to keep the clauses in that order which would mostly run with the order of the work to the building. If old buildings have to be removed, the description would come under this heading of preliminary items. But if a housebreaker is employed, then this work would form a separate and distinct contract by itself. In

### Excavator

Take the surface excavation first; then the deep excavation, such as that to basements and cellars; then the general excavation to the foundations and the attendant items, such as planking and strutting, filling and ramming; and, finally, any other small or particular items. Then describe the concrete foundations, after which the surface concrete and any brick rubbish under, then the concrete floors, roof, and stairs. If the walls of a building are in concrete I would take these immediately after the concrete foundations, of which they then would almost form a part.

Under drainage describe the manholes first, then the pipes with the concrete, then the gullies and other similar items.

The items under the trade of pavior are so

simple that any order might serve, but take first the important items of internal paving, and follow on with the smaller items, and finish with the external paving. In

### Bricklayer

Commence with the general walls of the building, then the damp-course, hoop iron, and other attendant items. Then those parts in cement, such as rough arches, trimmer arches, piers, sleeper walls, half-brick walls, and dry areas. Then the external facings and pointing, gauged or other external arches, dressings, mouldings and ornaments, external glazed brickwork, or flint facings. Then the internal facings and pointing, glazed brickwork, and wall tiling. Boundary and retaining walls and such-like distinct items should come last, and be described separately and completely by themselves. Terra-cotta facings might either come with the other external facings, or be kept as a separate item after the description of the other general work, and before such items as boundary or other walling. In

### Mason

Commence with the rough stone, such as templates and corbels, if not elsewhere described, and follow on with the thresholds, sills, copings, internal pavings, staircases, hearths, and chimney pieces. Then the external paving, steps, and curbs. If the walls are built or faced in stone, I would describe these first completely, with all the labours, mouldings, and ornaments on them, and then follow on with the rough stones and internal items, and finally with the external items, such as paving, steps, and curbs. I would not trouble to keep all stone of a similar nature under the one heading, unless it should happen to come in that order.

### Carpenter and Joiner.

Many make carpenter and joiner two trades. In a large work perhaps it is better to separate them, but in a small work I should certainly keep them together. But it is immaterial whether they are separated or not as long as the descriptions are clear. Personally, I prefer them generally under one heading; you will perceive the reason from the order of the items I will now give you under these trades:—

Lintels, bresssummers, posts, cradling, floor and ceiling joists and plates, sound boarding roof or flat timbers, felt, battens, gutters, and all external joiners' work to the roof or flats, except windows, doors, and skylights, such as rolls, facias, barge-boards, and such-like items.

Then would come quartered partitions, followed on with flooring, windows, skylights, external doors, internal doors, framed partitions, skirtings, dadoes, wall and ceiling paneling, staircases, sinks, water-closets, and bath casings, and other internal fittings, such as shelves, cupboards, and such-like domestic fittings.

Fencing, weather-boarding, or other outside work should be complete items by themselves, and come last.

Half-timber work, with all its attendant items, might, I think, come after the description of the rough timbers.

I would not separate hard words from soft woods, but describe them as they come on each separate story.

(To be continued.)

**An Arts and Crafts Exhibition** will be held at the Art Gallery, Leeds, from the 6th to the 22nd of November next, by the Yorkshire Ladies' Council of Education.

**A Truant School at Dinas Powis** was formally opened recently. The buildings have been built in the Tudor style of Gothic architecture, from plans prepared by Mr. W. H. Dashwood Caple, architect, of Cardiff, who has superintended the erection of the buildings, the contractors being Messrs. E. R. Evans and Bros., of Cardiff. The cost of the buildings, boundary walls, roads, and lodge will be about £14,400. The site was purchased from General Lee at a cost of £1,750.



## LONDON IMPROVEMENTS.

THE Select Committee of the House of Commons appointed to consider the Bill proposed by the London County Council for the demolition of houses in the neighbourhood of St. Mary-le-Strand, St. Clement Danes, Holywell Street and Catherine Street (involving the destruction of the Gaiety Theatre), and the construction of a wide thoroughfare from Southampton Row to the Strand, has, after deliberations extending over a period of nearly a fortnight, passed the preamble of the Bill, subject to certain conditions.

Mr. A. H. Brown was the chairman of the Committee, and the other members were Lord H. Bentinck, Sir. T. D. Gibson-Carmichael, and Mr. Lenty. The Counsel for the Bill were Mr. Pope, Q.C., Mr. Freeman, Q.C., and Mr. Talbot. Petitioners against the Bill were also represented by counsel.

### The Council's Proposals.

Mr. Freeman, on April 21st, opened the case for the promoters, and stated that it was a Bill to empower the London County Council to make a new street from Holborn to the Strand, to widen Southampton Row and High Street, Kensington, and to carry out other street improvements. The projected improvements were the most important that had been brought forward for many years. All through the discussions which had been going on about the Strand improvements there had been two or three desires generally expressed: that a broad street should be opened out from Holborn to the Strand; that Holywell Street should be swept away and its area brought into the Strand; and that the insanitary area in and about Clare Market, which would be immediately contiguous to the line of the new thoroughfare, should be removed. Acting on these views, the Improvements Committee of the County Council had recommended that, without carrying out the whole undertaking, a commencement should be made by clearing away the Holywell Street block of houses, at an estimated cost of £569,000. The Council had adopted that recommendation in July, 1896, and Parliament sanctioned it in 1897.

### What has been done.

The County Council were now acquiring the whole of the property between Holywell Street and the Strand, and they would very soon be in a position to carry out that part of the improvement. In November, 1897, the Council decided to undertake the second part of the general scheme by widening Southampton Row at an estimated cost of £162,000, and that also had been sanctioned by Parliament, and was being carried out. The scheme had been sanctioned for dealing with the insanitary area of Clare Market under the Housing of the Working Classes Act of 1890, the estimated cost being £216,000. The present scheme involved the utilisation of that area. The Council had had in view the carrying out of one homogenous scheme, and the last link of that scheme the Committee were now asked to sanction. The scheme provided for the formation of a street from High Holborn at Little Queen Street, opposite Southampton Row. It would proceed in a southerly direction across and intersecting Great Queen Street, Ardina Street, Vere Street, Clare Street, and Stanhope Street. The street would then read into two branches. The westerly branch, which was to be of the same width as the main street, viz., 100ft., would proceed to Catherine Street and Wellington Street, so as to form an approach to Waterloo Bridge. The easterly branch would pass from Stanhope Street through the New Inn and the Strand to St. Clement Danes Church. The scheme provided for the widening of the Strand to a considerable distance on the north side of St. Mary's Church, and for the disposition of the whole of the site—four acres in extent—within the area bounded by the Strand and the two large semi-circular streets he had described. It had been decided that there should be a

**Handsome Architectural Terminus** at the proposed new street. It would be in a central position, and would be an ad-

mirable site for the erection of handsome buildings; and these would be erected under the supervision of the Council itself. Complaint had frequently been made that in the construction of buildings or the laying out of sites in London no regard was had to combination or general effect. This reproach would not apply to the new site and the new streets. The approach to the new street would be a fine one, even better than those which could be found in Continental cities. It would come with a graceful sweep into the Strand, the Strand being made a wide thoroughfare at that place, with a splendid block of buildings. The gradients would be easy for the convenience of traffic, and the whole of the new streets would be 100ft. wide. The work would be carried out at once in order that the value of sites might not be enhanced by delay. The contemplated alterations would displace 3030 persons of the labouring class, in addition to the persons displaced in Clare Market, all of whom would be provided for by the County Council, partly by the

### Erection of Artizans' Dwellings

on the cleared land, but behind the frontage of the new street, and partly on the Millbank site and elsewhere. The estimate for the necessary works connected with the improvement, and the formation of the new streets, subways, &c., would be £120,000. The cost of acquiring the land, after deducting recoupment, would, it was expected, come to £354,100. To that had to be added the land needed for providing accommodation for the rehousing of persons of the labouring class dispersed. That would be £300,000; making a total estimated net cost of the whole of the scheme of £774,100. The annual charge on the rates on this amount would be less than 1d. in the £1 for the first year, and that did not take account of the amount which would be received under the improvement rate it was proposed to charge. The total cost of land would be £4,442,400; but it was estimated that the recoupment would produce £4,088,300. That was

### A Startling Figure,

but was accounted for by the fact that the character of property in this district would be revolutionised, and the land would let at a greatly enhanced value. The learned counsel dealt at length with the betterment clause. As a rule, in these improvement bills, from twelve months after the completion of the improvement three years were given to find out the betterment value to the owners of property. But, in view of the magnitude of the present improvement, the County Council thought it right that they should have a correspondingly longer period, and therefore they asked for ten years. The County Council asked to be allowed in part to recoup themselves by taking property other than that required for the new street. Thus it would be necessary to provide a new site for the Gaiety Theatre, whose property would be demolished. If the business of the theatre were altogether dispersed and broken up, the cost to the London County Council would be enormous; and the same thing might be said of the "Morning Post" newspaper, which would be displaced. It was only reasonable that the County Council should have power to find

### Sites for the Rebuilding

of these establishments. The clauses for recoupment the County Council regarded as an essential part of the scheme, and without these they would not be able to ask the ratepayers to bear the heavy burden which the bill would involve. Where the condition of property was insanitary, that would be taken into account in fixing the value, and proceedings should be instituted before an arbitrator or a jury, as under the Housing of the Working Classes Act. If the houses were in a proper condition, the only question would be the net value of the property, which would be arrived at by consideration of the net profit accruing from it, plus compensation for compulsory sale. The learned counsel then dealt with the numerous petitions in respect to the bill, among the petitioners being Lord Battersea,

in respect of Dane's Inn, the Duke of Bedford, the Duke of Norfolk, Lord Glenesk, and the proprietors of the Gaiety Theatre. The opposition of the Duke of Norfolk and the Duke of Bedford was principally directed against the operation of the betterment clause in respect of their properties.

### Recoupment and Betterment.

At the resumed consideration on April 24th, it was stated by Mr. G. Shaw-Lefevre that in addition to the new street between Holborn and the Strand, the Strand itself would be widened under the scheme from Wellington Street to the Church of St. Clement Danes. In any public improvement he had always regarded recoupment as the best mode of getting the increment of value arising from the improvement in aid of the cost of the scheme, but there were other cases in which betterment was the best plan. To the south side of the Strand, facing the proposed improvement, it would be absurd to apply the principle of recoupment, and they, therefore, applied the system of betterment there. The scheme would alter the whole character of the district affected, and, in the opinion of the County Council, turn it into a most valuable business locality.

Sir Alexander R. Binnie, chief engineer to the London County Council, said he was responsible for the engineering portion of the scheme. The present scheme has been prepared after consultation with the Institute of British Architects, and it had been specially designed so as to avoid sharp angles and steep gradients. With regard to St. Clement Danes Church, it was not proposed to interfere with the fabric, but only to curtail the churchyard, which was entirely disused, not being an open space. The Committee adjourned until the following day, when Mr. Andrew Young, gave evidence bearing out the statement of counsel with regard to the cost of the proposed improvements.

### Objections Considered.

On the 1st inst. an objection by the "Financial Times" was considered, and Mr. Ram addressed the Committee on their behalf, stating that the new scheme would injure his clients, because it would shut up two streets, which would deprive the buildings of a very great amount of light and air.

The opposition of the vestry of Lambeth was directed to the rehousing proposals of the County Council. Mr. Wheeler contended on their behalf that the site proposed in Lambeth was unsuitable for the increased population, and further, that the district was already threatened with a great increase in consequence of the proposals of the London and South-Western Railway Company. The vice of the scheme was that they were making London too magnificent, too splendid for the people. He urged that the people displaced should be accommodated on the recoupment area.

### The Committee's Conditions.

The Chairman finally announced on May 2nd that the Committee had decided to pass the preamble of the Bill, subject to the following conditions:—"That the preamble is proved so far as regards the Strand and Holborn improvements; that the land south of the Strand be excluded from the betterment area, also the property of the 'Financial Times'; that the number of years in which betterment may be proved be limited to ten, namely, seven for works and three for improvement; that the Danes Court property remain as proposed in the Bill; that the making of the road remain in the hands of the County Council. It is not proposed to re-insert in this Bill Section 133 of the Lands Clauses Act, but that the Sardinia Street works of the Metropolitan Electric Supply Company be reinstated in such a way that there be no interference with the business, and on such a site as will protect them from any proceedings for making a nuisance. With regard to Clause 20, the Committee think some Government authority should give a certificate of approval before property is taken under the valuation provided under Section 21 of the Housing of the Working Classes Act, 1890."



## Correspondence.

### PRESERVATION OF HISTORIC REMAINS.

To the Editor of THE BUILDERS' JOURNAL.

1, GREAT COLLEGE STREET, WESTMINSTER.

SIR,—I have noted with interest, in your issue of the 3rd inst., your remarks on "the rôle of art-critic to the House of Lords" as played by the Earl of Wemyss. You rightly say that we owe thanks to those who take upon themselves the functions of critic and censor in artistic matters of national concern, and you rightly hint that these are functions which might be entrusted to a Government department. I would suggest that another such function might be the preservation of the gifts of the past. We have, in one form or another, a priceless heritage of relics primæval, Roman, mediæval, and modern, and the only statutory provision for their safeguard is the Ancient Monuments Act 1882, which empowers the First Commissioner of Works, under certain circumstances, to take charge of megalithic remains. The National Trust hope during this session to introduce a bill extending these powers to Roman and mediæval remains. I cannot trespass on your space by giving a detailed account of the bill, but I should be happy to give all information in my power to any of your readers who might wish for it.—Yours faithfully, HUGH BLAKISTON.

Secretary, The National Trust for Places of Historic Interest or Natural Beauty.

### EFFLORESCENCE ON TILES.

To the Editor of THE BUILDERS' JOURNAL. EXETER.

DEAR SIR,—Heartily I endorse your correspondent's recommendation of skim milk (see p. 178 in number dated April 26th). When, in the early '60's, I was a journeyman workman in the midlands, my landladies, within whose humble homes I lodged (especially in the Birmingham neighbourhood), used after scrubbing to wash their red-brick floors every Saturday with a quart of skim milk. The bright finish this practice gave the bricks was wonderful.

Of course, the white bloom is caused by lime. A proper foundation for tiles is a cement concrete brought to a level surface by a coating, not less than a quarter of an inch in thickness, of pure Roman or Portland cement, and on the foundation so prepared, when it is sufficiently dry and hard, the tiles are laid in Portland cement mixed with good, clean, sharp sand. Thus laid subsequent white deposits (if any) will disappear after a few cleanings. If from notions of mistaken economy tiles are laid in lime, efflorescence will most certainly arise, and there is no permanent remedy, save taking the bull by the horns and relaying them in the proper material.

Soft soap and warm water will remove grease spots. More serious stains may be modified or got rid of by the application of a diluted solution of muriatic acid and water rubbed on with pumice stone. Care must be taken, however to wash the acid off again after application, or it will assuredly decompose the cement upon which the tiles are laid.

HARRY HEMS.

### REGISTRATION OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL. ARMAGH.

DEAR SIR,—In your paper of the 19th inst., W. M. R. asks your opinion on the "Registration of Architects," and you kindly offer to publish the opinions of some of your readers on the subject, hence my reason for troubling you with the following remarks, as I believe no more momentous question in regard to the profession could be discussed, and I consider you entitled to our best thanks for allowing the matter to be considered in your excellent paper. Now before speaking for, or against,

Registration, I think we should take into consideration the responsibilities of the profession, and its position or standing, as compared with other professions.

First—the responsibilities. These are certainly not light; the architect is, in my opinion, under greater responsibility to the public than either the medical or legal practitioner, that is to say, he can be, and is held more responsible. For instance, take the doctor; is he held responsible for his mistakes? Certainly not—even if the patient dies owing to his mistake or carelessness, it is attributed to the decree of Providence. Then, there is the lawyer, he may lose the case owing to his want of knowledge, mistake, or carelessness, and although the losing of it may mean the loss of a large amount of money to his client, is he held responsible? No; his client puts all the blame on the state of the "law." But how different with the architect; he is not only held responsible by his client for the proper construction, suitability, and appearance, but also for the cost of the work entrusted to him, and what is often worse, he has to contend with the unreasonable ignorance of his client.

Second, the position or standing of the profession as compared with, say, that of the lawyer. Now, notwithstanding the responsibilities of the architect, requiring on his part much ability and continual attention, independent altogether of that æstheticism ever present in him whose heart is in his work, is it not true that in a general sense the lawyer of even average ability is more respected than the architect? Unquestionably this is so. For instance, what position does the architect occupy if he is a witness or plaintiff in a court of law. If the former, he is the target for the abuse of the lawyer, and now and again the object of ridicule by the judge. Not long since we had an instance of a judge saying that "architects were the most unsatisfactory witnesses who ever came before him, as they never agreed with each other." Would he have said this of the lawyers or doctors? Certainly not. And yet we find members of both these professions continually disagreeing with each other. Then, if the architect is obliged to be the unfortunate plaintiff in trying to get his fees, as a rule, what standing has he in court? Simply none. The lawyer opposed to him, although ignorant of the plaintiff's duties, will dictate to him what he should or should not have done, and the judge, equally ignorant in this matter, will decide, according to "his own opinion," the amount, if any, which he thinks the unfortunate plaintiff is entitled to, and the latter must "grin and bear it." Again, take the case of the lawyer working for a committee or public body of any sort, is he dictated to as to how he should prepare his case and carry it through, or is his charge as a rule questioned? No; but in the case of the architect, from the moment he is engaged until the work is finished, he is continually under a sort of censorship, while very often the men who give him the most trouble are those who have graduated as "gentlemen" by virtue of their bank account; and when he sends in his bill these are the men who consider themselves to be the best judges of what his remuneration should be.

Now, why is the profession in this undesirable position? Well, I think there are two reasons which stand out prominently—first, the culpable negligence of the profession in protecting its interests. No other calling or profession that I know of has been so apathetic in this direction! The workman has his trade union, the employer has his federation, the medical and legal professions are safeguarded, but the architect has not the ghost of a shield. True, he is nominally recognised as a professional; but more in the nature of a necessary evil than in any other way. Any man can be an architect, and not only so, but he can at the same time be anything else he likes; for instance, he can be a tradesman of any sort, and also an architect; that is to say, he may draw designs with a piece of charcoal, or, if not able to do so, he can easily purchase for a penny one of those weekly "Architectural Encyclopedias," in which he will find all sorts of designs, and, if he is more dense than usual,

he can apply to one of the "artistic architects" who advertise themselves therein, and he will be piloted right through for next to nothing. There has just been finished within a hundred yards of my office a new front to a house, the lower part made into a shop, and with all the "Greek and Roman" orders over the plate-glass window; the architecture has been produced with gold leaf and varnish, the architect being a sub-manager of a hardware and plumbing shop. This gentleman is also said to be a "sanitary and electric engineer;" I know him very well, as he lately got a job of plumbing work done to my specification; the second reason, in my opinion, is that the profession has not that standing in law it should have. This brings us to the matter of "Registration," and certainly I cannot see how registration would injure the profession, as some believe; all the same I do not believe that it would produce architects of more ability by making them pass "stiff examinations." But it would place the profession in a firm, unassailable position, obtain for it the respect due, do away with a great amount of unprofessional conduct at present practised, and confine the membership to those only practising "solely as architects." But knowing the difference of opinion that exists in regard to registration, I am not confident of it becoming law in the near future. But if this be so, why not have an "Architectural Union" of the United Kingdom, organised for the purpose of taking every legal means possible to protect the interests of the profession, with branches throughout the country. I am confident such a union would receive hearty support, be a success, and very greatly strengthen our position as a profession.—Hoping to hear the opinion of others on this matter, and apologising to you, sir, for the length of these remarks, yours faithfully, "ARCHITECT."

**The Excavations in the Forum at Rome** have brought to light the pedestal of one of Varro's lions, remains of the Republican Rostra, which were rebuilt at least three distinct times, and between the Regia, or Chapter House of the Pontifices, and the Temple of Vesta has been found the tufa boundary wall of the "Temenos," or sacred inclosure, belonging to that temple. At the same time was recognised the "area" of the Calatores Pontificum et Flaminum, or attendants of the Pontifices and Flamens, together with an inscription relating to these officials and belonging to the reign of Trajan.

**The British Royal Pavilion at the Paris Exhibition** is to be a very pretty and interesting building. Its plans have been drawn on the model of Kingston House, Bradford-on-Avon. Within, the pavilion will have a gallery adapted from the Cartoon Gallery at Knole House, Sevenoaks, and the main hall will be adorned with tapestry panels after designs by the late Sir E. Burne-Jones, and executed by Messrs. Morris and Co. The building will be constructed with a framework of steel covered with cement, and its erection has been undertaken by Messrs. John Aird and Co. The designs have been prepared by Mr. Edwin L. Lutyens.

**The National Association of Master Plumbers** of Great Britain and Ireland held its annual meeting last week at Wolverhampton. Mr. John Beal, of Hull, presided, and there was a large attendance of delegates from all parts. A deputation, consisting of Messrs. Walters (Hull) and Rhodes (Leeds) waited upon the Conference for the purpose of urging a federation of master plumbers. Hitherto, Mr. Walters said, in nearly all the difficulties which had arisen between the masters and their men, the former had been defeated owing to the men of the different trades throughout the country being united in one common union. He thought the employers should take a leaf out of the men's book and establish boards of conciliation. They did not want strikes, but so long as the masters were divided into separate organisations, the workmen as a body would be their masters.



## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,

May 10th, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

**A Record Competition.** THE competition for the Cartwright Memorial Hall at Bradford seems to have aroused an exceptional degree of interest in the architectural world. No fewer than 115 sets of designs have been sent in—surely a record number—and these are now being exhibited in the Technical College, at Bradford. The award of Mr. Alfred Waterhouse, R.A., the assessor appointed by the Bradford Corporation, was made known last week, and is as follows: First premium, £150, Design No. 41, Messrs. J. W. Simpson, A.R.I.B.A., and J. Milner Allen, A.R.I.B.A., joint authors, 10, New Inn, Strand, London, W.C. Second premium, £100, Design No. 70, Mr. A. R. Jemmett, Great College Street, Westminster. Third premium, £50, Design No. 44, Messrs. W. A. Pite, F.R.I.B.A., and R. S. Balfour, A.R.I.B.A., joint authors, London. A specially written article on this competition, illustrated with reproductions of some of the premiated designs will appear in next week's BUILDERS' JOURNAL.

**The Royal Academy.** OUR next week's issue will also contain the second of our special articles on the architecture at the Royal Academy, the first of which appeared last week. We regret that owing to the indisposition of our artist, Mr. C. E. Mallows, this article—which was announced to appear in the present issue—has had to be postponed for a week. There will be found, however, in our inset plates this week, full-page illustrations of two of the most notable of all the architectural drawings in this year's Academy, viz., Mr. Townsend's design for the Whitechapel Picture Gallery and the Scheme of Decoration for the Lady Chapel, Holy Trinity, Chelsea, which is the joint work of Messrs H. Wilson, C. Whall and Louis Davis.

**Covent Garden Theatre.** THE improvements that have been carried out at Covent Garden Theatre are now practically completed. It appears that certain exaggerated reports have got about as to the extent of the improvements. The following is an authoritative statement of what has actually been done:—As far as the auditorium is concerned, a new red silk proscenium curtain is to be provided, and will be hung on the lines of the so-called "Wagner" curtain. The porch, vestibule, grand staircase, and saloon, are being re-decorated, and the electric light has been installed in the saloon. A new smoking lounge is being erected over the porch from the designs of the surveyor to the Duke of Bedford. This lounge will also be electrically lighted. Of various minor improvements in front of the House, the whole of the sanitary arrangements have been re-modelled, and an installation on modern principles has been provided. In respect to the stage, the scene stores have been re-modelled, and a big "wing" store has been formed. This will facilitate the change of scenes. The most important alteration of the stage is the full installation of electric light in four colours—white, red, blue, and yellow being used—and the supply is to

be taken from two distinct sources, with the view of providing against emergencies. The system accords with the ordinary practice of the London stage and has been put in by Mr. Bowles. A new feature, arranged by the directors is, however, the position of the regulator room below the stage, with a full view of the scene. The whole of the works have been carried out at great pressure under the personal direction of the directors, and of Mr. Edwin O. Sachs, their technical adviser. Possession of the Opera House was given to the Syndicate on March 25th, so that the property has been in the hands of the Syndicate for one month only. There will be no new stage machinery this season, nor will the auditorium be lighted by electricity; the time at the disposal of the directors was too short for these works.

### Disinfecting the House of Commons.

A CURIOUS suggestion was made last week in the House of Commons. It was to the effect that ozone should be supplied to the House when members were not sitting, the idea being that the presence of ozone in the air would prove inimical to those micro-organisms which are said to be the cause of influenza. The First Commissioner of Works replied that having had the plant necessary for the manufacture and production of ozone inspected, he considered the merits of the process to be very doubtful, and not such as to justify the very heavy expense an installation would involve. After this another member made the more prosaic, but more practical, suggestion that the windows should be opened sometimes. Mr. Akers Douglas said he should be very happy to consider that. As we have not heard that a special Cabinet Council has been summoned to deal with the matter, we presume that the First Commissioner has determined to take upon his own shoulders the responsibility of deciding this momentous question.

### Sir W. Richmond on his critics.

THOSE who supposed that Sir William Richmond regarded with indifference the mass of unfavourable comment which has been aroused by his work at St. Paul's Cathedral must have been disabused of that idea, if they read their "Times" last Saturday. At the length of three columns, Sir William seeks to turn the tables on his critics, and, at the same time to expound the artistic purpose which underlies his much criticised decoration. It is not perhaps surprising that Sir William should complain of the tone and temper of some of his critics; we have pointed out more than once that not all the criticisms have been unexceptionable on the ground of taste. There is justice, too, in the remark that "departure from the commonplace invariably occasions invective, stimulates commotion, and gives rise to exaggerated rhetoric, laudatory or depreciative." We do not complain that Sir William has departed from the conventional. Nevertheless, his own defence of his work is, to a great extent, a justification, not indeed for invective directed against the artist, but for the moderate and reasonable criticism that has been passed upon his work.

### A Lame Defence.

FOR what does the defence amount to? The depressing spirit of a gloomy Puritanism, which regards art and beauty as Satan's most powerful weapons, still—according to Sir William Richmond—presides over a considerable portion of the English character. "Belonging to that spirit is St. Paul's Cathedral, severe, prison-like, accurate; a magnificent skeleton which cries out for life and colour in the centre of a gloomy and smoke-begrimed imitation of ashen-coloured Hades." The cathedral being thus defective must be improved, and Sir William Richmond sets to work to make up for Sir Christopher Wren's defective sense of beauty. Now that is not an attitude which is likely to commend itself either to art critics, or to "the man in the street." We English people, even those of us who are wholly free from the spirit of Puritanism, or the "Norcomformist tempera-

ment" (which, by the way, Sir William Richmond wholly misunderstands), have a strong feeling that in St. Paul's Cathedral we have a supreme work of art, which we ought to guard jealously against the attacks of those who would alter or "improve" it. It is well known, of course, that Wren himself intended that the Cathedral should be decorated, and no one would object to a scheme of decoration that could be shown to be clearly in accord with the spirit of the builder. It is when an artist of a later age, with new and different ideas, applies his own theories and tries his own experiments on a masterpiece of a former age, with the spirit of which he has little sympathy, that protest becomes not only justifiable, but a positive duty.

### Improving London.

THE "Daily Graphic," which is distinguished among daily newspapers for the attention it devotes to architectural matters, has within the past few days published two sketches of considerable interest, illustrative of London as it might be. The one is a view of part of the Thames Embankment, showing Somerset House, Waterloo Bridge, and an imaginary Temple Bridge, which our contemporary suggests will be needed to give perfect communication between the new Broadway from Holborn to the Strand and the South of London, and to relieve the traffic over Waterloo Bridge. The second sketch illustrates an improvement that was advocated in our own columns a few weeks ago. It shows the fine view of St. Paul's that would be obtainable from the end of Cheapside if a further clearance were made of the shops at the corner of Paternoster Row. There is, we fear, not the slightest chance of this improvement being carried out, but we are glad to learn that the house already demolished is not to be re-erected, but that the corner from the Newgate Street end of Panyer Alley is to be rounded off, thus throwing an additional 15ft. or so into the roadway, and leaving more of St. Paul's visible than was the case until quite recently. This is not all we could desire, but it is something at least to be thankful for.

### Chelsea Embankment Disfigurement.

THE following letter from Mr. J. E. Dowson, of 91, Cheyne Walk, Chelsea, appeared in "The Times" of May 2nd. It explains itself, and no comment is necessary:—"Vast sums of money have been spent on reclaiming the northern banks of the Thames and in building the embankment. Trees have been planted, and we were flattering ourselves that sooner or later we should have a pleasant boulevard. But we have to reckon with the County Council and the extraordinary lack of taste of its advisers. Two years ago they promoted a scheme for removing the natural beauties of Chelsea reach, one of the few bits left of picturesque old waterside London. They wanted a bee-line, not a graceful bend in the river, not rich-coloured sailing barges, nor anything not set out with rule and compass. But the residents of the neighbourhood and the artistic world in general happily defeated the County Council. A new trouble has just been sprung upon us. They have evolved the original and magnificent idea of erecting a series of sewer-ventilating shafts along the Chelsea Embankment. These shafts are plain vertical pipes, about 1ft. in diameter and 30ft. in height, and the first of them has just been fixed towards the western end of Cheyne Walk. It is close to the roadway, not more than 40ft. from the fronts of houses opposite, and the top of the shaft is on the same level as the second-floor windows. Even if this tall pipe were necessary, it might easily have been placed close to a tree nearer the river; as it is, it is isolated, and spoils not only its immediate neighbourhood, but the charming views up the river which may be had from this part. In all seriousness, cannot something be done to stop this ugly contrivance which is to send forth volumes of evil-smelling and poisonous gases? A second shaft is being put up opposite Chelsea Old Church, and I understand that nine more are to follow."



## Professional Practice.

**Ballycotton, Ireland.**—The foundation-stone of the new church now in course of erection, was laid on April 23rd. The cost will be about £5,000. Externally the church is to be 98ft. long and 50ft. wide. The height of the aisle walls will be 12ft. from the floor level, and that of the nave walls 25ft. 6in., and to the apex of the roof 37ft. The turret will be 60ft. high. The structure will be faced with pitch-faced ashlar in random courses, having cut limestone dressings to windows and doors, and similar string courses. The style is Romanesque, and the pillars to the nave arcade, which are six in number, will be of Aberdeen granite, on Portland stone bases, with moulded Portland stone caps. The roof will be open timbered pitch pine, while the flooring will be of pitch pine and breeze concrete, and the passages set in caustic tiling. The side aisles will be approached by two handsome porches, and on the southern side of the building there will be three aisles and also the sacristy. The site of the church stands midway on the hillside between the upper and lower villages. The contract is in the hands of Mr. J. J. Coffey, builder, Middleton, and the architect is Mr. J. C. Ashlin, of Dublin.

**Breaston.**—The church of St. Michael, Breaston, has been reopened after having been considerably altered and restored from designs prepared by Messrs. R. Evans and Son, of Nottingham. A stone organ chamber and vestry have been built in place of the brick vestry, and an oak screen has been erected in the chancel, which has been tiled. The walls have been replastered, and the whole of the roof has been stripped off, and the woodwork repaired, whilst a new oak roof has been provided for the south aisle. New choir stalls have been built in the chancel, but these, for the present, are only of a temporary nature, and it is hoped to replace them with something more permanent. It was estimated that £1,000 would cover the whole cost, and this sum has already been raised, chiefly in the village itself, but another £500 is still required to clear the church from debt, and efforts are to be made during the next few months to reduce it. Mr. Charles Baines, of Newark, for whom Mr. Askew Browning has acted as superintendent, was the contractor for the work, and Mr. Haslam, of Derby, and Messrs. Grundy, of London, have put in a new heating apparatus, which is on the hot-air principle.

**Llandaff.**—The Hawthorn School, built by the Whitchurch School Board, was formally opened recently. The school has been built on a site of half an acre, and provides accommodation for 210 children. The building is well and substantially built in courses of Newbridge stone, dressed with red brick groins and arches, and Bath stone sills and copings. The central gable stands out prominently, for the site being somewhat hidden by the surrounding houses, a conspicuous feature was necessary to enable the school to be seen from a distance. The building consists of two classrooms, each 21ft. 3in. by 19ft. 6in., divided from the large room by folding partitions, which can be thrown back when required, and a large school-room, 58ft. 6in. by 22ft., also divided by a folding partition, and is planned in such a manner that anyone standing in this room can command a view of the entire school. There is in addition to the foregoing a large wing. The amount of contract for the erection of the building, including furniture, was £2,131. The architects were Messrs. Robert and Sidney Williams, Borough Chambers, Wharton Street, Cardiff, and the contractor was Mr. William Evans, Merthyr Road, Whitchurch.

**London, E.C.**—A restaurant entitled the "City of New York," has just been erected by Messrs. Porter Bros., in Hand Court, Holborn, London. The chief feature of the new hostelry is what is known as the "Baronial Hall," which will accommodate close upon 400 guests. The hall is an exact copy of the

rooms to be seen in Elizabethan and Jacobean mansions. The galleries, furniture, and fittings are of oak, and the style generally is Jacobean. The hammer beam roof is very picturesque, while the Elizabethan window of stained glass, bearing the arms of the leading American and British cities, is also attractive. In the gallery is a large electric organ. Adjoining the baronial hall are a handsome marble hall, a tea and coffee lounge, and a wine buffet. Immediately beneath the baronial hall is a large billiard-room. The architect is Mr. Horace Wakley, F.R.I.B.A.

**Mountain Ash.**—A new Catholic church has been erected at Mountain Ash from designs by Mr. Bernard Smith, of 8, Gray's Inn Square, London, W., carried out by Messrs. Collins and Godfrey, of Tewkesbury at a cost of £1,000. The building is in Gothic style, and is composed of a nave 63ft. long and 28ft. wide, and a sanctuary 19ft. long by 17ft. wide, in addition to which there are a priests' sacristy, acolytes' sacristy, baptistry, vestibule, and organ gallery, the latter being at the west end. The roof of the building is of pitch pine, with battlemented mouldings resting upon corbels. The church is heated with hot air and lit with incandescent gaslight. The Stations of the Cross are placed around the church. The sanctuary is inclosed by a carved oak rail. The altar is built of Pons stones, and is approached by two steps from the floor of the sanctuary. At the rear of the altar are two gradus covered with marble. Above this is the Tabernacle. It is 3ft. high by 2ft. 9in. wide, and is covered with a carved oak pinnacle canopy, with recess for a crucifix. On the centre panel of the organ is a monogram of the Blessed Virgin with a fleur de lis, emblematical of her perpetual virginity, on the side panels. On the north side of the altar is the ambry for the reception of the holy oil, and on the south side a piscina.

**Nottingham.**—The opening ceremony in connection with the Mundella Higher Grade School and School of Science, in the Meadows, Nottingham, took place last Saturday week. It has been built at a cost of £17,000 from the plans of Mr. C. Clark, of Nottingham. The larger school is in two separate blocks, divided into the Higher Grade and Science department, and the laundry, gymnasium, and dining-rooms. In these accommodation is provided for 402 girls and 502 boys; whilst in a neighbouring building 230 infants will be accommodated. The front of the Graded School, which is in Mundella Road, is of brick, with yellow terra-cotta dressings. On the ground floor is situate the girls' school; on the first floor is the boys' school; and the laboratories, lecture-room, and drawing-class room occupy the second floor. Entrance to the girls' school has been established on Mundella Road, the managers' entrance being also at this point. The boys' and infants' entrance is in Collygate Road. There is on the ground floor a girls' assembly hall, which is 64ft. by 30ft. 6in., and is approached from two entrances. On the south side of the Graded School, in a separate building, are the gymnasium, the laundry, and separate dining-rooms for girls and boys. The gymnasium is 44ft. by 22ft., and is completely fitted with apparatus for the physical development of scholars. The infants' school in Collygate Road, on the north side of the Graded School, has a central hall 48ft. by 27ft., and has two entrances. All the walls up to four feet high, on the interior of the buildings, are faced with white glazed bricks.

**Oxford.**—Messrs. Davy and Salter, architects and surveyors, of Maidenhead and Isle of Wight, have opened a branch office at 136, High Street, Oxford. Mr. Stephen Salter is residing in the city so as to personally superintend the new branch.

**A new Liberal Club** was opened at Hebdon Bridge by Sir Robert Reid, Q.C., M.P. It is an English Renaissance structure, and has cost about £4,000.

## Keystones.

**The Foundation Stones** of the Oldbury Institute were laid a short time ago. The building will cost about £6,000.

**The Restoration of Queen Elizabeth's Lodge** at Chingford is to be carried out at a cost of £700 by the Corporation of London.

**Kirkstall Abbey.**—Plans are to be prepared for a lodge, shelter, and tramway waiting accommodation, with entrance gates, for Kirkstall Abbey.

**A New Bridge.**—The Borough engineer of Sunderland estimates the cost of a bridge, to be erected over the river Wear between Southwick and Deptford, at £129,603.

**Lady Holle's School.**—The Fire Brigade Committee of the London County Council are about to purchase for £31,000 the school site and buildings at No. 38, Red Cross Street, London, E.C., for the erection of a station.

**Memorials to Keats and Lamb** were unveiled recently in the entrance hall of the Passmore Edwards Free Library, Edmonton, by Mr. Frederick Harrison. They consist of medallion portraits of the two men of letters.

**The Restoration of North Creake Church** has been accomplished at a cost of about £2,000. A new marble floor has been laid in the chancel. A carved oak chancel screen, new panels in the chancel walls, and a carved canopy to the font have been added.

**Leeds Builders' Exchange Club.**—The committee of the Leeds Builders' Exchange Club have leased more commodious premises in a new block of buildings opposite the Corn Exchange. Since the establishment of the club some six or seven years ago the membership has steadily increased until it has reached considerably over 300.

**Holy Trinity Church, Bishops Stortford.**—Messrs. J. L. Glasscock and Sons' estimate for the enlargement of this church is, for the extension of the nave, £738; for the erection of a new clergy and choir vestry, £229. The order has been given for the extension of the nave, and the work commenced. Sir Arthur Blomfield and Sons are architects for the above.

**Memorial to Blake, the Painter-Poet.**—A memorial is to be placed on the walls of the Lambeth Central Library in memory of William Blake. It includes a medallion of Blake from the painting by Phillips in the National Portrait Gallery, and, in bas-relief, Blake's own design, "Death's Door," which he made for Blair's "Grave." The work will be placed in the hands of Messrs. Nicholls Bros., and the unveiling ceremony will take place in about a month's time.

**Edinburgh Architectural Association.**—The annual meeting of the Architectural Association was held on May 3rd in the Royal Institution—Mr. T. Ross presiding. The following office-bearers were elected:—President, Mr. James Bruce, W.S.; past president, Mr. Thomas Ross; vice-presidents, Mr. H. F. Kerr and Mr. John Watson; secretary, Mr. Thomas Fairweather; and treasurer, Mr. John Johnstone. The president, in his retiring address, said it would be a desirable thing for the Architectural Association and the Architectural Society (the junior society) to amalgamate.

**Memorial Window to the Duchess of Teck.**—The dedicatory service of the stained glass window in the parish church on Kew Green took place recently. The stained glass of the new window contains in the further light a life-size figure of St. Peter with the Keys, and, in the nearer light, St. Paul with the Word of Life and the Sword of the Spirit. Below the figure of St. Peter is a representation of the scene recorded in the sixteenth chapter of Matthew: "And I will give unto thee the keys of the kingdom of heaven, and whatsoever thou shalt bind on earth shall be bound in heaven, and whatsoever thou shalt loose on earth shall be loosed in heaven." Below the figure of St. Paul is similarly placed the scene of his conversion in Acts ix.



## Under Discussion.

### EDINBURGH ARCHITECTURAL SOCIETY.

"Notes on Romanesque and Byzantine churches in S.E. Italy," was the title of a lecture by Mr. F. W. Deas, M.A., delivered on April 26th, before the above society. Mr. Alfred Greig, vice-president, occupied the chair. After an historical sketch and description of the province of Apulia, typical mediæval churches of the district were discussed. The charm of the work in question was largely due to its being a blending of Romanesque, Byzantine, Saracenic and Norman elements. Many complete exteriors remain, but interiors are scattered and fragmentary. The Basilica is the general type with wide groined aisles and a nave roofed with wood. The E. end is apsidal in most cases. When transepts occur they do not break the aisle walls on plan, but reach the height of the nave. Arcades are heavy with small arches and many pillars. The windows are small, and buttresses, except very flat pilasters at W. fronts, do not occur. This lends to the exteriors great breadth of treatment, contrasting strongly with the rich carving occurring here and there. Carved ornament in these churches is remarkably vigorous and beautiful, and is far ahead of the work elsewhere of the same date.

### ARCHITECTURE OF BUSINESS PREMISES.

On Tuesday evening, May 2nd, at 8 o'clock, in the rooms of The Glasgow Architectural Association, the president, Mr. Geo. S. Hill, I.R.I.B.A., in the chair, Mr. Thomas Ramsay read a paper on "Some points in the erection of a modern office block." In his introductory remarks the author said a building of this class was erected in the first place with the specific purpose of making money for its owners, with occasionally the further purpose of serving as an advertisement. The requirements necessary to allow of its doing so, the author considered to be good situation or site, ease of access, good light, maximum of rental area, ease of re-arrangement to suit tenants, and the minimum of cost, consistent with true economy. The author enlarged on these several requirements, pointing out among other things the necessity for the introduction of a certain amount of fire-resisting, if not fireproof material in the construction, and the absolute necessity of good light, this latter requirement, in his opinion, considerably affecting the money-making capacity of the block.

### MOTORS.

At a meeting of the Society of Engineers, held at the Royal United Service Institution, Whitehall, on May 1st, Mr. John C. Fell, president, in the chair, a paper was read on "Petroleum Motor Vehicles" by Mr. James D. Potts. The author first referred to the prejudicial effects upon road locomotion which were brought about by early prohibitory legislation, which was continued until 1896, when the Locomotives on Highways Act came into force. He then described in approximate chronological order the various types of petroleum road vehicles, commencing with the earliest known efforts to solve the problem of road locomotion by vehicles in which the propelling agent was the power produced by an explosion or internal combustion engine. The simpler, the Hardaker, the Benz, the Butler, the Roots and Venables, the Bollee, the De Dion, and the Petter petroleum motor vehicles of various dates and types were described, and their comparative merits and demerits pointed out. By showing the different stages of progress of some vehicles, the author indicated the lines along which the development of the petroleum motor vehicle had proceeded. A comparison was made of the respective running costs of petroleum oil and petroleum spirit vehicles. The author stated that, taking the average of several of the best known petroleum spirit vehicles, the fuel cost per B.H.P. was found to be about six times greater than that of the author's petroleum oil vehicles.

## New Companies.

### Proprietors of the Central Exchange Buildings, Limited.

This company was registered on April 15th, with a capital of £250,000 in £1 shares (of which 100,000 are 5 per cent. Cumulative Preference) to acquire the Central Exchange Buildings, situate in, and bounded by, Grey Street, Grainger Street, and Market Street, Newcastle-upon-Tyne, to acquire the undertaking of H. Engel and Company, Limited, to enter into an agreement with Edmund C. Wheeler, and to carry on the business of land and property owners and agents, licensed victuallers, hotel keepers, theatre and music hall proprietors, builders, contractors, &c. The number of the Directors is not to be less than three nor more than eight. The first are: William J. Sanderson, gentleman, of Heathdale, Gosforth, Newcastle; Thomas W. Lovibond, brewer, of West Jesmond House, Newcastle-on-Tyne; Joseph Cook, iron manufacturer, of North Biddick Hall, Washington, co. Durham; Edmund C. Wheeler, stockbroker, of 31, Westgate Road, Newcastle-on-Tyne; and James W. Ellis, iron merchant, of 40, Dean Street, Newcastle-on-Tyne. Qualification, £1,000. Remuneration, as the company may decide.

### Measures Brothers & Co., Limited.

This well-known iron and steel merchants' business was offered to the public last Tuesday, the 9th inst. The share capital consists of £285,000 divided into 75,000 5½ per cent. preference shares of £1 each, £210,000 ordinary shares of £1 each, and £75,000 4½ per cent. First Mortgage Debenture Stock. The profits, it is stated, are enough to pay 10 per cent. on the Ordinary shares after all expenses are paid. The business consists largely in the manufacture and sale of iron girders, joists, roofs, bridges, tanks, rails, and similar articles, for which the firm has obtained a world-wide reputation, the customers on the books numbering between 6000 and 7000, including the British and Foreign Governments, H.M. Admiralty, the War Office, Post Office, Crown Agents for the Colonies, Railway Companies, and many Contractors and Builders in a large way of business.

### London and Brighton Brick, Tile, and Terra-Cotta Company, Limited.

This company was registered on April 18th, with a capital of £50,000 in £100 shares, to carry on the business of brick, tile, pottery, pipe, and terra-cotta makers, and to dig, raise, get, buy, sell, and deal in clay, loam, stone, sand, brick-earth, lime, and all kinds of building materials. The first subscribers are:—Henry Partridge, J.P., Castle Hill, Bletchingley, Surrey, 50 shares; Henry A. Barclay, J.P., Underhills, Bletchingley, Surrey, 50 shares; Francis H. Barclay, M.A., The Warren, Cromer, 50 shares; Robert L. Barclay, banker, 54, Lombard Street, E.C., 20 shares; Edward E. Barclay, M.A., J.P., Brent Pelham Hall, Herts, 25 shares; Charles C. Macrae, barrister, 4, Bank Buildings, E.C., 50 shares; Hugh G. Barclay, banker, Colney Hall, Norwich, 1 share. The number of the directors is not to be less than three nor more than five. The subscribers are to appoint the first. Qualification, £250. Remuneration, as the Company may decide.

### William Moss and Sons, Limited.

This company was registered on April 24th with a capital of £25,000 in £1 shares, to acquire, take over as going concerns, and carry on the business of builders and contractors carried on by William Moss and Charles Moss at Loughborough, Leicestershire, under the style or firm of "W. Moss and Sons," and the business of plumbers, glaziers, and gasfitters now carried on by Alfred Swindall and Alan Moss at Loughborough, under the style of "Swindall and Moss," and to enter into an agreement with the said four vendors. The first subscribers (each with one share) are—

Charles Moss, 39, Baxter Gate, Loughborough, builder; Alan Moss, 65, Toothill Road, Loughborough, plumber; Alfred Swindall, 10, Swan Street, Loughborough, plumber; Wilfred Moss, 3, Burton Street, Loughborough, solicitor; George F. Pickering, 73, Russell Street, Loughborough, manager; Harry Chambers, Thorpe Lane, Loughborough, bricklayer; Percy J. Moss, 17, High Street, Loughborough, butcher. The number of the directors is not to be less than two, nor more than three. The first are:—Charles Moss (with £350 per annum), Alan Moss (with £250 per annum), and Robert Moss (with £200 per annum). Qualification, £500.

### Carlisle Estate Company, Limited.

This company was registered on April 24th with a capital of £50,000 in £10 shares (of which 70 are Founders'), to enter into an agreement with Edwin J. Castiglione, Walter P. Gibbings, Kighley J. Hough, Frederic R. Sewell, Alexander Thomson, David Thomson, and John Wood, to acquire any lands and buildings in Cumberland or elsewhere, and to carry on the business of builders, contractors, decorators, builders' merchants, brick, tile and terra-cotta makers, house agents, &c. The first subscribers are: Frederic R. Sewell, Brandlinghill, Cockermouth, colonel, 1 share; John Wood, 18, Bank Street, Carlisle, civil engineer, 1 share; Alexander Thomson, Barwise Court, Carlisle, plumber, 1 share; David Thomson, Barwise Court, Carlisle, plumber, 1 share; Edwin J. Castiglione, Chatsworth Square, Carlisle, land agent, 1 share; Walter P. Gibbings, 31, Lowther Street, Carlisle, surveyor, 1 share; Kighley J. Hough, 34, Fisher Street, Carlisle, solicitor, 1 share. The number of the Directors is not to be less than three nor more than five. The first are: Edwin J. Castiglione, Frederic R. Sewell, Alexander Thomson, and John Wood. Qualification, £500. Remuneration, as the company may decide.

### Argyle Street and Wellington Street Property Company Limited.

This company was registered at Edinburgh on April 28th with a capital of £40,000 in £1 shares, to acquire certain heritable subjects in Wellington Street, Argyle Street, and Holm Street, Glasgow, and to purchase, lease or otherwise acquire and deal with any lands, buildings, rights, heritable property and real estate in Scotland. The first subscribers (each with one share) are: Robert Balfour, 9 and 11, Wellington Street, Glasgow, cabinet maker; R. Thompson, Govan Shipbuilding Yard, Glasgow, shipbuilder; John Bennie, Auldhousefield, Pollokshaws, engineers; Mathew Mitchell, 59, St. Vincent Street, Glasgow, C.A.; Joseph Patrick, 203, West George Street, Glasgow, C.A.; Alexander Russell, 175, West George Street, Glasgow, writer; and Hugh Duncan, 175, West George Street, writer. The number of directors is to be three. The first are John Bennie, R. Thomson, and Robert Balfour. Qualification twenty shares. Remuneration as fixed by the company.

### Jesmond Syndicate, Limited.

This company was registered on May 2nd, with a capital of £10,000 in £1 shares, to purchase for investment or resale, and to traffic in lands and buildings in the City of Newcastle-upon-Tyne or elsewhere, and to carry on the business of builders, contractors, decorators, builders' merchants, brick, tile, and terra cotta manufacturers and merchants, carriers, house agents, &c. The first subscribers (each with one share) are: Edward H. Dowson, 54, Juliet Street, Newcastle, clerk; Fred. H. Bell, Cheltenham House, Heaton, Newcastle, clerk; John E. Liniker, 102, Croydon Road, Newcastle, clerk; William Jordan, 44, Byker Street, Newcastle, accountant; Charles A. Marshall, Romulus Terrace, Gateshead, secretary; L. Laing, 101, Harle Street, Mount Pleasant, Gateshead, surveyor; Charles C. Morton, 22, Ridley Villas, Newcastle, accountant. Registered without Articles of Association. Registered office, 52, Dean Street, Newcastle-on-Tyne.



### English-Foreign Estates and Property Development Company, Limited.

This company was registered on April 27th, with a capital of £30,000 in £1 shares (of which 3000 are founders'), to acquire, take over, and develop the freehold estate and castle of Cestas, near Bordeaux, France, to establish a hotel-club at the Castle of Cestas, and to carry on the business of club proprietors, refreshment caterers, hotel keepers, licensed victuallers. The number of directors is not to be less than two nor more than seven. The first are: M. M. I. Barnard d'Attanoux and le Vicomte de Constantin. Qualification, one share. Remuneration, £600 per annum divided between them.

### CURRENT PRICES.

FORAGE.			
Hay, best	per load	£ 3 0 0	2 8 0
Straw, best	per load	£ 3 0 0	2 8 0
Beans	per gr.	1 6 0	1 18 0
Straw	per load	1 4 0	1 18 0

OILS AND PAINTS.			
Castor, French	per cwt.	1 5 1	—
Colza, English	per cwt.	1 2 6	—
Copperas	per ton	2 0 0	—
Kerosine, water white	per cwt.	1 5 0	1 15 0
Lard	per cwt.	1 9 0	—
Linseed	per cwt.	0 18 3	0 18 4
Neatsfoot	per gal.	0 2 6	0 4 0
Paraffin	per cwt.	0 10 2	0 19 0
Pitch	per barrel	0 8 0	0 8 6
Tallow, Town	per cwt.	1 3 3	—
Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 14 3	1 14 6
Glue	per cwt.	1 19 6	2 18 0
Lead, white, ground, carbonate	per cwt.	0 19 0	—
Do. red	per cwt.	0 17 0	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	3 10 6	—
Do. sticklac	do.	2 2 6	2 15 0
Pumice stone	do.	0 8 9	—

METALS.			
Copper, sheet, strong	per ton	86 0 0	—
Iron, bar, Staffs. in London	do.	7 5 0	8 10 0
Do. Galvanised Corrugated sheet	do.	12 0 0	12 10 0
Lead, pig, Spanish	do.	14 5 0	—
Do. English common brands	do.	14 8 9	—
Do. sheet, English, 3lb.	do.	16 10 0	—
Do. per sq. ft. and upwards	do.	14 10 0	—
Do. pipe	do.	17 5 0	—
Nails, cut clasp, 3in. to 6in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Straits	do.	117 7 6	117 17 6
Do. English ingots	do.	116 0 0	117 0 0
Zinc, sheets, English	do.	27 10 0	28 10 0
Do. Vieille Montaigne	do.	31 0 0	—
Do. Spelter	do.	28 10 0	28 16 3

TIMBER.			
Soft Woods.			
Fir, Dantzic and Memel	per load	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Laths, log, Dantzic	per fath.	4 10 0	5 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Deals, Archangel 2nd & 1st per P. Std.	do.	10 15 0	18 10 0
Do. do. 4th & 3rd	do.	8 5 0	8 15 0
Do. do. unsorted	do.	7 5 0	8 5 0
Do. Riga	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow	do.	14 15 0	—
Do. do. 2nd	do.	12 0 0	—
Do. do. Unsorted	do.	8 0 0	10 10 0
Do. do. White	do.	7 15 0	9 15 0

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Deals, Swedish	do.	8 10 0	15 5 0
Do. White Sea	do.	12 5 0	—
Do. Quebec Pine, 1st	do.	20 15 0	22 0 0
Do. do. 2nd	do.	12 0 0	—
Do. do. 3rd &c.	do.	6 15 0	8 0 0
Do. Canadian Spruce, 1st	do.	7 15 0	9 0 0
Do. do. 3rd & 2nd	do.	6 15 0	7 15 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	do.	7 10 0	8 15 0
Flooring Boards, 1 in.	per square	0 11 3	—
Do. 2 1/2	do.	0 10 0	0 10 6
Do. 3rd &c.	do.	0 9 0	—

### HARD WOODS.

Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 12 6	3 17 6
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, lin., Cuba	per ft. sup.	0 0 4	0 0 4
Do. Honduras	do.	0 0 3 7/8	—
Do. Tobasco	do.	0 0 4 21/22	—
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price	per ft. sup.	0 0 5 1/8	—
Do. Cango, Honduras	do.	0 0 4 1/8	—
Do. St. Domingo	do.	4 23/32—6 23/32	—
Do. Tobasco	do.	4 23/32—5 21/32	—
Oak, Dantzic and Memel	per load	3 5 0	3 5 0
Do. Quebec	do.	4 12 6	5 0 0
Teak, Rangoon, planks	do.	9 15 0	14 5 0
Wainscot, Riga (Bank)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub. ft.	0 2 3	0 5 6

### COMING EVENTS.

#### Wednesday, May 10.

EDINBURGH ARCHITECTURAL SOCIETY.—Mr. J. Ednie, on "Furniture."

SOCIETY OF ARTS.—Ordinary Meeting at 8 p.m.

SURVEYORS' INSTITUTION.—Annual Dinner, King's Hall, Holborn Restaurant. 6.30 p.m.

#### Thursday, May 11.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—The Second Conversation at the Galleries of the Royal Institute of Painters in Water-Colours, Piccadilly. Also Exhibition of Water-Colour Painting.

CARPENTERS' HALL, LONDON WALL (Lectures on Carpentry and Joinery).—Professor T. Roger Smith on "Temporary Structures: Floors, Shoring." 7.30 p.m.

ROYAL INSTITUTION.—Mr. Lewis F. Day on "Embroidery." II. 3 p.m.

INSTITUTE OF BUILDERS.—Dinner, Marble Salon, Grand Hotel, Trafalgar-square. 6.30 p.m.

#### Friday, May 12.

ARCHITECTURAL ASSOCIATION.—Dr. G. W. Poore on "Soil and Aspect in Relation to the Dwelling House." 7.30 p.m.

#### Saturday, May 13.

INSTITUTION OF JUNIOR ENGINEERS.—Visit to the Royal Arsenal, Woolwich. Train leaves Charing Cross 9.20 a.m.

#### Monday, May 15.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Mr. H. H. Statham on "The Architectural Element in Engineering Work." 8 p.m.

#### Wednesday, May 17.

SOCIETY OF ARTS.—Ordinary meeting at 8 p.m.

#### Thursday, May 18.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—Mr. Henry Hawley on "Lithography—past and present."

INSTITUTION OF ELECTRICAL ENGINEERS.—Meeting at 8 p.m.

### TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

ABER.—For the erection of forty houses at Aber, Bargoed, for the Powell Duffryn Steam Coal Company, Limited. Mr. Geo. Kenshole, architect, Duffryn House, Ystrad Mynach:—  
T. Evans £10,540 0 Jones Bros. £8,026 10  
Jenkins and Sons 8,270 0 J. C. Richards 7,880 10  
D. W. Rosser 8,265 0 Williams and Sons 7,840 0  
Marsh and Wride 8,210 0 Davies Bros. 7,613 0  
W. Harris 8,107 0 James and Sons  
Lewis Davis 8,075 0 Pencraig, Rhon.  
Morgan and Sons 8,045 13 adda Valley\* 7,555 0  
\*Accepted.

ACTON.—For the erection of a girls' school in Creffield-road, Acton, for the Managers of Aske's Haberdashers' Schools. Mr. Henry Stock, architect. Quantities by Messrs. Widnell and Trollope:—  
Balaam Bros. £23,555 Bowers and Co. £21,300  
Ferris Bros. 23,506 H. Flint 21,184  
Akers and Co. 23,415 Godson and Sons 20,824  
A. Porter 22,777 Gough and Co. 20,798  
J. Marsland 22,775 Willmott and Sons 20,798  
Willcock and Co. 22,354 T. J. Messom 20,577  
W. Robinson 21,650 Hockley and Sons 20,574  
B. E. Nightingale 21,585 Chessum and Sons 20,036  
Turtle and Appleton 21,530 Patman and Fotheringham\* 19,911  
J. Christie 21,400  
\*Accepted.

BISHOPS STORTFORD.—Accepted for the erection of Baker's Shop, for Mr. W. Glascock, London-road. Alured Brett, architect:—  
Charles Martin £300

CARDIFF.—For the erection of school, Virgil-street, Grangetown, manual instruction centre and caretaker's house, &c., for the School Board. Messrs. R. and S. Williams, architects, Borough Chambers, Wharton-street, Cardiff. Quantities by architects:—

Shepton and Son	£26,720 0 0
D. Thomas and Co.	26,520 0 0
Price Bros.	26,135 0 0
Evans Bros.	24,310 13 7
W. H. Ingleton	24,191 1 0
W. Thomas and Co.	24,030 0 0
James Allan	23,906 6 6
Knox and Wells	23,750 0 0
W. Symonds and Co.	23,500 0 0
Lathey and Co.	23,348 0 0
Chubb and Co.	23,100 0 0
D. Davies	22,875 0 0
Turner and Sons	22,516 0 0
C. C. Dunn (accepted)	22,200 0 0

[All of Cardiff.]

GREAT YARMOUTH.—For additions to Northgate School, for the School Board. Messrs. Bottle and Olley, architects, Queen-street, Great Yarmouth. Quantities by the architects:—

G. W. Beech	£2,255	J. S. Read	£1,887
J. Rand	2,210	J. Moore	1,874
A. E. Bond	2,150	J. Ward, North Quay*	1,874
F. Grimble	1,905		
Carter and Wright	1,903		

Plumbing.  
R. A. Eastoe £143 17  
R. H. Tooley, North Quay\* 116 0  
\*Accepted.

ILFORD (Essex).—For stabling, with harness-room and fodder lofts, stores and manager's residence, with office, for Messrs. Thorne Bros., brewers, Nine Elms, London. Messrs. Douglas Young and Co., architects, 51, Coleman-street, E.C. Quantities supplied:—

Stables paved with Blue Staffordshire Paving.	Add. if Stables paved with Adamantine Clinkers.
Dowsing and Davis	£2,555 0 £105 0
F. Wilmott	2,490 0 97 0
Turtle and Appleton	2,380 0 35 0
W. H. Cole	2,236 0 16 0
H. Pridmore	2,210 0 13 0
F. R. Blaxton	2,207 0 34 0
Goldier and Gregory	2,207 0 11 0

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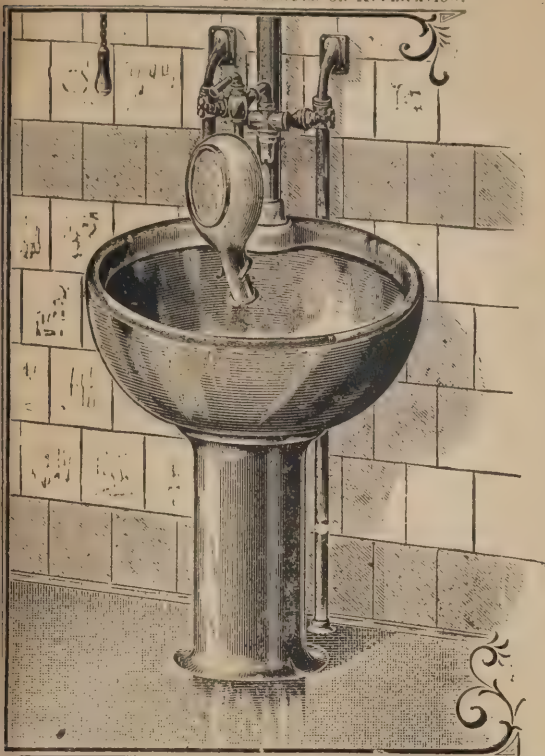
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This system of washing bedpans, &c., is very simple, cleanly, and inoffensive. In the act of washing, the hands need not touch the pan, it is only necessary to turn round the swivel arm to see that pan is perfectly clean before lifting it off spray hook.

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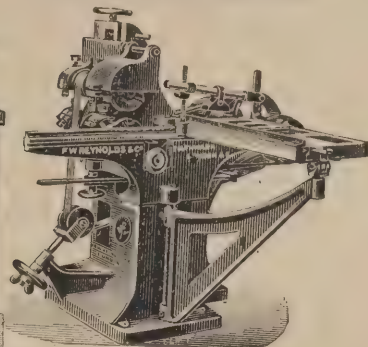
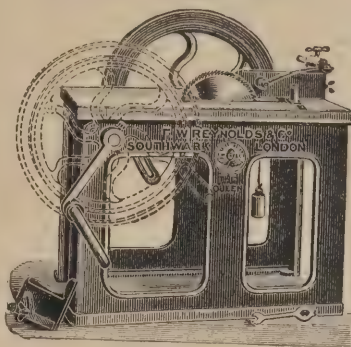
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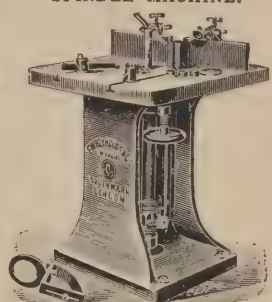
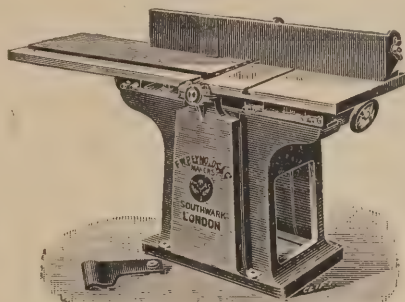
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**LEYTON.**—For the erection of two shops at Leyton, Essex, for Messrs. Savill Bros., Ltd. Messrs. Flaywood and Miles, architects, 14, Southampton Street, Strand. Quantities by Mr. Alfred Howard, The Outer Temple:—  
J. Smith and Son ... £3,345 | G. J. Hosking ... £3,987  
S. Parmenter ... 3,299 | C. North\* ... 2,828  
\*Accepted subject to slight alteration.

**LONDON, E.**—For proposed new billiard-room, &c., 117, Barking-road, E., for Mansfield House, University Settlement. Mr. H. C. Lander, A.R.I.B.A., architect, Effingham House, Arundel Street, Strand, W.C. Quantities by Mr. J. T. Carew, 22, Surrey-street, Strand, W.C.:—  
W. M. Norton, Stratford, E. ... £452 10  
W. J. Maddison, Canning Town ... 490 0  
H. M. Dove, Euston Road (accepted) ... 370 0

**LONDON.**—For new premises at Royal Wharf, Town-meed-road, Fulham, for Messrs. Goldman, Phillips, and Jay, Mr. George Ashby Lean, architect, Palace Chambers, Westminster:—  
Patman and Fother-ingham ... £3,976  
Wall and Co. ... 3,950  
Adamson and Sons ... 3,579  
Howell J. Williams ... £3,548  
F. Jenkins ... 3,540  
L. H. R. Roberts ... 3,489

**LONDON.**—For rebuilding the "Jolly Gardeners" beer-house, York-road, Battersea. Mr. F. A. Powell, architect, 34, Kennington-road:—  
Burman ... £1,669  
Parsons ... 1,645  
W. Smith ... 1,625  
W. Smith ... £1,579  
W. Hammond\* ... 1,490  
\*Accepted.

**LONDON.**—For the erection of engine-house and chimney shaft at Northern Hospital, for the Metropolitan

Asylums Board. Messrs. Pennington and Son, architects:—  
Cross and Co. ... £3,470 7 4 | General Builders, Ltd. ... £3,130 0  
Merredew & Wort ... 3,312 0 0  
Wall and Co. ... 3,281 0 0 | J. Appleby, Corn-  
Chessum & Sons ... 3,236 0 0 | wall-road, S.E.\* ... 2,795 0  
\*Accepted with variations at £2,620.  
[Architect's estimate, £1,700.]

**LONDON.**—For the erection of a boys' school in West-bere-road, West Hampstead, for the Managers of Aske's Haberdashers' Schools. Mr. Henry Stock, architect. Quantities by Messrs. Widnell and Trolope:—  
Balaam Bros. ... £19,079  
P. and H. F. Higgs ... 39,669  
R. E. Nightingale ... 29,745  
Higgs and Hill ... 29,200  
Smith and Co. ... 28,900  
J. Perkins ... 28,850  
Wilcock and Co. ... 28,411  
Godson and Son ... 28,383  
Rowers and Co. ... 28,221  
Gregory and Co. ... 28,187  
Akers and Co. ... £28,073  
Turtle and Appleton ... 28,000  
Rudd and Son ... 28,000  
Patman and Fother-ingham ... 27,591  
Hockley and Son ... 27,449  
Chessum and Sons ... 26,990  
Kirk and Randall ... 26,944  
Gough and Co.\* ... 25,861  
\*Accepted.

**LONDON.**—For reinstatement after fire of warehouse, 12, Finsbury-street, E.C., for the executors of John Mirams. Mr. G. Gordon Stanham, architect, 100n, Queen Victoria-street, E.C.:—  
F. and H. F. Higgs ... £1,643  
Kilby and Gayford ... 1,628  
Patman and Fother-ingham ... 1,573  
Turnbull and Son ... £1,450  
J. Greenwood ... 1,371  
J. Appleby, Cornwall-road, S.E.\* ... 1,282  
\*Accepted.

**LONDON.**—For erecting a warehouse, Carey-street, Westminster, for Messrs. Coppin Bros. and Co. Mr. H. W. Budd, architect:—  
Carmichael ... £4,190  
Patman and Fother-ingham ... 3,993  
Snewin Bros. and Co. ... 3,204  
Mowlam and Co. ... £3,129  
Martin, Wells, and Co. ... 3,049  
Brookling ... 2,997  
Bush ... 2,857

**LONDON.**—For the erection of shop and business premises, No. 124, High-street, Clapham, S.W., for Mr. J. A. Taylor. Mr. Herbert Brinsley, architect, 30 and 31, New Bridge-street, E.C. Quantities by Mr. Henry Bushell, 34, New Bridge-street, E.C.:—  
Lyle Manufacturing Company ... £5,915  
Freeman and Son ... 5,915  
J. and C. Bowyer ... 5,293  
John Greenwood ... 5,237  
Holliday and Green-wood ... £5,153  
Woodward and Co. ... 5,100  
Georg Parker ... 4,895  
J. V. Oliver, London\* ... 4,775  
\*Accepted.

**LONDON.**—For rebuilding 125 and 126, Long Acre, for Mr. C. W. Woollard. Mr. E. R. Ruch, architect, 1, Green-ham-buildings, Basinghall-street, E.C.:—  
Bywaters ... £7,394  
Patman & Fothering-ham ... 7,296  
Lawrence and Sons ... 7,129  
Kirby ... 7,050  
A. Bush ... £7,033  
Kilby and Gayford ... 6,835  
Blyton and Sons ... 6,779  
F. G. Minter, West-minster\* ... 6,700  
\*Accepted.

**LONDON.**—For the erection of shops and stabling at High-street, Clapham  
Hoskins ... £4,741  
Godson and Sons ... 4,378  
Faulkner and Sons ... 3,929  
Mr. Francis P. Bacon, architect:—  
Howell J. Williams ... £3,230  
W. Touts ... 3,023

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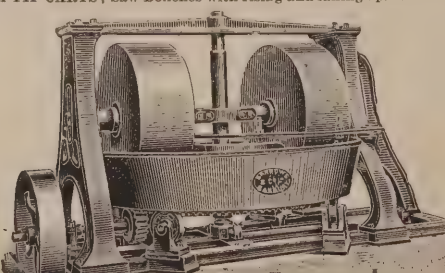

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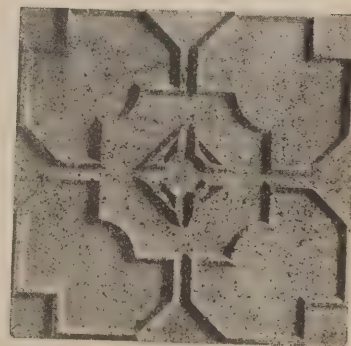
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**LONDON, S.W.**—For the erection of shops and stabling at High-street, Clapham, S.W. Francis P. Bacon, architect:—  
Hoskins ... £4,741 10 | Howell J. Williams £3,250 0  
Godson and Sons ... 4,378 0 | W. Tout ... 3,025 0  
Faulkner and Sons ... 3,920 0

**LONDON.**—For alterations and additions to the "Duke of Cumberland," High-street, Kensington, for Mr. G. L. Mosley. Messrs. W. E. Latchford and Co., surveyors, 51, High-street, Clapham, S.W.:—  
Hibbert Bros., Ltd. ... £2,350 | Barker and Co., Ltd., Kensington\* ... 1,707  
W. R. Williams ... 2,189

**MILLBROOK (Cornwall).**—Accepted for alterations and additions to Dodbrooke House, for E. S. Blight, Esq. Mr. Edgar M. Leest, architect, Public Hall Chambers, Devonport:—  
J. H. Gregory, Devonport ... £103 15

**MILFORD HAVEN (South Wales).**—For the erection of a vicarage at Milford Haven, for the Rev. E. J. Howells. Messrs. Wood and Gaskell, architects, Milford Haven, and No. 1, Finsbury Circus, E.C. Quantities by Mr. Henry Bushell, 33, New Bridge-street, E.C.:—  
K. Cole ... £1,997 | Phelps and Owen, Milford Haven\* ... £1,895  
Cole and Sons ... 1,950

**NORWICH.**—For erecting a house and shop, Magdalen-street, Norwich, for Mrs. H. S. Woodcock. Mr. A. F. Scott, architect, Norwich:—  
Downing and Son ... £1,197 | Scarles Bros. ... £1,037  
J. S. Smith ... 1,057 | Youngs and Son ... 1,028  
T. H. Yelf ... 1,050 | W. S. Daws (accepted) 1,018  
[All of Norwich.]

**RAWTENSTALL (Lanes.)**—For the execution of street works, Dean-lane, for the Corporation. Mr. A. W. Lawson, C.E. Municipal Offices, Rawtenstall:—  
John Moore ... £1,791 7 | P. D. & S. D. Hayes, Stockport\* ... £1,681 10

**WARBOROUGH (Oxon).**—Accepted for additions and alterations to "Oaklands," Warborough, Oxon, for W. C. Benett, Esq. Mr. Herbert Quinton, architect and surveyor, 15, Magdalen-street, Oxford:—  
Messrs. A. Bailey and Sons, Warborough ... £320

**WELLINGTON, SALOP.**—For rebuilding the Lamb Inn, Wellington, Salop, for Mr. Thomas Taylor. C. R. Dalgleish, architect, Wellington and Shrewsbury. Quantities by the Architect:—

Mr. J. Bright, Wellington	£1,859	Deductions.	£280
Mr. Geo. Bickerton, Shrewsbury	3,818		260
Mr. H. Price, do.	3,741		294
Messrs. R. Price & Sons, do.	3,625		252
Mr. A. Roper, Wellington*	3,723		330

**WELLINGTON, SALOP.**—For addition and alterations to Dr. Catwell's House, Wellington. C. R. Dalgleish, architect, Wellington and Shrewsbury. Quantities by the Architect:—  
R. and J. Millington, J. Bright, Wellington\* ... £930

**WELLINGTON, SALOP.**—Accepted for additions to "Sunnycroft," Wellington, for Mrs. Slaney; also building

new entrance lodge and stables. C. R. Dalgleish, architect. Quantities by the Architect:—

Additions to House, A. Roper, Wellington	£1,800
New Stables, A. Roper, Wellington	1,139
Entrance Lodge, A. Roper, Wellington	660

**WESTBURY-UPON-TRYM.**—For the execution of sewage outfall works, for the Barton Regis Rural District Council. Mr. A. P. I. Cotterell, C.E., 7, Baldwin-street, Bristol. Quantities by Engineer:—  
A. J. Beaven ... £18,300 0 0 | Weldon, Birmingham\* ... £12,084 12 11  
A. Krauss ... 15,670 0 0 | Smith & Sonst ... 11,499 14 0  
Meredith ... 14,495 0 0 | J. and T. Binas (informal) ... 10,441 8 10  
Shattock ... 12,733 0 0

**WOLVERHAMPTON.**—For the erection of schools, Gatis-street, for the St. Andrew's School Managers. Mr. E. H. Lynes, architect, Lichfield, Wolverhampton:—  
Willecock and Co. ... £2,850 | H. Gough ... £2,670

**WREXHAM.**—For the re-erection and extension of the Central Store premises, for Mr. W. J. Williams. Messrs. J. Morison and Son, architects, King-street, Wrexham:—  
Wm. Owen ... £2,900 | W. E. Samuel ... £2,360  
H. A. Jones ... 2,670 | Davies Bros.\* ... 2,235  
[All of Wrexham.]

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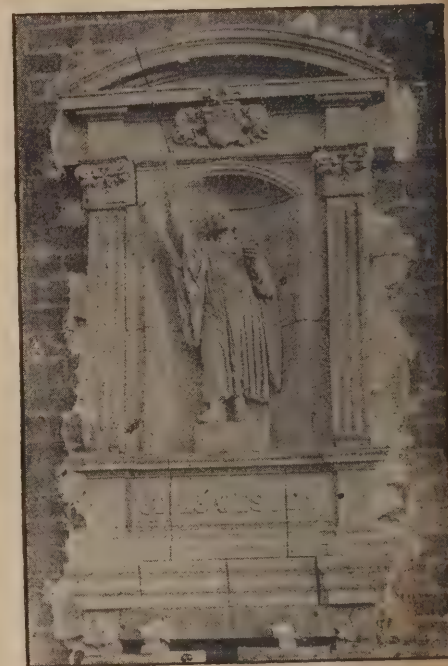
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## SEWAGE DISPOSAL.\*

By D. BALFOUR, M.Inst.C.E., F.G.S.

SINCE the Rivers Pollution Prevention Acts have at length become law, and in general force over the kingdom—equally in England, Scotland, and Ireland—the subject of sewage disposal may properly be said to be of national importance, both in its hygienic and financial aspects. Although finality cannot be applied to any branch of science, it may be, however, generally asserted that the problem of sewage disposal has of late years been tending to a fairly satisfactory solution, alike as regards efficiency, simplicity, and economy as a whole, under the two allied sciences of civil engineering and chemistry. However, the very varied conditions of localities exhibited the necessity of other methods of sewage treatment, so as to afford more reasonable and practicable means for the same, such as the recent and present investigations for the bacteriological purification of sewage. The subject has especially engaged the attention of scientists and legislators since the Rivers Pollution Prevention Act of 1876 down to the present year, with its like-named Parliamentary Bill of 1899. It is not my intention, nor, I dare say, your desire, that I should anywhere exhaustively treat the subject in any of the various processes up to date which have been employed for the purification of sewage. I shall, therefore, now proceed to consider and describe these principal methods in their order, viz., tidal, land, chemical, and bacteriological; and would premise that I am no special advocate of or wedded to any particular system, each locality I consider a study in itself, and that no one system hitherto has been universally applicable. There is no hard and fast line unless so far as the Local Government Board regulations are concerned, and where no loan is required even these regulations do not apply.

### Tidal Methods.

The Rivers Pollution Prevention Act provides that before discharging domestic sewage or trade refuse water into any "stream," the public or private persons responsible shall duly see that "the means used for rendering harmless any sewage matter or poisonous, noxious, or polluting solid or liquid matter falling or flowing or carried into any stream are the best or only practicable and available means under the circumstances."

As regards, however, an outfall into tidal waters—both sea and river—the means practically are greatly simplified by the said Act, which defines that "a stream includes the sea to such extent, and tidal waters to such point as may, after local inquiry and on sanitary grounds, be determined by the Local Government Board, by order published in the 'London Gazette,' save as aforesaid, it includes rivers, streams, canals, lakes, and watercourses," or, to translate the legal phraseology into practical terms, the Act permits the discharge of crude sewage into the sea at extreme low water mark, and into a tidal river with sufficient volume of dry weather flow and tidal rise.

The Local Government Board's report on sewage disposal of 1876, compiled by the late well-known Sir Robert Rawlinson, formerly Chief Inspector of the Local Government Board, and the late Mr. Clare Sewell-Read, M.P., a well-known agriculturalist, provides that "towns situate on the sea coast or on tidal estuaries may be allowed to turn sewage into the sea or estuaries below the line of low water, provided that no nuisance is caused, and that such mode of getting rid of sewage may be allowed and justified on the score of economy."

Sewage in its crude condition may, as a rule, be discharged directly into the sea at low water mark, in a direction which should be decided on after careful float experiments, or into an estuary or mouth of a tidal river. It has been generally necessary in the other por-

tions of a tidal river, excluding altogether the upper reaches, to provide for the crude sewage being simply clarified by either subsidence or chemical precipitation in tanks before discharge into the tidal river. Towns and villages fortunately so situated incur little or no cost for sewage disposal, except where populations are of considerable magnitude. In these latter cases clarification has been obtained by various simple but necessary methods to render the effluents into the tidal river practically innocuous. At the London main sewer outfalls at Barking and Crossness, at each side of the river Thames, clarification has been effected by the use of lime and sulphate of iron, the resultant sludge being conveyed by steam barges sufficiently out to the open sea to quite prevent reflux sludge. The river, according to frequent statutory analysis, is now satisfactorily improved. At Glasgow the sewage has been clarified by the use of lime, alumino-ferri, and coke-breeze tanks, securing a good, clean effluent into the river Clyde, the sludge from which is pressed and disposed of as a manure. Dublin, on the river Liffey, and Newcastle-on-Tyne, I am naturally reminded, both represent still the old state of things. Schemes for the purification of the Liffey have been under consideration.

### Land and Chemical Methods.

The use of land for the treatment of sewage has been in operation in many countries for a considerable period, with altogether satisfactory results, where quantity, quality, construction, and especially management regularly prevail. Land may be said to be the original natural method of sewage disposal. At Edinburgh, the Craigintiny Meadows, 300 acres in area, have been used for 145 years for the continued application of sewage, or, say, since the middle of last century. Though it has been carried on by the landowner, and not yet by the City Council, and that without much skill or outlay, it yields large crops and prices, the latter varying from £25 to £40 per acre for Italian rye grass and permanent meadow grass. The soil was chiefly waste sand, with some clay—both, however, underlying a good black soil of some depth. Four or five crops of grass are cut every season, averaging 3ft. in height, and this is sold to cowkeepers who regularly supply the milk and butter for Edinburgh. Sir Henry Littlejohn, the able Medical Officer of the Scottish Local Government Board and the City of Edinburgh, assures me that no trace of disease has been traceable to the use of the crops or the situation of the sewage farm, which is not very far from large barracks and residential suburbs, the health of which has been carefully watched and found to compare favourably with any part of the city or any barracks in the Kingdom.

On the Continent and in America, land is largely used for sewage purification. Paris, which I again visited last year with my friends Mr. Bechman (city engineer) and Mr. Masson (chief sanitary inspector), possesses 2000 acres of gravel land at Genevilliers, about four miles out of the city. And another farm is in progress at Acheres, in addition to which a considerable quantity of sewage is given to adjoining farmers. Excellent crops and a pellucid effluent brook, with fish therein, are to be seen, and altogether the results are good, the brook being a tributary of the Seine.

Berlin has 11,000 acres of sandy land laid out on the broad, irrigation principle, equally good as regards crops, effluents, and immunity from disease to the workmen (numbering about 1000) and to the locality generally.

I need not add further examples of land treatment, but proceed to briefly explain that it resolves itself into two principal methods, known as broad irrigation and intermittent land filtration.

According to the present Local Government Board Regulations the former method requires one acre of land per one hundred to three hundred population, according to quality of land and nature of sewage, while the second method necessitates one acre per five hundred to one thousand population, and both methods are equally successful, under proper design and management.

Intermittent filtration was originally introduced in 1875, on the recommendation of the Rivers Pollution Royal Commission, and first carried out at Merthyr Tydvil in South Wales, on the banks of the river Taff. These works I visited that year with the late Mr. Bailey Denton, C.E., of London, who was entrusted with the work he so successfully carried out.

The Local Government Board reasonably allow sewers to discharge storm waters, in proper proportions, direct into rivers, while they are also in a similarly augmented volume, for innocuous dilution of the normal sewage. Moreover, the foregoing principles are practically the conclusions and recommendations of the Royal Commission on Metropolitan Sewage Discharge in their report of 1884, in which they specifically recommend intermittent land filtration with some process of deposition or precipitation, and at the same time recommend in new drainage works that the sewage should be "as far as possible separated from the rainfall."

Dr. Percy Frankland, F.R.S., in a paper read at the Institution of Civil Engineers two years ago, stated that "the brilliant results obtained in the filtration of sewage on the intermittent system have naturally led to the investigation of the efficiency of this mode of filtration for the bacteriological purification of potable water." As a somewhat recent and local example of this system, I will briefly refer to works carried out for a town in the North of England with a population of 20,000. The works comprise tanks without the use of chemicals, with 25 acres of porous land, on which the usual succulent crops adapted for sewage treatment are grown. These include osiers, Italian rye grass (usually four crops), mangold wurzel, turnips, celery, cabbage, etc. The sewage, after passing through simple subsidence tanks, flows into the delivery conduits and chambers discharging it on to the land, which is laid in half-acre areas or beds, and used intermittently, in regular rotation, as most indispensable to success. In this manner the land never becomes saturated or sewage-sick, as each successive liquid application is regularly and naturally aerated and oxidised, and subjected, as we now know, to the inherent bacterial action of the soil, and the original porous nature of the soil fully maintained. The under-drainage, "only girting each bed," with aeration shafts, receives the fully treated sewage, and the effluent is discharged into the adjoining brook in such a condition by ordinary regular and systematic attention as to be readily up to the standards of the Rivers Pollution Commission, being regularly without colour, taste, or smell and quite innocuous.

I may add that the Local Government Board's sanction to a loan for such works by Urban or Rural Councils has previously to be obtained by a local inquiry, and that thirty years' repayment is usually granted for the structural works, being about 3 per cent. interest and 5 per cent. with principal; and fifty years' loan is granted for land purchase at about 3 per cent. or 4 per cent. with principal if not arranged on lease, as the Public Health Act, 1875, also provides for. In all cases of loan, it is, up to the present time, indispensable that land (wholly or otherwise partly with chemical or bacterial treatment) must be arranged for and regularly used.

(To be continued.)

**Electric Light for Sleaford.**—The Sleaford Urban Council has decided to apply to the Board of Trade for a provisional order for an installation of the electric light, and to the Local Government Board for sanction to borrow £5,000 for the construction of the necessary plant and works.

**St. John's Church, Inverness.**—The heating having been very unsatisfactory for a long time, it was decided to place the matter in the hands of the specialists, John King Limited, Engineers, Liverpool, who recommend that the old apparatus be entirely removed, and that the church be fitted with their latest improved Hot Water Heating Apparatus; this has now been carried out with the best results.

\* A Paper read before the Sanitary Inspectors' Association on April 8th.



## THE BUILDING TRADES' EXHIBITION.

THE Building Trades' Exhibition, which has been held at the Agricultural Hall during the past fortnight, was brought to a conclusion on Saturday night. As might be supposed, it has aroused a great deal of interest amongst all connected with the building trades, and the attendance of visitors, especially during the last few days, has been very large. This is the more satisfactory as the exhibition has been arranged on practical business lines, the bazaar element, which is so prominent in many so-called trade exhibitions, being reduced to a minimum. It may be presumed, therefore, that the great majority of visitors had some practical connection with one or other of the trades represented, and that the firms exhibiting benefited according. We devoted a considerable amount of space in our last two issues to notices of the various exhibits. A few notices, however, which were crowded out of last week's number owing to want of space, are given below.

### GEORGE HOWSON AND SONS, LIMITED.

This firm has a good selection of sanitary, earthenware, and fireclay goods, including baths, sinks, water closets, lavatory basins, &c. Specialties of the firm are their hospital combination sinks and their domestic combination sinks. The visitor cannot fail to be struck with the beautiful finish and whiteness of the goods shown. Altogether this is one of the cleanest and nicest of the sanitary exhibits in the exhibition. The address of Messrs. Howson is Eastwood Sanitary Works, Hanley.

### SIMPLEX ENGINEERING CO.

The Simplex Engineering Co., of 78, Queen Victoria Street, London, E.C., are showing in the electrical section of the exhibition samples of ironclad resistances or rheostats for regulating or controlling electric current for lighting purposes or motors; also a very neat pattern of small inclosed arc lamps only 14in. in length, and burning from twenty to twenty-five hours with one pair of carbons, which are only 2in. in length. A special feature in this stand is also the simplex clockwork cut-off or switch, which is primarily designed to shut off lights (electric or gas) in shops and show rooms, which it may be advantageous to leave illuminated after usual business hours. The clock has an ordinary alarm clock action, and at whatever hour it is set to operate it performs the function of turning off the lights automatically. It is also designed for other purposes, turning on or turning off water, steam, &c. A model is also shown of a patent commutate facing tool, applicable to any dynamo without removal of armature.

### JOHNSON BROS. LIMITED.

A review of the exhibition would not be complete without calling the attention of readers interested in sanitary developments to the exhibits of Messrs. Johnson Bros. Limited, of Hanley, who are showing (through Mr. G. B. Davies, of Westminster) a varied selection of specialties. One particularly interesting feature to sanitarians is the new Victorian Syphon Closet, which is shown in new royal demi-porcelain, with floral decoration, and in strong fireclay for public institution and hospital work. The main features of this closet are as follows: Large water area, very deep seal, quick flushing, and an impossibility to leave in the basin any foreign matter or dirty water. This is the only closet in the market possessing this very important feature. Assuming, for instance, that a servant empties bucket of slops or dirty water in the basin; immediately the basin automatically (without the chain being pulled) empties out the whole of the contents and refills the basin. Amongst many other types of basins we briefly notice the Lanyon anti-fouling and non-contagious basin, as supplied to Her Majesty's Government for the many departments in our Army and Navy; the Puritas, Invictas, Latestas, and

New Humber suites. The firm's baths, urinal ranges, and other fireclay specialties in connection with their patented flushing apparatus, embody the best and latest practice in the sanitary profession. Messrs. Johnson Brothers claim to be the largest makers of sanitary earthenware goods in the world, employing in their five different factories some 2,500 workpeople.

### MOULE'S PATENT EARTH CLOSET COMPANY, LIMITED.

Messrs. Moule's, of 5A, Garrick Street, London, W.C., showed their patent earth closets. The principle of the earth system is founded on the well-known power possessed by dry earth of deodorising and disinfecting faecal matter: a given quantity of earth, if applied in detail to fresh excrement, destroying all smell and absorbing all noxious vapours. The practical application of this principle consists in the employment of a reservoir of earth, and of a simple and durable form of apparatus suitable for measuring and delivering a regulated charge of earth each time that the closet is used. The system is applicable to most existing closets, to all new closets, and to commodes. Its employment effectually remedies all the evils attendant on common cesspool privies, on water-closets, and on commodes. The earth system is economical. The closets manufactured by the company are available for use with any fine and dry absorbent material. The firm are contractors to the War Office and to the Admiralty. A prize offered by the Liverpool and Manchester Agricultural Society for the closet best adapted in all respects for use under all circumstance, with either earth or ashes, was awarded to this firm.

### A. LEE AND BROTHERS, LTD.

Messrs. Arthur Lee and Brothers, Limited, of Canons March, Bristol, exhibited the Acme patent system of slating and tiling. The object of this invention is to produce slating and tiling in a new and improved manner, so as to procure a better appearance and effect a large saving of labour and material. The system consists in removing a portion of the slates or tiles at opposite corners, and of so placing the slates or tiles that a perfect lap is obtained on all sides of them. Messrs. Lee and Brothers, Limited, have certainly attained their object in a very satisfactory manner. They also had a comprehensive exhibit of roofing slates.

### THE NORTON STONE AND CONCRETE, CO.

This firm exhibited samples of slag from the Tees Bridge Slag Crushing Works, Stockton-on-Tees, and artificial stonework from the Norton Slag and Concrete Works. A special feature of the stand was Brown's patent liquid and air-tight "perfect" joint for sewer and drain pipes. This joint provides for a solid band of Portland cement, so arranged and run into a specially prepared channel as to effectively prevent either liquid or air passing into or out of the sewer, as well as forming a perfect key, thus preventing any slipping of joint should the ground subside. The cement is run into this channel in a liquid form through holes suitably and conveniently made in the socket end of the pipe. The difficulty hitherto has been in obtaining a solid band of cement in consequence of the liquid cement running out of the joint into the pipe, as well as into the trench. With this joint considerable economy is effected in the laying, the only operation being after the pipes arrive on the site to place the felt washer in the socket, wrap a length of gaskin or spun oakum round the pipe, lower the pipe into its position in the trench, run the liquid cement into the holes provided, and a perfect joint is the result. The firm's address is Stockton-on-Tees, and Mr. John Burnjis the managing director.

### STANLEY BROS., LTD.

An exhibit which cannot well be overlooked is that of Messrs. Stanley Bros., Ltd., of Nun-eaton. This firm has erected a substantial

structure which ingeniously displays the many varieties and colours of their glazed bricks. In addition to their salt glazed and enamelled bricks, the firm exhibit a selection of red and buff chimney pots, sanitary pipes and connections, paving and roofing tiles, garden vases, &c. Some perforated tiles for breweries are a speciality of the firm, and these seem well adapted for their purpose.

### THE ANAGLYPTA COMPANY LIMITED.

The Anaglypta Company Limited, of 92 and 93, Great Russell Street, London, W.C., and Darwin, is a firm well known to architects and the trade generally. At the exhibition they exhibited several specimens of their work, all of which showed the excellence of the work produced by the firm. Their stand was very tastefully decorated. The ceiling of the stand displayed to advantage some very high relief decoration in the Italian style. One design in particular we noticed; this was a scroll 2ft. 9in. deep. Several fillings and high relief friezes of very artistic design were prominently exhibited at the stand, which fully illustrated the decorative wealth and the innumerable beautiful colour effects of anaglypta. The decorations are not only beautiful; they are sanitary and very durable.

### JOHN KNOWLES AND CO.

The "Anti-Vap" street gully was one of the features of this stand. Among the many advantages claimed for it may be mentioned the fact that it has a large trap with a comparatively small surface of water exposed, so that in times of long drought the drain is not unsealed by evaporation. Messrs. Knowles and Co., of 38, King's Road, St. Pancras, London, N.W., are the agents for the fireproof granite plaster. This is intended to displace ordinary lime plaster. It is very simple to prepare, and when applied presents a smooth, hard surface. The "vitrifine" stoneware pipes which they showed will stand a remarkably high pressure without any signs of sweating. Among the various sanitary appliances exhibited the "Aquarius" closet was conspicuous. It is necessary with this closet to have only one joint inside dwelling, and the outlet can be turned in any direction.

### T. BRISTOW AND BROTHERS.

Sample pieces of flat channeling, of various gauges of pitching and setts and cubes, were shown on this stand. Sandstone was also exhibited. The kerbs are straight and circular, in Denner Hill, Wycombe, or Heath stone. It is claimed for this stone that it is durable and reliable, has a clean white colour, and is not affected by the severest weather. It has been extensively used as a building stone in the construction of Windsor Castle and many other places of note. The address of the firm is Speen, Prince's Resborough, Bucks.

### W. H. MURRAY AND CO.

This firm has a good display of stone and marble of all kinds. A speciality of theirs is the "Ronez" granite, which is obtained from Jersey. From this granite a tram of almost any size can be obtained; one measuring 2ft. by 1ft. by 4ft. is shown at the stand; specimens of kerbing 12in. by 6in. and 12in. by 8in. are also shown. Owing to the large sizes obtainable the "Ronez" granite is specially suitable for architectural and engineering, as well as for paving purposes. Messrs. Murray, whose address is 48, King William Street, E.C., are also showing some excellent specimens of polished stone and granite.

### THE QUARRY PUBLISHING COMPANY, LTD.

The exhibit of the Quarry and Builders' Merchant takes the form of a museum of specimens of all kinds of bricks and building stones, neatly arranged and ticketed. As the collection is remarkably comprehensive and includes specimens from all parts of the country, it is likely to be of permanent value when established in the offices of our contemporary at 5, Arundel Street, which, we understand is its ultimate destination.



## Masters and Men.

**Manchester and Liverpool Joiners** have succeeded in obtaining an advance in wages from 9d. to 9½d. per hour.

**Wigan Painters** went on strike last week, the masters having declined to accede to a demand for an advance in wages and a settlement of the apprentice question. Over 200 men are affected.

**Three hundred Gosport Labourers** struck last week for an advance of a penny per hour. The works principally affected are those in connection with the fortifications, contracts for which are held by local builders.

**Strike at Newport (Mon.).**—Last Saturday 1200 men employed by Newport builders gave two hours' notice at eleven o'clock, and intend staying out until the employers concede an advance of ½d. per hour all round, and several alterations in working rules.

**Belfast Joiners,** to the number of 238, have returned to work after being on strike for one week. It appears that the Belfast Builders' Association endeavoured to introduce a new set of rules, which the joiners refused to accept, as they state that the change would involve the reduction of their present wages by a penny per hour.

**Lock-out at Selby.**—The Selby branch of the Yorkshire Federation of Master Builders have decided to lock out the labourers, whose demand for 6d. per hour they consider exorbitant. Between thirty and forty men will be affected. The masters expressed their willingness to give 5½d. per hour, but this the men, through their officials, refused to accept.

**The Scottish Carters' Association** have issued a circular to contractors, submitting the following proposal regarding payment for stable duty on Sundays:—(1) That 6d. be paid by employers to carters for each horse attended on Sundays; and (2) that the carters in each stable elect how many horses they will attend, and be paid at the rate of 6d. each horse, but no carter to attend more than ten horses.

**Huddersfield Carpenters and Joiners.**—The operative joiners and carpenters of Huddersfield are still on strike. Another demand has recently been sprung on the masters. The operatives who have frequently to go to other towns on contract work, now ask that when at work in such towns they shall receive the rate of pay prevailing there. In the event of the pay being lower than at Huddersfield, they ask that they shall then receive the sum paid on ordinary work at home. Altogether about 170 men are on strike.

**Masons' Strike at Cardiff.**—A large number of the members of the Operative Society of Stone Masons struck work recently. The strike is owing to the members of the Cardiff Master Builders' Association refusing to amend the working rules and to grant a ½d. an hour advance in wages. The men's chief demands are (1) an increase of ½d. an hour, 8½d. to 9d.; (2) an hour for dinner all the year round, instead of half an hour as has been the rule during the winter months; (3) that work shall cease on Saturdays at noon instead of at one o'clock. There is also a point as to the interpretation of a rule relating to the fixing of dressed stone, which the men claim should always be done by a bona fide mason.

**The Masons at Grimsby.**—A meeting of the Whitby branch of the Operative Society of Masons was held recently, Mr. R. Bulmer presiding. The men have been under three months' notice from the employers, which notice expired on the 1st inst. The delegates'

report stated that the employers, after only partial suspension of work, had met the demands of the men very fairly and courteously, and had conceded the ½d. per hour advance asked for (which would raise the pay per hour from 7½d. to 8½d. per 49½ hours' week), and had also instituted the hour system instead of the old day system. The meeting unanimously expressed satisfaction with the action of the employers, and work will continue as usual.

**Dispute in the Potteries.**—The dispute between the Master Builders' Association of the Potteries and Newcastle-under-Lyme and the local carpenters and builders was referred to Judge Jordan for arbitration. The carpenters and joiners had given notice asking for a rise in wages from 8½d. to 9d. per hour, and for a reduction of the number of working hours. They also asked for the abolition of piecework under Rule 7. Judge Jordan certifies that Rule 1, which refers to hours, shall read as follows:—"The hours of work in the summer months shall be these—from the 1st of March to the 31st of October inclusive from 6.30 a.m. to 5.30 p.m., with one hour and a half allowed for meals for five days of the week, and from 6.30 a.m. to 12.30 p.m. on Saturdays, with half an hour for breakfast." The remainder of the rule is unaltered. Rule 2 has been altered so as to make the wages paid to skilled operatives 8½d. per hour. This does not affect Rule 3. Rule 7 stands unaltered. The award comes into force on July 1st next. The advance in price does not apply to overtime. In the number of working hours there is a reduction of one and a half hours per week for eight months of the year.

**The Dispute in the Building Trade.**—The master plasterers are perfecting their organisation, and have decided to locate their central offices in Bradford for a time. Most of the building trade unions, who received a communication from Mr. Hassall, the Secretary of the Central Association of Master Builders, on Monday last, have sent in their replies. They were asked to give an affirmative answer to two questions: "Are you in sympathy with the Plasterers' Union? and do you intend to support them during their lock-out?" The reply in every case has been a refusal to answer the questions asked. The stonemasons have replied, saying that the time given for a reply is so short that a vote of the members cannot be taken, and the executive of the Society does not feel justified in giving a reply without consulting their constituents. The replies from the bricklayers, carpenters, painters, and plumbers are very much on the same lines. It seems almost too much to ask one trade union to say that it is not in sympathy with another union when it is attacked. The unions appear to be very indignant that they should have been asked such questions, which they regard as being deliberately put to precipitate a general lock-out. At a meeting of the executive of the Yorkshire Federation of Master Builders, held in Leeds on the 5th inst., it was decided, in consequence of the attitude of the men engaged in the building trade at Hull, in regard to the question of non-union labour, to lock out to-day 25 per cent. of the men employed. The federated employees of Hull, acting upon this resolution, on Saturday locked out 25 per cent. of their men, and the Union at once decided that the remaining 25 per cent. should come out. The Scarborough Master Builders' Association have decided that they will not bring the resolution into effect until June 1st.

**The Working Men's Club, Newburn-on-Tyne,** at present in course of erection (Messrs. Hicks and Charlewood, Architects, Newcastle-on-Tyne), is ventilated by means of "Cousland's improved 'Climax'" patent "Natural Exhaust" ventilators and air inlet panels, which have been supplied by the "Climax" Ventilating and Heating Company, Limited, 93, Hope Street, Glasgow, the sole manufacturers of this latest improved form of ventilator.

## Engineering Notes.

**The Memorial Hall,** Farringdon Street, London, E.C., is to be provided with an installation of the electric light.

**Tramways Bills.**—A Select Committee of the House of Lords, consisting of Lord Lauderdale (chairman), Lords Boyle, Digby, Napier, and Glenesk, had under consideration, on May 2nd, the Bill under which the Manchester Corporation seek powers to provide for the working of tramways in Manchester and outside the city by electricity or other motive power, to confirm agreements with outside authorities as to the purchase and taking on lease of outside tramways, and for other purposes. — Mr. Balfour Browne, Q.C., in explaining the scheme, said the Manchester Corporation owned fifty-six miles of tramways in the city, which were leased to the Manchester Carriage and Tramways Company. All the leases would have expired by 1901, and in view of that the matter was considered by a Committee of the Corporation, and a report was issued in favour of the Corporation working the whole of the tramways. In May, 1898, the City Council passed a resolution to promote a Bill to enable the Corporation and any neighbouring local authorities to make arrangements for working tramways upon terms. In 1897 they got a Bill through Parliament, authorising the Corporation to work the tramways in Manchester. In 1898 the Manchester Carriage and Tramways Company applied to Parliament for an Act to equip their lines with electricity, but their Bill was rejected. The Corporation had agreed with Failsworth, Audenshaw, Droylsheden, Gorton, Denton, Levenshulme, and Heaton Norris in regard to the working of the tramways, and one of the objects of the Bill was to confirm the agreements that had been voluntarily entered into on the question with these authorities. No agreement had been entered into with the Strefford, Moss Side, and Withington Urban District Councils that Manchester should work their trams. The real opponents to the Bill were the Stockport Corporation. He was not sure that the Salford Corporation offered a serious opposition. — The Committee, after deliberating in private, announced that the preamble was proved and the Bill could proceed, and after the clauses of the Bill had been considered it was passed. — On the same day the Committee had under consideration a small general purposes Bill promoted by the Oldham Corporation, for the purpose of making new tramways, reconstructing some of the old existing tramways in the borough, entering into financial arrangements consequent upon the works proposed, and for other purposes. Mr. Pember, Q.C., and Mr. Frere appeared for the promoters. Mr. Pember, in entering into an explanation of the scheme, said the Corporation wished to be empowered to construct additional tramways, make streets, and to have conferred upon them further powers with regard to tramways in and near the borough. There were seven miles of tramway belonging to the Corporation, which were leased separately by the Manchester Carriage and Tramways Company and the Manchester, Bury, Rochdale, and Oldham Company, the leases of which would fall in in 1901. When the Oldham Corporation proposed to take them a short branch line would be constructed to join the two systems. They were estimated to be worth £71,000, while the total cost to the Corporation would amount to £100,000. According to one section of the Bill the Corporation would have power to work the tramways in Royton, Crompton, and Lees. The British Electric Traction Company, who were represented by Mr. Balfour Browne, Q.C., petitioned against the Bill. This Company were entitled under a light railways order to construct certain light railways from Little Heaton to a point in the Middleton Road in the borough, and covered streets to be traversed by the proposed new tramways. The Committee, after hearing the arguments for and against the Bill, decided that the preamble was proved, and allowed the Bill to proceed.



**Victoria Station Improvements.**—A Select Committee of the House of Commons, presided over by Mr. S. Hoare, has been considering for some days past the Various Powers Bill of the London, Brighton, and South Coast Railway. The main object of the Bill is to obtain Parliamentary powers to carry out extensive improvements of the company's terminus at Victoria, at a cost of £1,080,000, by extending it along the Grosvenor Hotel side of Buckingham Palace Road as far as Ebury Bridge. The Bill also provides for the completion of four lines of rails as far as Three Bridges, and the carrying out of other works. At the committee's meeting on May 1st, Mr. Charteris, on behalf of the Duke of Westminster, stated in reply to the chairman that the opposition of the Duke to the clause empowering the company to take a portion of certain buildings in the Buckingham Palace Road without, under Section 92 of the Lands Clauses Act, acquiring the whole, was one of principle. After Mr. Baggalay, Q.C., had addressed the committee on behalf of Messrs. Smith, Parfrey, and Co., of the Pimlico Wheel Works, which would be swept away by the scheme, Mr. Kimber, Q.C., was called, and gave evidence on behalf of the Grosvenor Hotel Company. The Bill contained a clause exempting the railway company from the necessity, presumably, of compensating for the cutting-off of supplies which were absolutely essential for the carrying on of any hotel business. If the exemption clause remained in the Bill, the railway company would be able to leave the hotel like a ship without a rudder and without a boiler. He contended that the damage to the hotel by interference with the wells would be such that the railway company ought to be compelled to take the whole undertaking. The committee having deliberated in private, the chairman said that with reference to the Duke of Westminster's petition, the committee would hear counsel on the clauses, and the point would be reserved until then. With regard to the Grosvenor Hotel, provided the amended plans with regard to the interference with the wells were adhered to, the committee would not further alter the clauses in the Bill. Subject to these reservations, the preamble of the Bill, so far as it had reference to Victoria, was found to be proved.

**Ventilation of Infirmaries.**—Mr. William Key of London and Glasgow is the engineer for the ventilating and warming, and hot water arrangements at the new infirmary, Paisley. The air of all the wards and rooms will be renewed from ten to twelve times per hour—without draughts—and 7,000,000 cubic feet of air will be propelled throughout the buildings every hour, on his improved plenum method. The same system is being applied to the workhouse infirmary at Wakefield. Here 3,500,000 cubic feet of air are being propelled into the buildings every hour, and the air is renewed from ten to twelve times per hour, without draughts. The Wakefield Guardians devoted twelve months to the investigation of the ventilation of buildings throughout the country so that they might have the best method, and thereafter unanimously decided to give the work to Mr. William Key.

Surveying and Sanitary Notes.

**Powick Sewerage Scheme.**—Mr. W. A. Ducat, Local Government Board inspector, held an inquiry on May 5th, at the Callow End Schools, into an application to the Local Government Board by the Upton-on-Severn Rural District Council for power to borrow £1,400, for works of sewerage and sewage disposal for the hamlets of Pole Elm and Callow End, Powick.

**Manchester Sewage.**—At the adjourned inquiry of the Local Government Board into the application of the Manchester Corporation for sanction to borrow money for sewerage and sewage disposal, Dr. Percy Frankland stated that he had watched the performance of the double-contact beds at Davyhulme, and found it perfectly satisfactory. An important element in the treatment of Manchester sewage at Davyhulme would be the existence there of the very large storage tanks in which precipitation was now carried on. Under the bacterial system these tanks would be immensely useful. Mr. J. P. Wilkinson, civil

engineer, formerly in the City Surveyor's office, and well acquainted with the lands at Carrington and Flixton, said there was sufficient fall in the land at Carrington to take the effluent from Davyhulme—save for a small portion above the limit of gravitation—either the chemical effluent from the tanks or the effluent from the primary bacteria beds, or first contact beds. Of the 213 acres of land proposed to be acquired, 25 or 30 lay above the gravitation limit, so that practically 180 acres would be available by gravitation and 33 would be used for other purposes. The strata had been examined both for the purposes of the inquiry in 1893 and for the present inquiry, and the result showed the land to be suitable for putting the effluent upon it as long as they kept to shallow under-drainage not exceeding 4ft. In answer to Major-General Crozier, the witness said that, taking the second contact beds, none of the effluent could go into them without pumping. Various other gentlemen gave evidence, and after the inquiry the inspectors visited the lands and the sewage works.

**The Sanitary Institute Dinner** was held a short time ago at the Hôtel Métropole under the presidency of the Duke of Cambridge.—“The Houses of Parliament” was proposed by Sir R. Thorne-Thorne, and, in responding, Mr. T. W. Russell, M.P., referred to the question of the housing of the poor. The Bill before the House, he said, did not touch the vital question which came out of the overcrowding of the poor. He defended the recent vaccination measure.—In proposing the toast of the evening, “The Sanitary Institute,” the chairman remarked that amongst the many advances that had been made in this country of late years, none had been of such public advantage as the improvements made in dealing with sanitary matters. They never thought of such things as microbes sixty years ago. Their Institute was created by the march of intellect and the march of events. He commended the proposition for increasing the usefulness of the Institution, and was glad that already they numbered 2300 members. Their income last year was £8,753, and they had an invested capital of over £12,000.—Mr. Henry Law responded.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.		WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—				
May	12	Whitehaven—Church Restoration	...	J. S. Moffat, Architect, Whitehaven.
"	12	Manchester—Extension of Post Office	...	Offices, Storey's Gate, S.W.
"	12	Ilogan, Scotland—Additions to Boys' School	H.M. Commissioners of Works	S. Hill, Architect, Green-lane, Redruth.
"	13	Bangor, Wales—Alterations at Workhouse	School Board	R. Davies, Architect, Bangor.
"	13	Milford, Cork—Church and Presbytery	Union Guardians	M. A. Hennessy, 74, South Mall, Cork.
"	13	Arbuthnot, Scotland—Dwelling House	Rev. W. Coughan, P.P.	A. Donald, Forester, Parknook, Arbuthnot.
"	13	Baltinglass, Ireland—Town Hall, Reading-room, &c.	Town Hall Company	E. P. O'Kelly, Hon. Sec., Baltinglass.
"	13	Beckenham—Portion of the Church	Rector of St. Michael, Birkbeck	A. H. Hoole, 21, King William-street, Charing Cross, W.C.
"	13	Manordivry, Pembrokehire—Alteration of Chapel Dwelling House	...	—Thomas, Carpenter, Newchapel, Manordivry.
"	13	Moreton-in-Marsh, Glos.—Four Cottages	Oddfellows	A. W. Drury, Secretary, Moreton-in-Marsh.
"	13	Rainham—Additions to Premises	Co-operative Society, Ltd.	Secretary, Station-road, Rainham.
"	13	Weston-super-Mare—School of Art	...	H. F. Price, Architect, Weston-super-Mare.
"	13	Withington, Lancs.—Office	Urban District Council	A. H. Mountain, Surveyor, Town Hall, Withington.
"	13	Glasgow—Halls	Fairbairn Free Church	Maccall and Harvie, Measurers, 102, Bath-street, Glasgow.
"	14	Dartmouth—Repairing and Painting Market Buildings	Town Council	T. O. Veale, Borough Surveyor, Dartmouth.
"	14	Ryton-on-Tyne—Rebuilding Inn	...	T. C. Nicholson, Architect, Blaydon.
"	14	Motherwell—Alterations to School	Dalziel School Board	A. Cullen, F.R.I.B.A., Architect, Motherwell, N.B.
"	15	Wiveliscombe—Alterations to Police Station	...	W. J. Wilcox, 1, Belmont, Bath.
"	15	Stockton-on-Tees—Offices	South Durham Steel and Iron Co., Ltd.	J. J. Wilson, Architect, West Hartlepool.
"	5	Ripley, Yorks.—Additions to School	...	C. H. Fowler, Architect, The College, Durham.
"	5	Llandaff—Enlargement of Schools	...	G. E. Halliday, Architect, Cardiff.
"	15	Hensingham, Whitehaven—Chapel	...	A. Huddart, 22, Lowther-street, Whitehaven.
"	15	Bristol—School	School Board	H. J. Jones, 12, Bride-street, Bristol.
"	15	Herne Common, Kent—Additions, &c., to Workhouse	Blean Union Guardians	Master of Workhouse, Herne Common.
"	15	Morpeth—Villa Blocks at Asylum	County Council	J. Cresswell, Architect, Moot Hall, Newcastle-on-Tyne.
"	15	Wath-upon-Deane, Yorks.—Chapel	Primitive Methodist Connection	W. G. Smithson, 13, Bond-street, Leeds.
"	15	Finchley, N.—New Hall, &c.	Y.M.C.A. Branch	W. Hollis, Estate Office, Church End Station, Finchley.
"	15	Bexhill—Electric Light Station	Urban District Council	A. H. Preace, 13, Queen Anne's-gate, S.W.
"	16	Bristol—Retaining Walls, &c.	Sanitary Committee	T. H. Yabbicum, 63, Queen-square, Bristol.
"	16	Lewisham and Forest Hill—Public Libraries	Lewisham Vestry	J. Andrews, 13, Basinghall-street, E.C.
"	16	Edmonton—Schools	School Board	H. W. Dobb, 110, London-wall, E.C.
"	16	Glasgow—Ten Tenements	Corporation	F. Burnett and Boston, 180, Hope-street, Glasgow.
"	17	Shrewsbury—Eight Cottages, &c.	L. & N.-W. & G. W. Railway Cos.	The Joint Engineer, Shrewsbury Station.
"	17	Llandegfan, Wales—Chapel, &c.	Calvinistic Methodists	J. Owen, Architect, Menai Bridge.
"	19	Portsmouth—Drill Hall	3rd Vol. Batt., Hampshire Regiment	A. H. Bone, Architect, Cambridge Junction, Portsmouth.
"	20	Leeds—Parochial Institute	...	H. Walker, 8, Upper Fountain-street, Leeds.
"	20	Cannock—Class-room, &c.	School Board	J. P. Gardner, Clerk, Cannock.
"	20	Grimsby—Electricity Buildings, &c.	Urban Sanitary Authority	M. Petree, Borough Engineer, Town Hall-square, Grimsby.
"	23	Trowbridge—Technical School	...	G. Fleetwood, 2, New-court, Lincoln's-inn, W.C.
"	23	Tendring, near Colchester—Infirmary Wards	Union Guardians	F. Whitmore, Architect, Chelmsford.
"	24	London, S.E.—Chimney Shaft, Boiler House, &c.	Metropolitan Asylums Board	T. D. Mann, Clerk, Norfolk House, Norfolk-st., Strand, W.C.
"	24	Shirebrook, near Mansfield—Lock-up	Derbyshire County Council	J. S. Storey, County Surveyor, County Offices, St. Mary's-gate, Derby.



### COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.		WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—Continued.				
May	25	East Cowton—Restoration of House	Islington Vestry	T. Easdale, East Cowton.
"	25	London, N.—Pulling down Buildings	"	Clerk, Vestry Hall, Upper-street, N.
"	27	Brydekirk, Annan, Scotland—Hall	"	W. Thornburn, Schoolhouse, Brydekirk.
"	30	Cheltenham—Reconstruction of Baths	"	J. Hale, Borough Surveyor, Municipal Offices, Cheltenham.
"	30	Talgarth, Wales—Asylum	"	Giles, Gough, & Trollope, 25, Craven-st., Charing Cross, W.C.
"	30	Darlington—Electric Light Buildings	Corporation	Borough Surveyor, Town Hall, Darlington.
No date.		London, N.—Repair, &c., of Chapel Buildings	"	W. Bradbear and Co., Architects, Canonbury Station, N.
ENGINEERING—				
May	12	Crynan Colliery, near Neath—Driving Heading	County Council	W. Daniel, the Manager at the Colliery.
"	12	Netherwood, Dumfries—Waterworks	"	J. and A. Leslie and Reid, 72a, George-street, Edinburgh.
"	13	Barnstable—Reconstruction of River Wall	"	J. Bosson, Town Clerk, Municipal-buildings, High-street, Barnstable.
"	13	Daventry—Steam Roller, &c.	Rural District Council	W. W. Band, Surveyor, Welton Station, Rugby.
"	13	Ruskinton, Lincs.—Boring and Tubing Well	Urban District Council	J. Clare, Engineer, Sleaford.
"	13	Wootton Bassett, Wilts.—Sub-Main	Rural District Council	H. Bevir, Clerk, Union Offices, Wootton Bassett.
"	13	Leeds—Boiler Covering	Baths Committee	Baths Superintendent, Cookridge-street Baths, Leeds.
"	15	Christiania—Heating Apparatus, &c.	Norwegian Naval Authorities	Commercial Department, Foreign Office, S.W.
"	15	Port Talbot, South Wales—Five Engines	Port Talbot Railway and Docks Co.	Locomotive Superintendent, Port Talbot.
"	15	Berwick—Steam Tug	Harbour Commissioners	S. Sanderson, Clerk, Berwick-on-Tweed.
"	15	Edinburgh—Copper Strip for Electric Conductors	Lord Provost, Magistrates, and Council	Resident Electrical Engineer, 5, Dewar-place, Edinburgh.
"	15	Mountain Ash, Wales—Cemetery Works	Urban District Council	Council's Surveyor, Town Hall, Mountain Ash.
"	15	Egremont, Cheshire—Gasholder Tank, &c.	Wallasey Urban District Council	J. H. Crowther, Engineer, Great Float, near Birkenhead.
"	15	Wimbledon—Steam Road Roller	Urban District Council	C. H. Cooper, Surveyor to Council, Wimbledon.
"	16	Fleetwood—Electric Lighting Materials, &c.	Urban District Council	T. Barton, Electrical Engineer, Ainsworth-st. Blackburn.
"	16	London, N.W.—Electrical Plant	St. Pancras Vestry	Chief Clerk, Electricity Dept. Offices, 57, Pratt-st., N.W.
"	16	Kew—Filter Bed	H.M. Commissioners of Works	Clerk of Works, Kew Palace, S.W.
"	16	India Offices, S.W.—Spans, Steel Tyres, Engines, &c.	"	Director-General of Stores, India Offices, Whitehall.
"	16	King's Lynn—Electric Wiring, &c.	Corporation	Prof. Henry Robinson, 13, Victoria-street, Westminster.
"	16	Southampton—Floating Bridge	Floating Bridge and Road Co.	C. W. Murray, Engineer, Oriental-place, Southampton.
"	17	York—Railways, &c.	North-Eastern Railway Co.	W. J. Cudworth, Company's Engineer, Darlington.
"	17	London, E.—Construction of Wells &c.	Poplar Union	E. J. W. Stevens, 34, Victoria-street, S.W.
"	18	Egremont, Cheshire—Gasholders	Wallasey Urban District Council	J. H. Crowther, Engineer, Great Float, near Birkenhead.
"	18	London, N.W.—Electric Lighting Plant	St. John's Vestry, Hampstead	A. P. Johnson, Vestry Clerk, Vestry Hall, Hampstead, N.W.
"	18	Bakewell—Retorts	Urban District Council	V. R. Cockerton, Clerk, Bakewell.
"	18	West Bromwich—Purifiers, &c.	Gas Committee	T. Glover, Manager, Gasworks, West Bromwich.
"	18	Newcastle-upon-Tyne—Steel Tank	Guardians	J. W. Gibson, 127, Pilgrim-street, Newcastle-upon-Tyne.
"	18	Bakewell—Purifiers	Urban District Council	V. R. Cockerton, Clerk, Bakewell.
"	26	Greenwich, S.E.—Sinking Well	Union Guardians	T. Dinwiddie, 12, Croom's-hill, Greenwich.
"	29	Winwick, near Warrington—Railway Siding Extension	Lancs. Asylums Board	R. Curran, Engineer, Horsemarket-chambers, Warrington.
"	30	Kilkenny—Waterworks	Corporation	J. F. Reade, Engineer, Town Hall, Kilkenny.
"	30	London, E.C.—Iron or Steel Winches	James' Syndicate, Ltd.	Office, 18, Billiter-street, London.
"	31	Clacton-on-Sea—Sea Defences	Commissioners	T. A. Cressy, Surveyor, Clacton-on-Sea.
June	1	London—Telephones, Fire Alarms, &c.	London County Council	R. W. Partridge, 6, Waterloo-place, S.W.
"	7	London, S.W.—Electric Light Installation	Islington Guardians	W. Smith, 65, Chancery-lane, W.C.
"	10	London, S.W.—Electric Lighting Works	St. Mary's Vestry, Battersea	Vestry Clerk, Municipal Buildings, Lavender Hill, S.W.
"	30	Naples—Harbour and Docks	"	Public Works Department, Rome.
"	30	Shanghai—Tramway Concession	Municipal Council	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
IRON AND STEEL—				
May	17	London, E.C.—Wheels and Axles	Madras Railway Co.	J. Byrne, 61, New Broad-street, E.C.
"	20	Kettering—Water Mains, &c.	Urban District Council	T. R. Smith, Surveyor, Market-hill, Kettering.
PAINTING AND PLUMBING—				
May	15	Mapplewell, Barnsley—Whitewashing, &c.	Darton School Board	W. Pickering, Clerk, Mapplewell.
"	15	Bristol—Plumbing	School Board	H. J. Jones, 12, Bride-street, Bristol.
"	24	London, W.—Painting, Repairs, &c.	St. George's Union Guardians	E. T. Hall, 57, Moorgate-street, E.C.
No date.		Aldershot—Painting, &c.	War Department	R. E. Office, N. Aldershot.
ROADS AND CARTAGE—				
May	12	Maxwelltown, Dumfries—Granite Paving	"	J. Barbour, 33, Buccleugh-street, Dumfries.
"	12	Preston—Paving, &c.	"	Borough Engineer, Town Hall, Preston.
"	12	Brighton—Granite Edge, Kerb, &c.	Corporation	F. J. C. May, Surveyor, Town Hall, Brighton.
"	13	Burnley—Paving, Kerbing, &c.	Highways and Sewerage Committee	G. H. Pickles, Borough Surveyor, Town Hall, Burnley.
"	13	Egham—Making-up Roads	Rural District Council	W. Menzies, Englefield Green, Surrey.
"	13	Gravesend—Road-making, &c.	Town Council	C. E. Hatten, Town Clerk, Court House, Gravesend.
"	13	Bradford—Road Metal	Corporation	J. H. Cox, City Surveyor, Town Hall, Bradford.
"	15	Harrogate—Road	"	Martin and Fenwick, 1, Park-place, Leeds.
"	15	Hanwell, W.—Road-making	Urban District Council	S. W. Barnes, Church-road West, Hanwell, W.
"	15	London, W.—Tarred Limestone Paving	Paddington Vestry	G. Weston, Vestry Hall, Harrow-road, W.
"	15	Halifax—Asphalting	Parks Committee	E. R. S. Escott, Borough Engineer, Town Hall, Halifax.
"	16	Saffron Walden, Essex—Granite Macadam	Corporation	A. H. Forbes, Borough Surveyor, Saffron Walden, Essex.
"	16	Chertsey—Street Works	Urban District Council	J. F. Stow, Surveyor, Windsor-street, Chertsey.
"	16	Colchester—Levelling, &c.	Road and Drainage Committee	H. Goodyear, Borough Engineer, Stanwell-st., Colchester.
"	16	London, W.—Materials	Great Western Railway Company	G. K. Mills, Secretary, Paddington Station, London.
"	16	Uxbridge—Materials	Rural District Council	E. Birks, District Surveyor, Town Hall, Uxbridge.
"	16	Bromley—Sewering, Levelling, &c.	Urban District Council	Surveyor, Council Offices, Bromley.
"	16	Tottenham—Making-up Road	Urban District Council	P. E. Murphy, 712, High-road, Tottenham.
"	17	Tyne Dock, South Shields—Streets, &c.	North-Eastern Railway Company	W. Bell, the Company's Architect, Central Station, Newcastle-upon-Tyne.
"	17	Greenwich, S.E.—Paving	Board of Works	J. Spencer, 141, Greenwich-road, Greenwich.
"	19	Eastbourne—Materials	Rural District Council	L. Jeffery, Clerk, Trinity-chambers, Eastbourne.
"	19	Elgin—Road Works	"	A. A. Turriff, Burgh Surveyor, Elgin.
"	20	Southborough, Kent—Stone	Urban District Council	P. Hammer, Clerk, Council Offices, Southborough.
"	25	Pokesdown, Bournemouth—Making-up Road	Urban District Council	E. W. Ingamelles, Surveyor, Cromwell-road, Pokesdown.
"	31	Wolverhampton—Materials	Tramways Committee	W. Bradley, Borough Surveyor, Town Hall, Wolverhampton.
June	9	Shrewsbury—Hire of Steam Roller, &c.	Atcham Rural District Council	J. Everest, Clerk, St. John's-hill, Shrewsbury.
SANITARY—				
May	12	Johannesburg—Sewerage Scheme	"	Town Engineer, Johannesburg.
"	13	Southam—Drains, &c.	Rural District Council	C. Nelson and Company, Stockton.
"	16	Glasshoughton—Scavenging	Parish Council	S. M. Lowden, Clerk, Glasshoughton.
"	16	Leeds—Earthenware Pipes	Sewerage Committee	City Engineer, Municipal Buildings, Leeds.
"	22	Kirkby Muxloe, Leics.—Sewers	Blaby Rural District Council	J. B. Everard, 6, Millstone-lane, Leicester.
"	23	Southampton—Sewerage Works	Corporation	W. B. G. Bennett, Borough Engineer, Southampton.
"	25	London—Repaving with Jarrah Wood	St. John's Vestry, Hampstead	Surveyor, Vestry Hall, Hampstead.

## LIST OF COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
May 16	Arbroath—Public Shambles ... ..	£7, £5, £3	Burgh Commissioners.
June 1	Leeds—Market Hall and Shops ... ..	£150, £100, £50	Corporation.
" 6	Salford—Laying-out Site of Barracks ... ..	£30, £20, £10	Corporation.
" 27	Edinburgh—County Buildings ... ..	£100, £50	Midlothian County Council.
" 30	Wakefield—Central Buildings ... ..	£50, £30, £20	Wakefield Industrial Society, Ltd., Bank-street, Wakefield.
July 3	Harrogate—Kursaal ... ..	£150, £100, £75	Corporation.
" 27	Plumstead—Municipal Buildings and Public Library ... ..	£100, £75, £50...	Edwin Hughes, Clerk, Vestry Hall, Maxey-road, Plumstead.
No date.	Aldershot—Masonic Hall ... ..	£30, £10	Aldershot Masonic Hall Co., Ltd., The Triangle, Aldershot.



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LOCAL SALE OF PLOTS on MAY 31st.—ILFORD.—Uphall Estate, First Portion.—Free conveyances; payment by instalments; roads made; tithe and land tax free.—The special attention of Plot Buyers, Builders, and Creators of Ground-rents is directed to the sale of this Land, which is ripe for immediate building.—ONE HUNDRED and THIRTY-NINE PLOTS of ripe FREEHOLD BUILDING LAND, having frontages to the following thoroughfares, viz., Ilford-lane (a road 50ft. wide, leading from Ilford Broadway to Barking), Wingate-road, Natal-road, and Uphall-road. The plots vary in frontage from 16ft. to 37ft., and in depth from 90ft. to 125ft., and are ripe for the erection of small houses and shops, and the immediate creation of ground-rents.

MESSRS. DOUGLAS YOUNG and CO. will SELL the Above by AUCTION at the Angel Hotel, High-road, Ilford, on WEDNESDAY, MAY 31st, 1899, at SEVEN o'clock in the evening.

Particulars and conditions of sale may be obtained at the Mart, E.C.; of the Solicitor, J. HOWARD SMITH, Esq., 7, Finsbury-circus, E.C.; or of the AUCTIONEER, 51, Coleman-street, E.C., Clapham and Ilford.

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To Land Companies, Capitalists, and Building Speculators.—The choice Freehold Building Estate, known as Eastcombe, a portion of the estates of the late William Angerstein, Esq., on the main road from Blackheath to Charlton, about half a mile from Westcombe Park and Charlton Station, from whence London is reached by South-Eastern Railway in twenty minutes, about a mile from Blackheath, and in the midst of a healthy and highly popular district, comprising a commodious Family Residence, with two lodge entrances, stabling, charming pleasure grounds, and well-timbered miniature park, let on yearly tenancy of £280 per annum; together with beautifully undulating pasture land, extending from the Charlton-road with long frontage thereto, to Victoria and Invicta roads, Westcombe-hill, the whole comprising 38 acres. The estate is immediately ripe for development, and offers exceptional facilities to capitalists for the creation of ground-rents, and the demand for middle-class houses in this favourite locality assures successful building operations.

MESSRS. BEADEL, WOOD and CO. will SELL by AUCTION, at the Mart, Tokenhouse-yard, London, E.C., on TUESDAY, MAY 16th, at ONE o'clock precisely, the above valuable BUILDING ESTATE, in one lot.

Particulars, with plan and conditions of sale, may be obtained of W. T. HARTUP, Esq., Solicitor, Norwich; and of Messrs. BEADEL, WOOD and Co., 97, Gresham-street, E.C.

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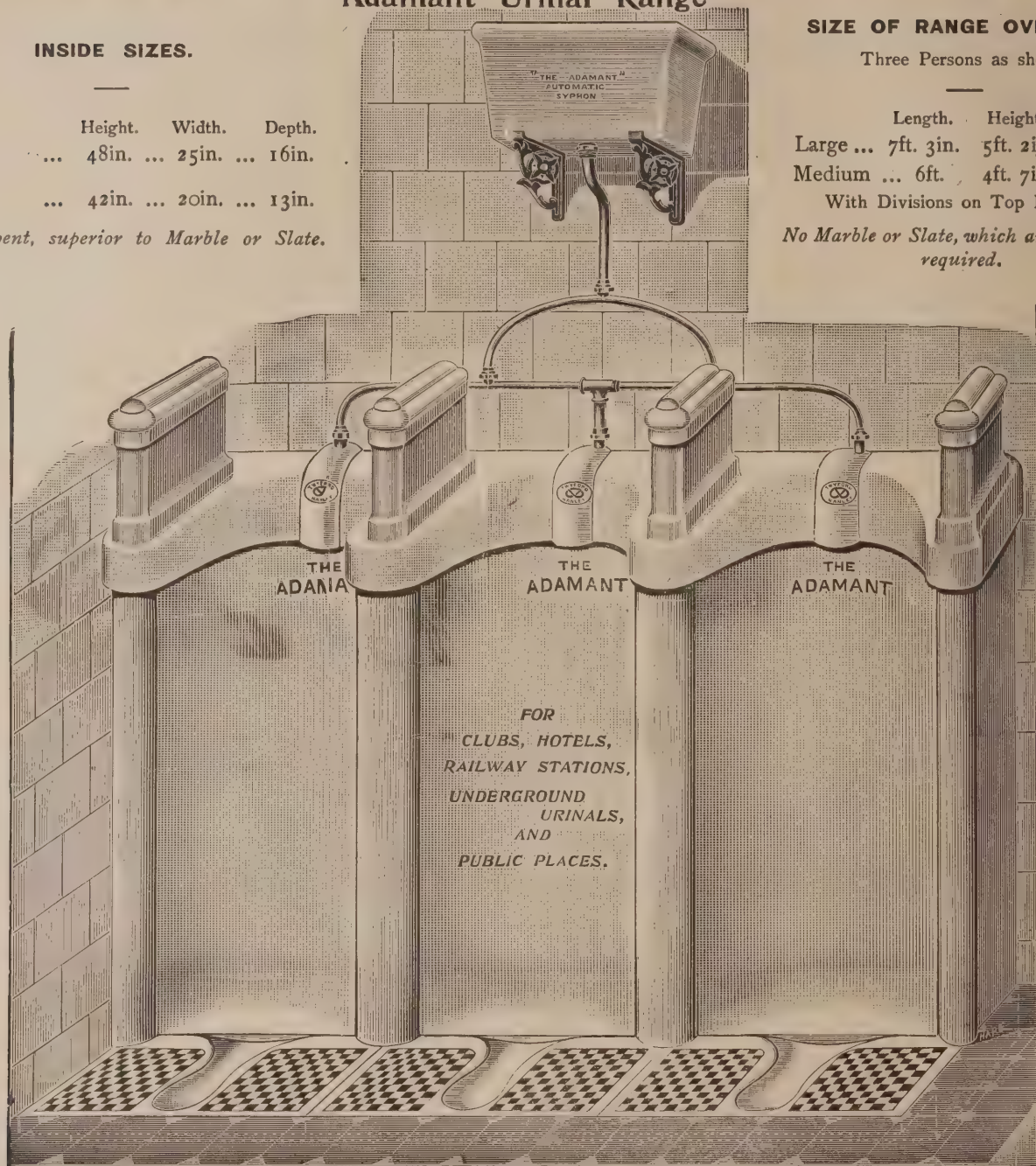
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MAY 17, 1899.

No. CCXXIII.

## An Architectural Causerie.

### A Coming Restoration.

THE vote of the Royal Academy, by which the income derived from Lord

Leighton's bequest was allocated to acquiring and commissioning works of decorative painting, sculpture, and architecture, constituted a momentous step whose wide significance has in great part been overlooked by a perverted and callous public. The discretions of the Academy are in general characterised by a too stolid conservatism, but this decision as to the application of the Leighton bequest is to a large extent initiative, and constitutes a vigorous and influential effort to take part with those who would see Art restored to its true place as an essential factor in a graceful and polished civilisation. Unfortunately with the English, Art has by habitude and long association of ideas become identified with museums and art galleries. In England applied art is popularly esteemed and recognised merely for its power to confer ornateness; it is valued for its power to make an object look costly, and thus swell the dignity of great possession attaching to the owner. The public is content to see its churches with bare walls, and deal altars covered with brocade from the bridal train of the vicar's wife; but a hotel or a restaurant must be be-gilt and be-marbled in senseless, comfortless lavishness, so that visitors may sleep there in comfort and enjoy their meals, knowing themselves to be rare expensive souls. Thus it happens that in a kingdom which possesses many of the art treasures of the world, distributed to many centres free to the enjoyment of all, we see the most ludicrous incongruities and anomalies of taste bunched together side by side. Cheek by jowl with the Elgin marbles, and the Greek and Etruscan ceramics in the British museum, are to be found those stores of æsthetical blasphemies which have made "Tottenham Court Road" a bye-word with the initiated. People who profess a moving admiration for great Art, and visit the London galleries with some persistency, will yet, on the spot, ere they return suburbward; buy Christmas cards with snow-scapes rendered in powdered glass; an inkpot which affects to be a half-penny bun; a pepper caster which assumes to be a toadstool; and, let us say, a badly stuffed kitten glued to a disk of flannel by way of pen-wiper. They litter the rooms of their houses with steam-turned "ornaments," tufts of dyed grasses, imitation palms, taudry photograph frames, cotton wool spiders and all the rest. If it is such as these who extend an unqualified applause to

the designs of Burne-Jones, the eminent critic who stigmatised such unreserved admiration as denoting "the higher vulgarism," was happily inspired. There seems, indeed, to be an opening here for a few additional chapters to the great "Book of Snobs," for these self-conceived enthusiasts for Art do not hesitate to patronise also the puppy-dog-and-Christmas-berry coloured supplement to the weekly illustrated press; and are content to fasten up the perennial festive cats where they may be seen on a first awakening in the morning. For these wealth is rather a means to more extravagant assumptions, than an occasion for refinement of taste. Their houses exemplify an art of design which is little else than the art of simulating the extremest costliness at the smallest outlay; while within doors a marble replica of the Venus of Milo or the Apollo Belvedere, balances a Neapolitan sculpture of a little

### American Architecture.

ART and Literature naturally belong to the older civilisations of the world. In a new country, men are too exclusively occupied in the struggle for material wealth to have any time to give to the making of books, pictures, or beautiful buildings. As the country becomes more settled, and new generations arise, from whom is demanded a less strenuous life than that of their fathers, the arts begin to have a chance. Young men of artistic bent have leisure to follow their inclinations; they travel in Europe, and come home to imitate as closely as they can the methods of the European artists, whose works they have studied. The next stage of development is the production of works of art (books, pictures, music, buildings) that are natural, spontaneous, unaffected, owing little to foreign influence, but racy of the soil, and expressive of the national characteristics of the people. Is there any new country that has yet attained, or is within reasonable distance of attaining, to this dignity? Is there in literature, or architecture, or the fine arts, any such thing as a distinctly American,



AT THE ROYAL ACADEMY, 1899.

girl in her mother's silk dress, and is set beside a steam-carved dinner-waggon to look on at the gentlemen cracking walnuts between rounds of the port. It was the effort to break down this perversion, affectation, and insensibility of the public, and restore Art to its pristine dignity, and significance, that engaged the energy and enthusiasm of William Morris, and his ideals have found invaluable support from associations of enthusiasts in the same cause. Hitherto, however, the movement has found little of support or even serious recognition from established seats of artistic authority or education, and the late action of the Royal Academy, slight as it may seem in the actual promise it holds forth, is a significant mark and acknowledgement of the reality and force of the instauration of a wider scope and application of the Arts, and the restoration of the handicrafts to the position they held prior to the commercial activity which followed the introduction of steam power. Furthermore it promises to be one of the most useful, as it is one of the most influential, steps that have been yet taken in this direction. The mob takes colour from its surroundings, and if our cities and towns are constructed, decorated, and furnished in dignity, reserve, truth, and beauty, the same sentiment will in time indubitably find place in the lives and the homes of the people. B. C.

Australian, or South African style? Confining ourselves for the moment to the oldest of the newer civilisations, that of the United States of America, we may freely admit that American literature has long ago left off its swaddling clothes. Emerson, Longfellow, Whittier, Lowell, Hawthorne, Motley, were the peers of their contemporaries of the pen the world over; but where in the domain of art shall we find names of equal eminence? These questions are suggested by an interesting symposium that appears in the pages of the "Architectural Annual," published by the T-Square Club, of Philadelphia. The editor of the "Annual" addressed to a number of American architects and others this question: "Do you as yet see any signs tending to indicate the development of an unaffected style of architecture in America?" The replies received indicate considerable divergence of opinion. It is pretty generally agreed that as yet there exists nothing worthy of the name of a national architecture; but while some neither see nor desire to see any signs of a strictly American style, others look forward with confidence to the ultimate development of such a style. "For myself," writes Mr. Cass Gilbert, of St. Paul, "I prefer the development of Art as a whole, in its larger sense, rather than the development of an American art, and do not greatly sympathise with the desire for a strictly national



art. If the architecture of our country is *beautiful and appropriate*, the question of originality will take care of itself." On the other hand, Mr. Louis H. Sullivan, of Chicago, already sees signs of an indigenous architecture, and is moved to the following dithyrambic utterance of his hopes for the future:—"It is not, for my mind, a thinkable proposition that from a people democratic and free, self-reliant, resourceful, possessed of their own bodies, possessed of their own souls, self-centred, deep of aspiration, there shall not some day breathe as an exhalation an architectural art germane to those gifts, responsive to that throbbing, eloquently voicing every form, every aspect of what is genuine in our national life." When we come to consider the road by which a truly national style is to be reached, we find the same absence of agreement. Mr. Ernest Flagg, of New York, for instance, thinks that it will be by way of the study of the true principles of design taught by "the greatest masters of the most artistic nation of Europe." "These principles," says Mr. Flagg, "are bound to take root here, because they are logical, reasonable, right and true. In time they will produce their legitimate result, and we shall have an architecture of our own." Quite otherwise thinks Mr. R. A. Cram, of Boston; in his eyes this study of French artistic methods is a mere fad; architects had better acknowledge that their art is purely self-conscious, and set themselves to use, as intelligently as they can, any of the styles of the past that can be adapted to the particular work in hand. Mr. William R. Ware, of Columbia University, writes to a somewhat similar effect: "To develop in the school a distinctive method in design, by which the style of contemporaneous building shall be influenced and controlled as the architecture of France seems to be influenced by the fashions which, from time to time, prevail in the Ecole des Beaux Arts, is by no means our object. This would be, under the circumstances, an improper and most unbecoming ambition." It was, to be sure, suggested some years ago in high quarters that the schools in this country would do well to take up and solve the problem of developing a new architectural style, which should be thoroughly national, and should express the characteristics of the twentieth century civilisation in this country. But this cry finds no echo in our minds. It is for the architects themselves, practising in their offices, to create, as they may, the architecture of the future by erecting the most sensible and beautiful buildings they can. It is the business of the schools to see to it, so far as we may, that the architects themselves have the good sense and good taste, and the self-reliance and independence of mind which shall qualify them for the this task." The book in which this discussion appears contains a catalogue of the T-square Club Exhibition, held in January and February of this year, and this is illustrated with a number of reproductions of architectural drawings; many of these reveal plainly enough the strong French influence which is variously regarded as the strength and the weakness of present-day American architecture. On the merits of the question under discussion we, as mere outsiders, do not presume to pronounce; it may, however, be regarded as certain that if ever a distinctively American architecture is to come to light—or, as Mr. Sullivan would prefer to say, "breathe like an exhalation"—it will not be by conscious striving after a new style. An unaffected style that is the result of conscious effort is almost a contradiction in terms. A new style will be produced, if at all, as the old styles were produced—by a gradual evolutionary process, arising naturally out of climatic conditions, the character of building materials available, and the habits, needs, and traditions of the people.

H. B. P.

## On Reflection.

### Endowing Scientific Teaching.

MR. ANDREW CARNEGIE'S gift of £50,000 towards

the endowment of the proposed Birmingham University is announced almost simultaneously with the report that he is engaged in furthering a gigantic scheme for creating a practical monopoly which is to absorb the leading iron and steel interests of England, Scotland, and Wales. The coincidence will suggest to many minds reflections on the accumulation of wealth and the disposal thereof with which we are not now concerned. There is one aspect of the matter, however, which should have a special interest for builders and engineers. Mr. Carnegie's gift is subject to the condition that the projected university institute degrees in science as well as classics. He is convinced of the great advantage in commercial life—especially in the iron and steel trades, with which he himself is connected—of a high degree of scientific knowledge, and he thinks that if Britain is to remain one of the principal manufacturing nations she must do something to cultivate a class corresponding to the scientific experts who manage every department of the great manufacturing concerns in America. There is no doubt that we in England have fallen behind some of our rivals in the matter of scientific training, and we are beginning to suffer for it. We do not wish to underrate the value of classical culture, but those who are to be the future captains of industry must—if we are to maintain our commercial supremacy—be willing to specialize on scientific lines, and must have increased facilities afforded them for doing so. We need not fly into a panic because a few locomotives for British railways are being made in America; but on the other hand it is mere folly to ignore the great advances that Germany and America have been making in the higher departments of commercial education. These efforts call for corresponding efforts on our part if we would not be left behind in the race. Of course we are not exactly standing still, but it is well to remember that in all matters educational we in England have a great lee-way to make up. Mr. Carnegie's generous gift will be an appreciable help in the right direction, and as barely £20,000 are now required to complete the endowment fund, there is every hope that we shall see before many years the establishment of a great midland university, which, while affording ample opportunities for the pursuit of learning in the more academic sense, will have a closer and more practical relationship with the actualities of modern commercial life than has ever existed in the case of the older foundations.

### "Serious and Wilful Misconduct."

THIS is a phrase which appears to stand in great need of legal definition. By the Workmen's Compensation Act, 1897, a workman who is injured by an accident is not entitled to compensation if the accident was due to his own "serious and wilful misconduct." But considerable diversity appears to exist in the interpretation of this phrase, which gives rise to frequent argument in the Courts. A case occurred recently in Scotland, in which the Court of Session allowed compensation amounting to 15s. per week for life to a man who had met with an accident as a result of a breach of a statutory rule under the Coal Mines Regulation Act, for which he was liable for three months' imprisonment.

It is true that the workman appeared to be unaware of the rule (he admitted having seen the rules, though he had not taken the trouble to read them), but it has long been held—we believe—as a maxim in English law that illegal acts are not to be excused on the ground of ignorance of the law. The ordinary man may be disposed to ask if an illegal act punishable by three months' imprisonment is not "serious and wilful misconduct," what is? A firm of Edinburgh solicitors have written to Mr. Chamberlain, calling his attention to this case and asking whether he has any suggestion to make as to an amendment to the Act defining "serious and wilful misconduct." Mr. Chamberlain's reply was to the effect that in his opinion the decision of the court was a wrong one, but that this might be righted on appeal. From this reply it would appear that Mr. Chamberlain is imperfectly posted in the provisions of his own Act; one of the sections of which excludes Scotland from the right to appeal in cases of this kind. This, as Mr. Chamberlain's correspondents point out in a second letter, makes a definition of the doubtful phrase even more necessary. It is, of course, possible that the decision of the Scottish Court was influenced by other circumstances, to which the correspondence makes no reference. But on the face of it, it would appear that, in view of this decision, the workman's personal culpability is a factor that may, for practical purposes, be ignored. That can hardly be the intention of the Act, for if so, why mention "serious and wilful misconduct" at all? It is to the interest of both masters and men that litigation under the Act should be reduced to a minimum, and this end would be greatly served by a clear explanation of the meaning intended to be conveyed by this apparently simple phrase.

### The Future of Regent Street.

THE views of an American architect on the street architecture of London cannot fail to be interesting, and we are pleased to find that Mr. Samuel Howe, leaving for awhile the engrossing pursuit of harassing Sir William Richmond, has been giving his opinion on the architecture of Regent Street. That thoroughfare Mr. Howe regards as "the one serious claim London had as a city on academic lines and principles to rank with the capitals of Europe." London has been built in such a haphazard fashion that it is scarcely to be expected that its street architecture should commend itself to one accustomed to the regularity of American cities. Still, Mr. Howe writes in a very tolerant vein; he recognises the real merit of the work of John Nash, the architect who laid out Regent Street in the early years of the present century. Even the fact that most of that work was carried out in stucco cannot make Regent Street contemptible. Mr. Howe's main suggestion—and in this we heartily agree with him—is that in the rebuilding of many of the houses, which is now going on and will be continued as the leases fall in, the architectural character of the frontages should be preserved. Mr. Howe suggests a possible arrangement between the tenants and the Crown (to whom this part of the metropolis belongs) whereby the latter should control the frontages throughout the street, while the tenants should be free to arrange the interiors to meet their own requirements. Whether this is possible or not it is to be hoped that the distinctive architectural character of Regent Street will not be sacrificed to the very natural desire for substantial fabrics and modern conveniences. Nash was not a genius, perhaps, like Wren or Inigo Jones, but his work had a distinction of its own and deserves to be preserved.



# ARCHITECTURE AT THE ROYAL ACADEMY.

[SECOND NOTICE.]

BY OUR SPECIAL REPRESENTATIVE.

ILLUSTRATED BY C. E. MALLOWS.

THAT this age is not an age of art is a truism of which everyone is doubtless well tired. But the fact forces itself into one's existence at every turn, and there is no escaping its blighting influence; it is a fact which blurs the senses and dulls enthusiasm; there is no response to artistic effort, or so little that it counts for nothing. Moreover, there is no kind or sort of knowledge outside a very small minority as to what is artistic effort and what is not. Art is not understood; it is "Caviare to the General." Art to it is paint, and paint of the most insolent kind. Architecture is unknown. That fact alone would prove, if proof were needed, that the Spirit of Art encircles other worlds than ours. If this were an artistic age then architecture would be supreme in Art; no one would contemptuously call architects "mere builders," as Sir W. B. Richmond recently described them in his unfortunate defence in "The Times," or refer to architecture as a "skeleton" requiring the "flesh and blood" of decoration to bring it to rounded beauty. Such a sentiment as that would be laughed at by a schoolboy, who would not require much education to know that architecture was queen of the lesser arts of painting and sculpture, and wholly independent of them; but in this nineteenth century there is no proper order or relation in artistic things. The first is last and the last first, and all is chaos. The Architectural Room at the Academy is evidence sufficient of that. The first is last there with a vengeance, if it is anywhere at all. Architecture to-day in England is not even of sufficient account to be recognised by the president at the annual banquet! We imagine that coloured photographs of the Jubilee Procession are of far greater national importance than the new Government Buildings costing two million of money, and providing an opportunity to architects rarely given in the world's history. A more scathing criticism of the attitude of the Royal Academy of Arts towards art has surely been seldom made, and it is the more eloquent because it was silent. In the face of all this contempt of architecture in high quarters, one cannot help feeling presumptuous in daring to treat of the despised art at all, and certainly not a little discontented at being discovered in that abandoned place, the Architectural Room, taking notes. And the worst of all is that the room itself holds some justification for the treatment, and proves that architecture is not only "Caviare to the General," but to its own professors as well. It is not, therefore, with much enthusiasm we return to our subject again, especially when we are forced to believe, on a second visit, that no very high level (compared to former years) is reached after all.

However, there still remain Mr. Prior's model and Mr. Wilson's interior of Holy Trinity (illustrated in last week's BUILDERS' JOURNAL), and these alone are worth coming back to see again. So is also Mr. Stokes' domestic work, "Cold Ash, near Newbury" (1616), with its delightful plan full of artistic effect, the simple treatment of the exterior, and the excellent use of material it suggests. Mr. Wilson's "Design for Calvary, St. Bartholomew's Church, Brighton," is a vigorous charcoal drawing of a reserved and distinctive design. Mr. Wilson also sends a beautiful drawing of a "Design for a Chalice" for the same church. Another work worth seeing, too, is Mr. Christopher Whall's "West Window of Private Chapel, Douglas Castle, Lanark."

No. 1704, "Altar and Triptych for the Side Chapel, St. Leonard's, Bridgnorth," is a work of much reticence, even severity, and attracts attention by its thoughtful design and good drawing. So does 1711, a most artistic

"Design for a Font," by Ralph Knott. There is an engaging look about Mr. Horace Field's "A Farmery at Burton, Sussex" (No. 1717), which has quite the air of an old farmhouse, and is really a capital study for one. Mr. Ernest Newton is sure to be interesting and artistic in all he does, and his "House at Burley-in-Wharfedale" (No. 1731) is no exception. "The Heights, Witley," by Mr. Paxton Watson, looks much better in this drawing than in the original. The restlessness is discreetly hidden in the illustration which is a very good one.

Mr. Phillip A. Robson sends a drawing of "St. George's Church Schools, Mayfair," No. 1736, a sensible and artistic design which well expresses the purpose of the building.

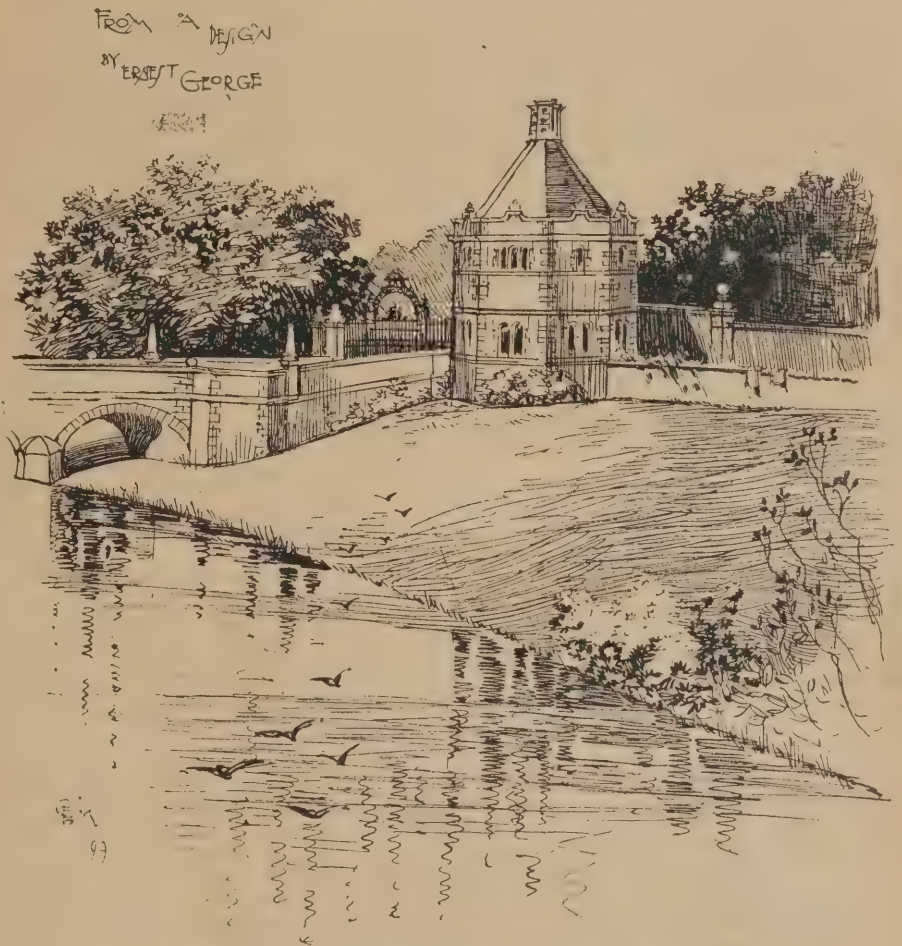
"The Entrance Hall, Embley Park, Hants," by Mr. H. O. Cresswell, looks very interesting, but it is hung too high to judge properly; the same remark applies also to Messrs. Hall, Cooper and Davis's design for "North-East Angle of New College, Scarborough" (1695), a good and vigorous water-colour drawing of an excellent design. Nos. 1791 and 1825 are

good work in No. 1623, "New Screen, Ipstones, Staffordshire," and in No. 1656, "New Stables, Whitley Hall, Yorkshire."

Mr. Edward P. Warren in the "Church of Saint Martin, Bryanstone, Dorset," has a good and correct, but, nevertheless, somewhat nerveless design, carefully drawn in sympathy with the work.

No. 1735, Hull Public Library, prompts the question: Why was this accepted, and the first premiated design rejected? We could not find one redeeming quality in this exhibit, or in No. 1659, "Four Small Country Houses in Southbourne, Hants, and Freshwater, Isle of Wight," which are *amazing*! What have Hampshire and the Isle of Wight done that they should suffer in this way? No. 1629, "St. Katherine's Lodge, Regents Park, N.W." Wonderful! All real ruled lines, too. There is no ordinary "free" hand in this. In the Academic Gothic style we should say, with an accent on the "dem." But why was it allowed out of the nursery?

We cannot discover the principle which per-



FROM A DESIGN FOR A BRIDGE BY ERNEST GEORGE.

also by Messrs. Hall, Cooper and Davis. The former, "Four Houses at Scalby, Yorkshire," has nice quality; and the latter, "Houses for the Gas Company, Scarborough," is very interesting, with the open arcade on the ground floor with its pleasant treatment of bay windows.

Messrs. Niven and Wigglesworth have a design of good quality in No. 1611, "Hillington, Walton-on-Thames," with an original and effective treatment of semi-circular bay windows. The pen drawing by Mr. F. L. Griggs shows thought and artistic power.

Messrs. Wimperis and East in 1620, "Proposed Rebuilding of London Newspaper Offices," show much strength and power of design, and knowledge of the right use of material. The placing and design of the frieze of windows under the main cornice are both well cared for, and contribute in a great measure to the success of this design.

Mr. Sidney K. Greenslade in 1610, "A Street Front," has a thoughtful and original design daintily drawn. Mr. Gerald C. Horsley shows

mitted this "drawing" to be hung. Really the Academy should draw the line somewhere with these riddles—they are apt to get exasperating. We give it up, and turn for consolation to have another look at Mr. Prior's inspiring model, and being refreshed, turn to No. 1624, "Cavenham Hall, Suffolk," by Mr. A. N. Prentice; this is illustrated by a bright and clever drawing, which is nevertheless wanting in tone and repose. The design is a very interesting adaptation of seventeenth century work, wanting in cohesion and concentration of effect. There are, however, many picturesque and sketchable corners about the work, which promises well. Messrs. Rogers, Bone and Coles send designs with very nice proportions and qualities for "Pulpit and Bench End in Nave, St. Brelade's Church, Jersey."

Mr. Walter Millard contributes some pleasant works in Nos. 1668, "Residence, Black Rock, Brighton," and 1678, "New Entrance Gates and Kitchen Wing, East Malscals, Sussex." These are both designs founded more or less on precedent, yet having distinct individuality



of a serious and sober kind akin to the old work itself. Mr. F. L. Griggs illustrates both these houses in a delicate and sympathetic way.

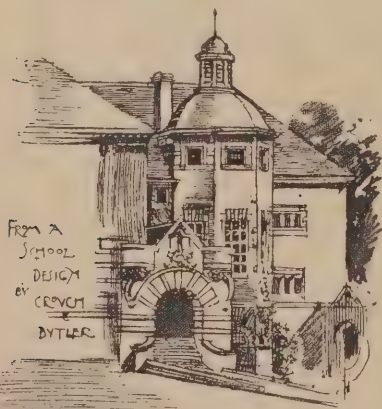
Mr. C. H. B. Quennell sends a capital illustration of an "Entrance and House in Roscroft Avenue, West Hampstead," a simple enough treatment of a Georgian type of house but illustrated in a very taking manner.

Mr. Beresford Pite, in Nos. 1850, 1851, 1852, "Houses and Shops in Harley Street and Bond Street," shows that kind of simplicity which has knowledge and power behind it,—the kind of simplicity which is the "refuge of the complex." Quite another thing is the simplicity aped in Nos. 1786 and 1784, which requires a salutary check. This kind of "simplicity" is merely a cover to ignorance. There is far too much of this kind of thing about nowadays, and it is almost as great an evil as its antithesis.

No. 1730, "Design for Boy's School, &c."!!! Another puzzle. No. 1573, "Union Church, Queen Square, Brighton," by John W. Simpson, has a well arranged plan, but the exterior is much wanting in scale, proportion, and balance of parts. The architecture is heavy and the cupolas crushing in proportion to the space beneath them. The interior shown in a dismal kind of wash drawing is not attractive, but the whole of the work would look far better, doubtless, in execution. The design for the Roedean School, by Mr. Simpson, on the contrary, is captivating, and presents quite the opposite qualities, and, although again inadequately illustrated, still shows great skill in balance and contrast of parts, and in picturesque effects.

Messrs. E. Guy Dawber and Whitwell send in 1653—"Village Post Office, Broadway, Worcestershire"—a design quite in harmony with the rest of the work in that delightful village, and we cannot give higher praise than that. Broadway is fortunate with its architects, who doubtless felt the responsibility to the full of having to touch such a lovely old village street as this.

No. 1655, "Clock Tower and Campanile, St. Michael's College, Tenbury;" 1626, "King's Corner, Biddenham;" 1709, "St. Matthew's Church, Willesden;" 1685, "Tower, St. Andrew's Church, Bedford," and others are contributed by Messrs. C. E. Mallows and Grocock; and No. 1651, "New Higher Grade School, Aston, Birmingham," by Messrs. Crouch and Butler, of that town is an effective and expressive school design. Messrs. Brewell and Baily send a



AT THE ROYAL ACADEMY, 1899.

House at Aspley Heath and a Presbyterian Church at Nottingham, both good designs, the latter illustrated by Mr. Raffles Davison, whose work contributes greatly to the interest and value of the exhibition, and who rarely misses making a picture even out of the most uncompromising material.

A monument to the late Dr. von Stephan, the first Postmaster-General of the German Empire, has been erected in the Dome Hall of the Berlin Postal Museum. It was unveiled on May 1st.

## BRADFORD'S NEW PUBLIC HALL.

### NOTES ON THE COMPETITION.

THE competition for the Cartwright Memorial Hall and Art Gallery, presented to the City of Bradford by the Right Hon. Lord Masham, has now been decided, and the whole of the designs sent in were thrown open to public inspection at the Bradford Technical College, on Monday, May 8th, and were on view for the remainder of that week.

The Corporation are to be complimented upon the fair and open way in which they have conducted this matter, which forms such a complete contrast to the manner in which the recent competition for the new fire station was conducted. Furthermore, it is generally agreed by those who have had an opportunity of seeing and are competent to judge the merits of the designs submitted, that the first premiated set fully deserves the distinction of being selected for execution.

In the conditions issued to competitors the committee, acting under the advice of their assessor, Mr. Alfred Waterhouse, R.A., removed the restrictive suggestions originally made as to dimensions and arrangement of rooms so as to afford more scope to the competitors in the preparation of designs, and agreed to judge on their merits designs submitted upon other lines, a plan which we venture to think might be more frequently adopted with beneficial results.

The particulars issued as to accommodation required, amongst minor conveniences, a large refreshment room, kitchen, &c., with a museum on the ground floor, and art galleries, capable of being used as a suite of entertainment rooms, on the first floor; and it was suggested that the design should be broad and dignified, rather than ornate, and Classical or Renaissance in style.

The site, a magnificent one situated in Lister Park, is at present partly occupied by an old and dilapidated mansion, which is to be removed, and a design for laying out the ground immediately surrounding the Memorial Hall, including carriage approaches, was required to be submitted by each competitor; the cost of this work, however, was not required to be included in the £38,000 to be expended upon the Memorial Hall.

This competition therefore provided a singularly good opportunity for architectural treatment. That it was readily appreciated by the profession at large is proved by the enormous number of designs received—117 in all; the competitors included architects from Ireland and the United States of America, as well as from all parts of Great Britain.

The chief guiding principles to be observed in a building of this character are that the entrances shall be important and direct, and that each apartment of the museum and galleries shall communicate in a continuous line, so that visitors may circulate freely through the galleries in one direction.

This principle has been admirably exemplified in many of the designs submitted, the accommodation given for museum and gallery purposes far exceeding in many instances that provided by the premiated designs; other minor arrangements, however, which are so necessary and important in a building of this nature, are by no means so well worked out, and Messrs. Simpson and Allen are to be congratulated on having produced a thoroughly artistic and dignified plan, which will be found to provide for the practical working necessities in a convenient manner, with as much museum and gallery accommodation as the Corporation should desire for the outlay contemplated. The authors place their central hall immediately opposite the main entrance, with a semi-circular apsidal treatment, two storeys in height; it is flanked upon either side by staircases, which give access to the first floor. The cloak rooms adjoining the principal entrance are particularly well arranged. Each side of the building upon the ground

floor is occupied by museums, connected by capacious corridor.

The kitchen, with scullery attached, placed in the basement, with service lifts a service-room adjoining the banqueting hall on the first floor. It is therefore available for important banquets as well as general use in connection with the refreshment-room which occupies a position at the south-east angle. The steps at the back of the building



AT THE ROYAL ACADEMY, 1899.

leading to the subsidiary entrances appear somewhat awkwardly arranged on plan, but the service entrance and picture entrance are admirably contrived. The ladies' and gentlemen's lavatory, for use in connection with the grounds, are well placed on the west side. The lighting of the whole suite of galleries on the first floor is by double top lights, of the system, as the authors' report naively remarks, "recommended by the late Sir John Millais, P.R.A. It has been already adopted by the Corporation of Worcester, whose galleries have received the unanimous approval of the artists exhibiting there, and by the Corporation of Glasgow for their new galleries now building." The central hall is, however, lighted by high North windows, this being by far preferable to a direct top light for sculpture, as well as giving a finer internal effect.

The total picture-hanging area is 6,948 ft. super, and the floor space of museum galleries 4,806 ft. super.

The authors cube out their building above ground floor at 571'49½ cubic feet, and below at 219'233 cubic feet, which they price at 1s. 0½d. and 8d. respectively, giving a total estimated expenditure of £37,073.

The new building will occasion a complete rearrangement of the grounds in the vicinity of the Memorial Hall. The whole of the land lying between the hall and the statue of St. Titus Salt will be set out for the purposes of the band. In line with the statue and the central axis of the building will be placed a band stand, with a space round for those who choose to sit and listen to the music. Outside this area will be promenades. On the west side the land will require to be lowered by from 5 ft. to 8 ft., and on the edge of the higher ground it is proposed to construct a terrace to command a good view over the visitors promenading below. The conservatories will have to be removed from their present site, and it is proposed to reconstruct them in a line parallel with the axis of the building, and with one end almost opposite the approach from Selborne Terrace.

The external treatment of the building is a type of free Renaissance, with the carriage porch taken up two stories, forming a balcony at the first floor level, entered from the reception hall. Above it is crowned with a lantern and cupola. The defects in the design of the south front, which the authors will probably see their way to overcome in execution, are the manner in which the windows of the ground floor cut through the pedestals of their order, and the somewhat flimsy decorative treatment over the heads of these same windows; otherwise it appears well balanced and composed.

The architects are prepared to commence the work at an early date, and it is calculated

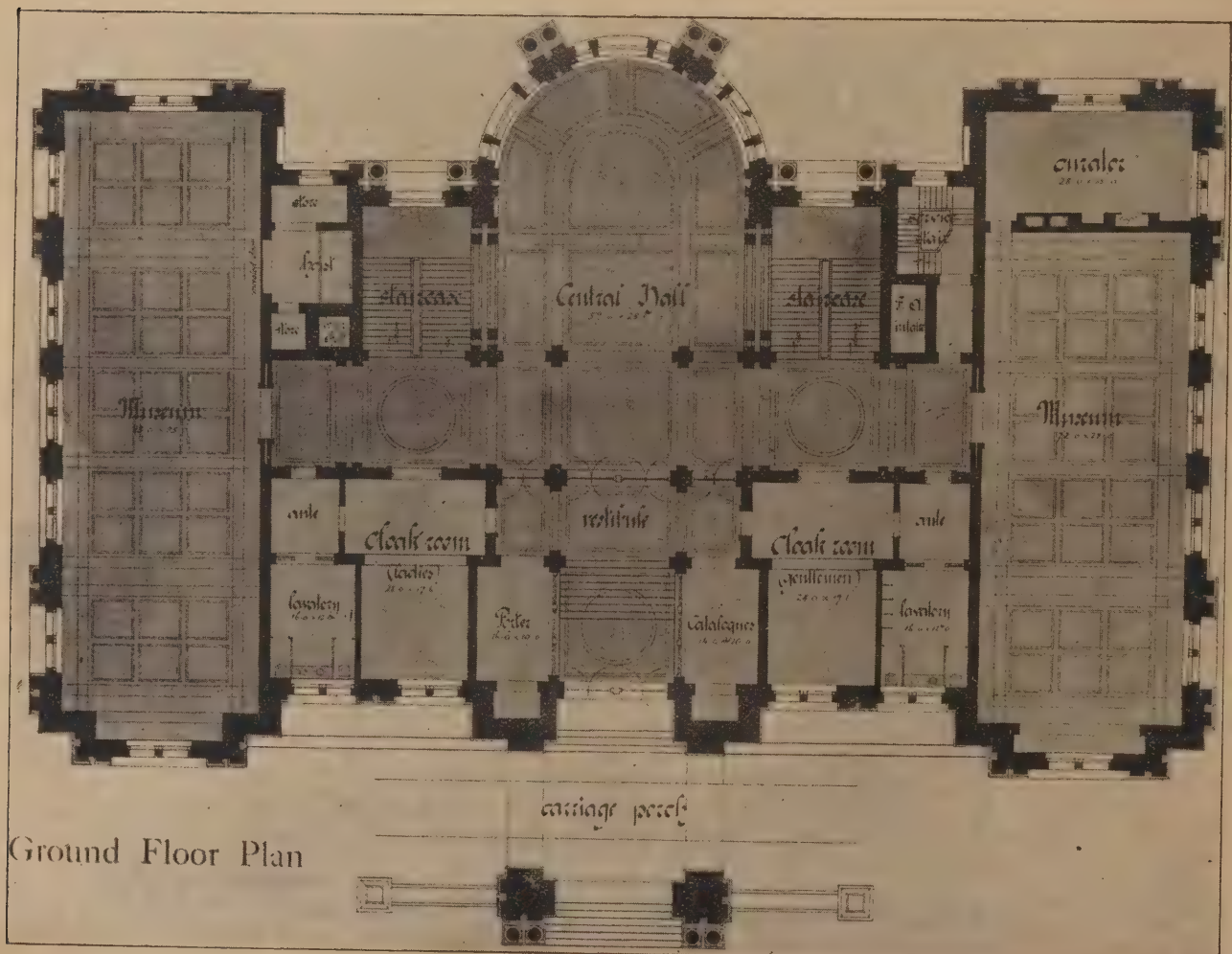


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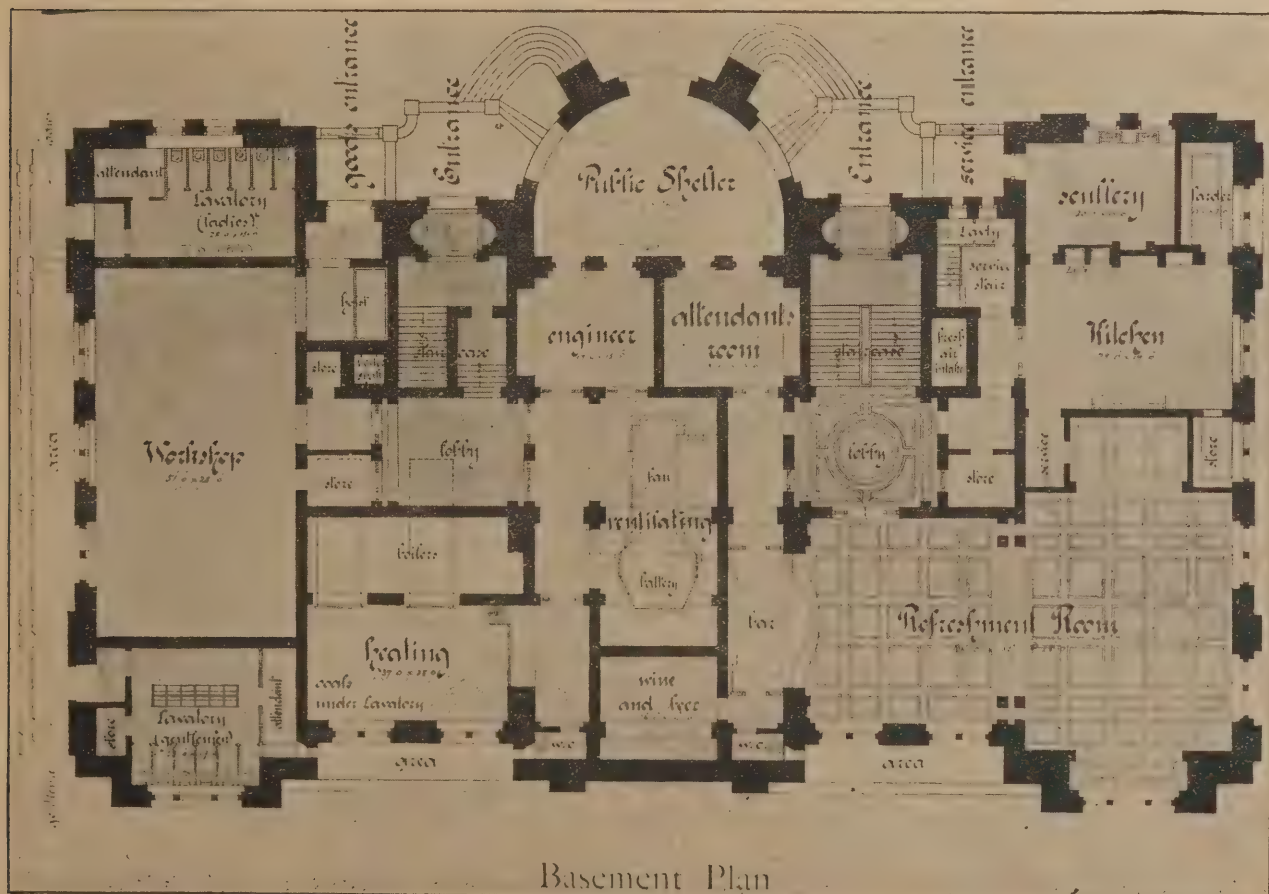
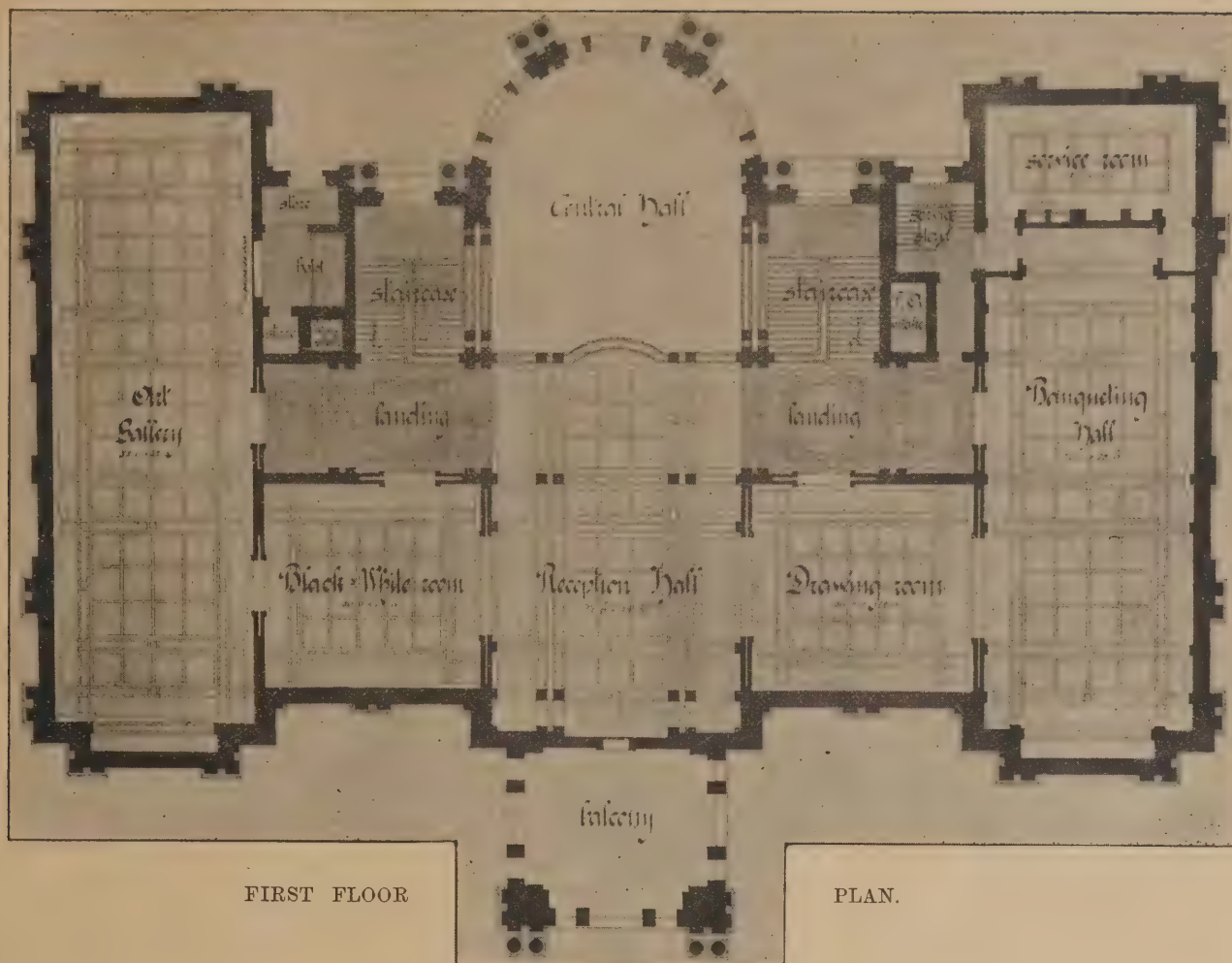




SOUTH ELEVATION.







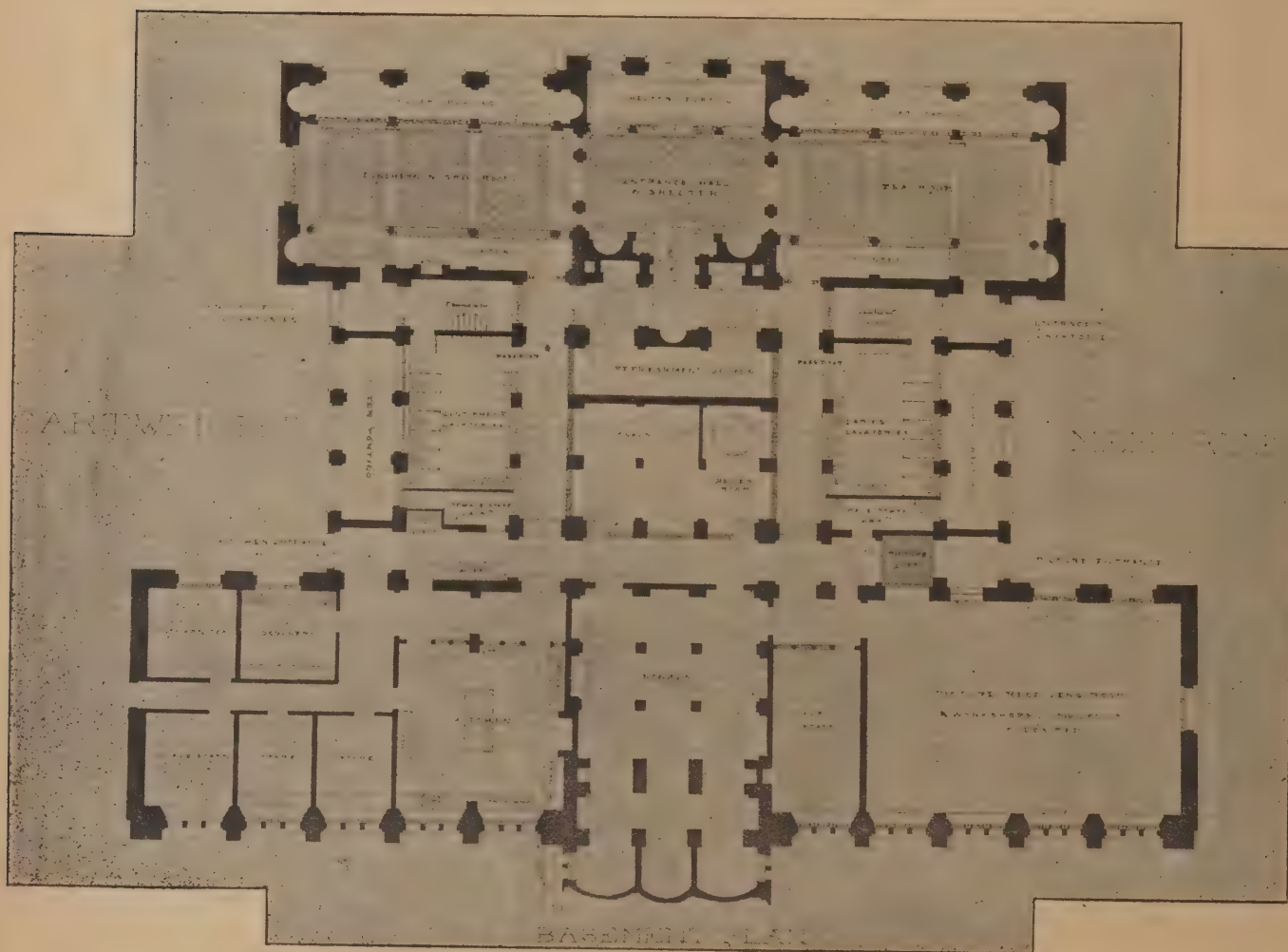
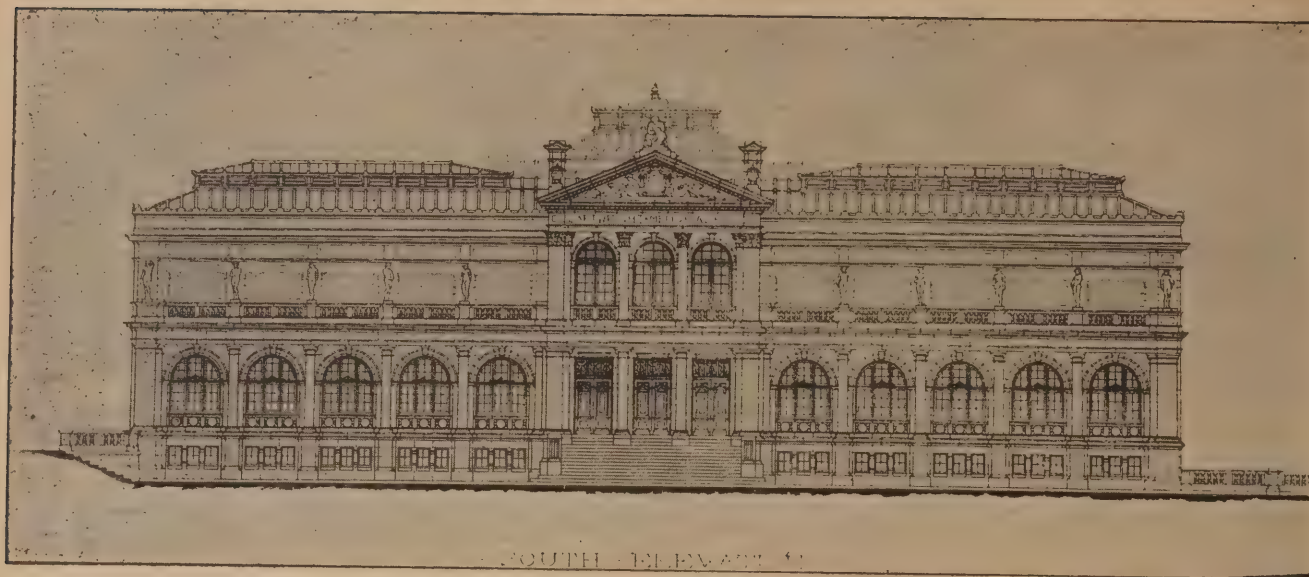


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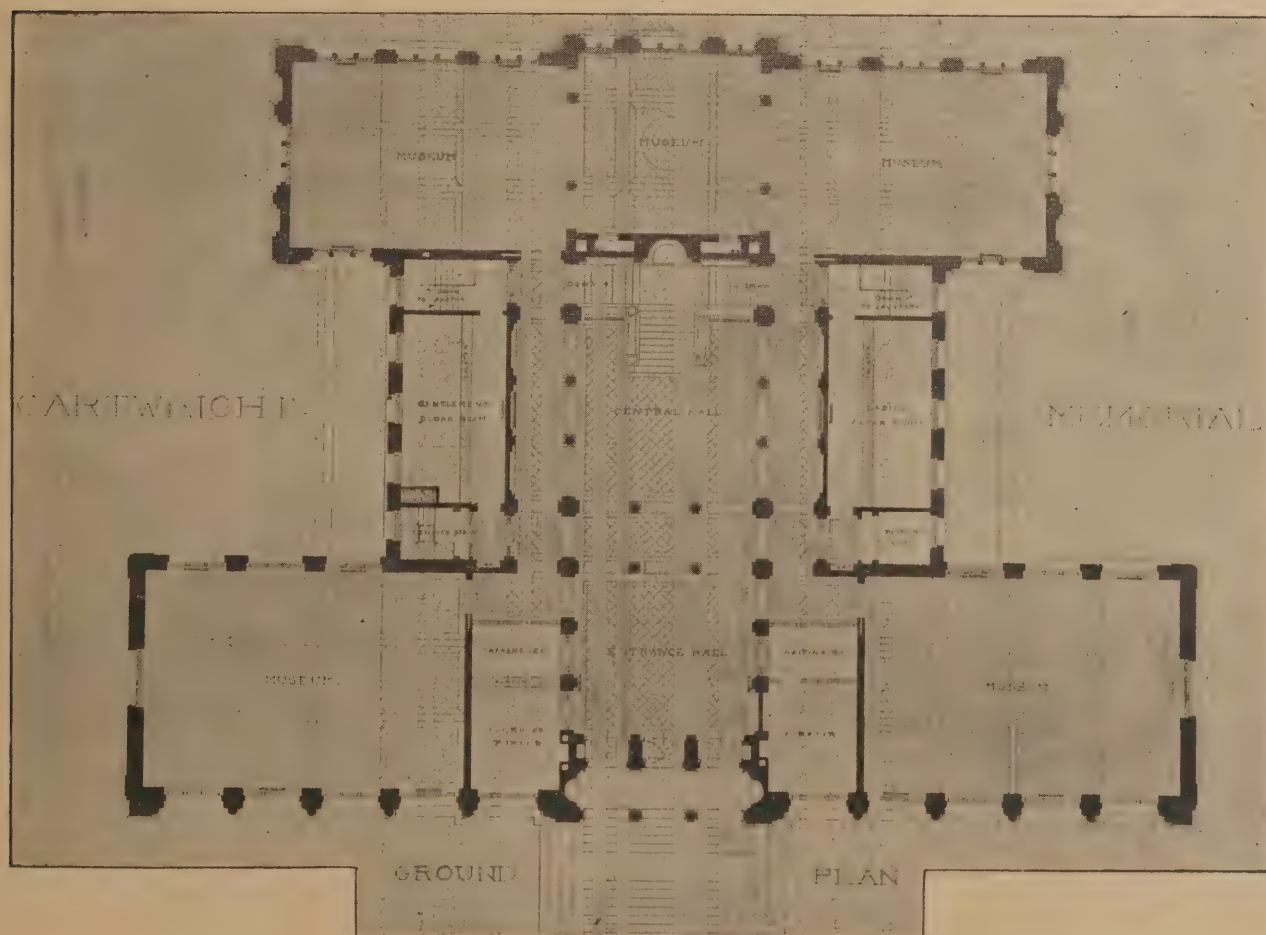
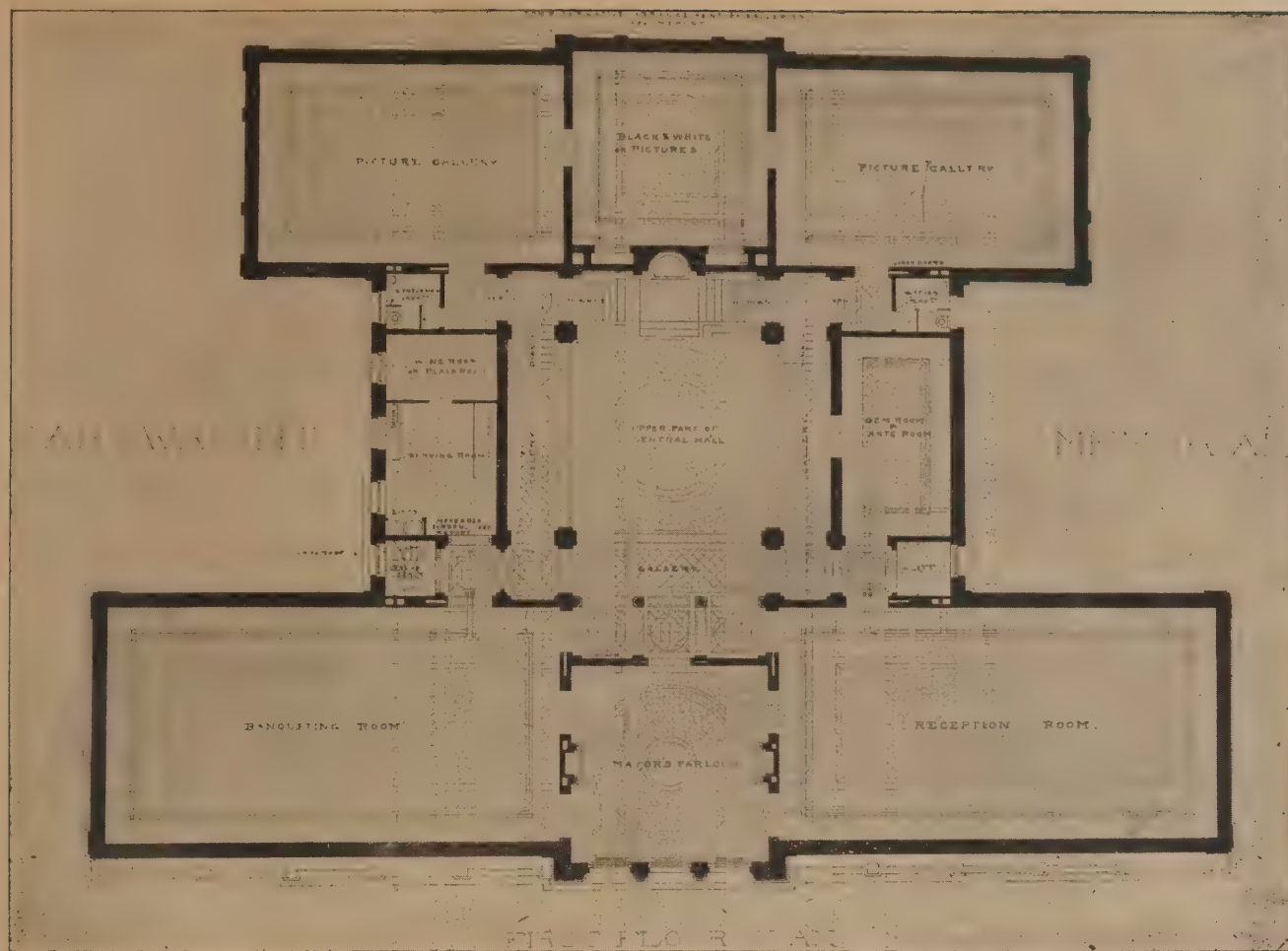


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that about a couple of years will elapse before the building is complete. Mr. Cox, the Bradford city surveyor, had a consultation with the architects in London on Friday, the 5th inst., and it was arranged that one of the partners of the firm should visit Bradford in the following week to confer with the committee.

The second premiated design, No. 70, is by Mr. A. R. Jemmett, who cubes his building out at 649,041 cubic feet, which, priced at 1s., gives £32,452. The author places his museum on the north side, with two smaller apartments at the South-East and South-West angles, the central hall being mid-way between them. Shelters are placed on the east and west sides, while a luncheon and grill room and tea room are placed on either side of the entrance hall on the north front. The central hall is lighted from the top and has a gallery round it. The galleries are not so well arranged for receptions, and the plan generally is complicated, and lacks that simplicity and directness which is the charm of the first premiated design. This description applies somewhat to the architectural treatment of the exterior, with its arched ground storey, figures above, and the broken lines of the roofs, which display the skylights to light the art galleries.

The interior is arranged with good effects of vista, and the entrance from the south front with the staircase at the end of the central hall and statue of Cartwright in niche above, remind one forcibly of the Natural History Museum, Kensington.

No. 44, by Messrs. Wm. A. Pite and R. S. Balfour, the third premiated design, is on rather different lines from the two other premiated designs, inasmuch as the main axis of the central hall is at right angles to the north and south axis of the building. In addition to the south entrance important entrances are provided on the east and west sides; the principal staircase is placed at the east end of the central hall. The entire north side of the ground floor is occupied by a spacious museum divided into three portions with another annexe at the S.E. angle. The auditorium is placed in a corresponding position at the S.W. angle. Cloak rooms are well placed, though not so well worked out in detail as by other competitors. The art galleries are placed over the museum, and the reception rooms arranged *en suite* on the south front; no gallery is provided to the hall.

The elevations are treated in a dignified manner with an order and rustications, the south front being divided into a centre and wings upon either side.

Of the remaining 114 designs much may be said; an exceptionally good average has been maintained, few are radically bad, many are good, and a few run the second and third premiated very close, though we cannot say they are superior to either of the latter, and they are distinctly inferior in arrangement to the first premiated design.

No. 24, Messrs. Lanchester, Stewart, and Pickards, place their principal entrance on the south front, with an entrance on the west side for festive occasions; the central is treated with columns and gallery over, while the museum occupies the north and east sides of the ground floor. Ladies' and gentlemen's cloak-rooms adjoin the side entrance. The galleries are placed over the museum, and the reception-rooms on the south and east fronts. The external treatment is severe, and requires fitting together. They cube their building at 10d. and 8d.

Mr. T. S. Gibson, No. 5, places his refreshment room upon the ground floor with service room, and gives two side entrances. The hall placed north and south cloak rooms in good position, but require amplifying; the galleries are well arranged with the reception rooms on the first floor. The external treatment is of the character usually adopted by this architect, the south front having rusticated basement, wings and central feature, the latter forming an apsidal porch with a statue of Cartwright.

No. 35, by Mr. S. B. Russell, London, hung (joining that of his late partner Mr. Gibson), plays in the external architecture the same style and feeling. The central hall is, however, placed east and west with staircases at either

end leading to an intercommunicating gallery. The reception rooms are on the south front. Cloak room accommodation is well-arranged and worked out; no light is, however, provided for the workshop which occupies a position in the basement beneath the central hall. The entrance for pictures is through the shelter, and the passages in the basement would be dark. Drawings are good, but exception must be taken to the grotesque porch on the south elevation.

No. 9, by Mr. A. D. Sharp, London, shows a central hall with columns and pilasters supporting gallery at first floor level; the plan requires, however, a great deal more working out.

No. 11, by Messrs. H. and E. Martin, of Bradford, gives a central hall entered from the south front, with staircase on the north. No. 38, Mr. J. Hatchard Smith, London, shows a large undivided area for museum purposes on ground floor; the staircase, however, appears poor for the buildings; service stairs adjoin the side entrance, large refreshment room is provided in basement, but the cloak room accommodation is ill considered. The external treatment is columnar, with rusticated and pedimented windows on the ground floor.

No. 78, by Mr. A. Brunnell Thomas, shows a good external treatment, with rusticated pilaster windows in between an order of pilasters; the sculpture is very well drawn, and the plan shows a central hall placed east and west, with central and side entrance. The museum galleries are well arranged, and the first floor is better arranged for art exhibitions than for reception purposes. The cloak rooms are badly arranged.

No. 34, by Messrs. Allen and Shields, shows centre and side entrance, and a curator's private entrance; the galleries are well arranged for exhibitions, though the lavatory accommodation is both ill arranged and ill considered. They provide a good central hall.

No. 15, by Mr. H. R. Appelbee, London, shows a refreshment room on the ground floor with a good north museum and circular drive. Mr. J. Coates Carter, No. 16, has sacrificed his museum for the entrance and central floor space, which, however, he has incommoded with columns and pillars; he has given a huge staircase and a curious triangular porte cochère. The shelter is no less than 34ft. from front to back. Elevations are monumental.

Messrs. Graham, Nicholas and H. E. Kirby show a dignified, though somewhat domesticated, external treatment. The plan is palatial and appears somewhat costly. The minor accessories are unfortunately not well arranged.

No. 16, Messrs. John Sutcliffe and Laurence Buck, of Chicago, U.S.A., shows a large hall and palatial staircase; the plan is generally well-arranged for museum and gallery purposes. No. 42, Mr. A. J. Rowley, of Oxford, shows a well-arranged plan with connected museum and galleries; the elevations, however, are inferior.

No. 23, Mr. J. W. Stonhold, London, shows a central hall dividing museum into two portions, the kitchen is on the ground floor, staircase poor and first floor indifferently arranged with mediocre elevations.

No. 25 appears to be an alternative scheme by Mr. Coates Carter, of Cardiff, with a circular central hall and a circular external staircase to first floor on the south front. Messrs. Cheston and Perkin, London, send a good set of plans, No. 27, with museum and galleries well connected together, good elevations, rusticated basement with circular windows and a range of rusticated and pedimented columnar windows on the ground floor with central loggia and circular pedimented wings, a very careful set of drawings. No. 31, by Mr. W. P. Sanders, Bristol, shows an ill-arranged refreshment room. No. 21, by Messrs. Battery and Birds, gives a museum divided into back and front portions with the porter's room at the side, but the plan is bad in respect of the arrangement of refreshment rooms.

No. 45, by Mr. G. C. Lawrence, Bristol, shows an octagonal central hall, 40ft. by 40ft., rather cramped staircases, and lofty domical treatment over hall with windows in the drum. Nos. 46 and 47 are both out of the running.

No. 48, by Mr. Jas. Cook, of Liverpool, shows a monumental architectural treatment, with the museum better arranged than the art galleries, which are too disconnected; these drawings appear curiously like No. 25 in manner of finish. No. 49 is a very poor plan. No. 50, by Messrs. John Kelly and Son, of Liverpool, shows a square central hall carried up as an external feature in the elevation, with groups of statuary on the angles, which are canted to provide space for same. No. 51, Mr. Thompson James, of Leeds, shows a bold architectural treatment with large museum accommodation, but defective in other respects. No. 52, Messrs. Thos. Worthington and Sons, of Manchester, shows a very good elevation and well worked out plan, with the mayor's parlour between reception hall and banqueting hall. No. 53, Messrs. Alfred Cox and F. S. Clapham, shows a severely monumental architectural treatment, which we fear would look heavy and ponderous in execution; the plan has good points and bears great similarity to No. 52.

No. 54, Messrs. Scott and Scott, of Drogheda, shows the kitchen on the ground floor, and gallery plan defective, architectural treatment severe.

No. 116, Mr. H. Heathcote Statham, London, shows a monumental south elevation with good internal vistas, front principal entrance and side entrances, with the staircase at one side of centre hall, reception rooms well arranged. No. 106, Mr. Thos. Davison, London, sends a well-arranged plan, with the exception of the cloak rooms, and monumental elevation in good style. No. 107, by Mr. J. G. D. Armstrong, of Tunbridge Wells, and No. 84, by Mr. F. Anderson, London, show rectangular central hall and two octagonal halls on first floor.

## ROUND TOWERS OF IRELAND.\*

By ANTHONY SCOTT.

IN selecting the subject of the present paper, I have been actuated by a desire to reopen for controversy a subject which appears to have lain practically dormant for at least some time past. The subject of the "Round Towers of Ireland" is one that would fill a fair-sized volume. It presents dimensions and outlines far too wide for the scope of a single paper. To trace clearly even in outline, to compress, and at the same time try to elucidate many of the absurd theories put forward, would be simply impossible. However, I shall try, even imperfectly, to describe the buildings as I found them, and compare them with the theories of learned gentlemen who have devoted some time and study to the question, so far as these theories, &c., are applicable to them. The question is one well worthy the attention of the learned antiquarian and the scholar. It seems to me a pity that any doubt should exist on the subject, and I fail to see a just reason for doubt, in face of the fact that the dates of the erection of some at least of the towers are recorded in the "Annals of the Four Masters," a work admitted by historians of all shades of thought in the kingdom and in Europe to be the most respected, reliable and truthful record of events in Europe to-day. To assert that the round towers are the "Conquerors of Time" is to express a very great fallacy. At the present day we have about half the number standing of which history gives us a record, and these are in different stages of dilapidation and decay, and they also are bound to perish and pass away with the conquering hand of Time. It is true that a fair number of the towers still lift their heads in sublime grandeur to-day, thanks to the fostering care of some private gentlemen, our antiquarian societies, and in later years the Government of the country, who have with praiseworthy zeal at last come to the rescue of our ancient monuments. The period at which the towers were erected appears to be the real bone of contention, and it is to this I would particularly ask your

\* A paper read before the Society of Architects on Thursday, April 27th.





OAKWELL HALL, YORKSHIRE: ENTRANCE FRONT. SKETCHED BY JAMES PARISH.

special attention. The object for which they were designed and erected appears to me to be the only other question requiring further elucidation than it has already obtained.

#### Diversity of Opinion.

In the early part of the present century the question of the origin and uses of the Round Towers received very considerable attention, and was very well handled by several parties holding diverse views on the subject. Tons of paper and barrels of ink have been wasted upon the subject by men, many of whom were very learned authors and painstaking historians, but who lacked an intimate knowledge of the Gaelic race and language and the rise and development of Ancient Irish Architecture, or the primitive Architecture of European or Asiatic countries. It has, with these writers, generally been the case of one commenting upon another in successive stages, combatting the views of their neighbours and predecessors while trying to advance their own notions on the subject, demolishing one house of cards to erect another on its ruins.

#### Action of the Royal Irish Academy

So distracting, absurd, and confusing were the expressed opinions of every writer on this subject of Irish antiquities in the early part of the present century, that the Royal Irish Academy (one of the most distinguished and learned bodies of antiquaries in Europe) offered a gold medal and prize of £50 for the best essay on the "Origin and Uses of the Round Towers of Ireland." A clause in the conditions of the competition made it incumbent on competitors to make a careful survey of at least a large number of the then existing remains of the Round Towers, and at the same time to make a careful comparative analysis of the masonry of the Towers, and the masonry

of the ecclesiastical buildings always found in connection with or adjacent to the Towers. It was then for the first time in the history of the controversy that the subject was taken in hand in a practical way by a practical and educated man, and one who by the glorious record which he has left us in his writings, has proved to the world his fitness for the work which he undertook to do.

#### Dr. Petrie's Work.

George Petrie, LL.D., R.H.A., V.P.R.I.A., it was, who, for the first time in Irish history, cleared away the accumulated rubbish of ages, with which time had surrounded the Round Towers. Under the influence of his pen and his brain, the mists, the doubts, and legendary romance that had up to that time enshrouded the Round Towers of Ireland were lifted and cleared away for ever. The Royal Irish Academy, in 1833, after careful study and consideration, unanimously voted Dr. Petrie the Gold Medal and Prize of £50, which he richly merited. Dr. Petrie having been engaged on the Ordnance Survey of Ireland, under Colonel Sir Thomas Larcom, enjoyed peculiar facilities for prosecuting his inquiries and research. Sir Thomas Larcom, R.E., Superintendent of the Ordnance Survey, gave him every possible facility, encouragement, and assistance while engaged on the work, and in the elucidation of Ancient Irish Manuscript Documents he has had the assistance of the two best Irish scholars of the century, John O'Donovan and Eugene O'Curry, also fellow-workers on the Ordnance Survey. In addition to the above-named advantages, Dr. Petrie had free access to and made close examination of the Ancient Irish Manuscripts and other kindred documents of historical interest, preserved in the British Museum, Trinity College, Dublin, the Royal Irish Academy, and the Arms Office, Dublin Castle, and everywhere else in the country where documents of the kind had been stored and preserved.

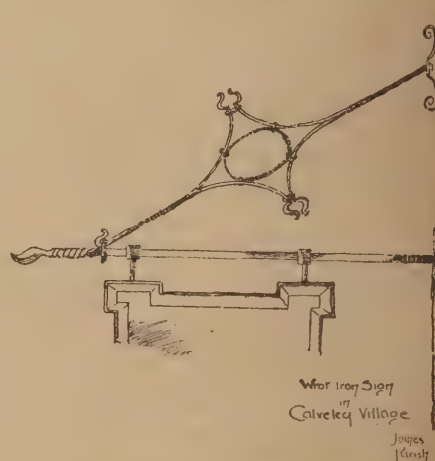
#### Scarcity of Irish MSS.

It is greatly to be deplored that the documentary treasures mentioned fall far short of the number of manuscripts which might have been preserved, and that because of the wanton and deliberate destruction of such documents by Government officials of bygone days. As regards the destruction of Irish Manuscripts, I take the following quotation from Mr. Joseph Salmon's valuable essay on the Round Towers, published in Belfast in 1886: "The policy which the representatives of English rule in Ireland pursued towards the Welsh Manuscripts, they enforced against the Irish, also visiting our native records with every species of hostility." Dr. Rothe, Bishop of Ossory, in James the First's reign, testifies in his "Amacleta" (p. 342) that when the alien authorities became aware of a MS. History being in the hands of a private person it was immediately begged or bought, or threats were employed to obtain possession of it, if other means failed, so that a man's life was endangered by resistance to their will. He names Sir George Carrew, Governor of Munster and author of the famous work, "Pacata Hibernia," as guilty of notorious

robberies and ravages thus committed upon written records. The destruction which this man wrought in a single province among our ancient memorials Sir Henry Sydney and other deputies extended to the entire Kingdom, their conduct encouraging the belief that it formed part of their office to subvert every trace of antiquity in the country (p. 343).

#### Wanton Destruction.

Dr. Lynch avers ("Cambrensis Eversus," Vol. I., p. 337) that wherever Elizabeth's troops were quartered they rifled the houses of friends and foes indiscriminately, carrying off all Irish MSS. which they could possibly lay hold of. A dearth of Irish MSS. was thus entailed to succeeding ages. An excellent Irish scholar, Dr. W. K. O'Sullivan, in his introductory volume to Eugene O'Curry's lectures, says:—"During the first part of the eighteenth century the possession of an Irish book made the owner a suspected person, and was often the cause of his ruin. In some parts of the country the tradition of the danger incurred by having Irish MSS. lived down to within my own memory, and I have seen Irish MSS. which have been buried until the writing had almost faded and margin rotted away, to avoid the danger which their discovery would entail at the visit of the local yeomanry." Numberless cases of a similar character could be given, and were it necessary for purpose of this inquiry, the most reliable English, Welsh, Scotch, German and French historians might be quoted as deploring the loss which the history of mediæval civilization has suffered



SKETCHED BY JAMES PARISH.

at the hands of official vandals in Ireland. To those causes must be attributed the mystery and uncertainty which has hung round the tower building period in Ireland. But in the early part of the present century, with the partial recognition of civil and religious liberty, a happier state of things came into existence. Such of the old Irish documents as escaped the vandalism of bygone days were unearthed with a new enthusiasm, and the contents critically investigated and translated by O'Donovan, O'Curry, Petrie, and others of lesser note.

(To be continued.)

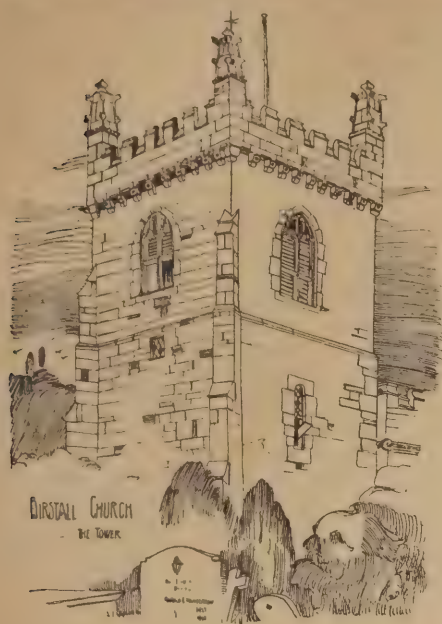
**Bury Art Gallery and Library.**—The memorial stone of a fine building which is to be used as an art gallery and public library, was laid at Bury a short time ago. The building has been designed by Messrs. Woodhouse and Willoughby, of Manchester, and is to cost about £21,000.

**Working Men's Homes.**—At a meeting of the directors of the Burton-on-Trent Artisans' Dwellings Company, tenders were accepted for the construction of the first block of forty houses to be erected on the land the company have taken from the Marquess of Anglesey. The land, which has been acquired on favourable terms from the Marquess, will provide accommodation for 150 cottages. Mr. Thomas Jenkins, of 35, High Street, Burton-on-Trent, is the architect.

The Tower Colchester Church  
Designed by James Parish.

SKETCHED BY JAMES PARISH.





SKETCHED BY HAROLD E. HENDERSON.

## RAMBLING SKETCHES IN YORKSHIRE.

BY HAROLD E. HENDERSON.

THE following is an account of a trip made by a party of Leeds Architectural Sketchers to places of interest in Yorkshire for the purpose of study and enjoyment. Upon reaching Calverley Station we pause before proceeding to our destination, Calverley church, to inspect Horsforth Old Hall, a very picturesque old mullioned house. Surrounded by trees it looks a quaint old-world place, a glimpse of which takes your thoughts back to the time of rapiers and periwigs, and makes you think of the good old Yorkshire gentlemen who lived and died here. The sturdy looking stable buildings, in quiet keeping with the house, are well worth noting. We then went towards the church; crossing the Aire we climb up a steep hill upon which stands the pretty village of Calverley.

The church nestling in and surrounded by trees, is a building of sandstone in almost every style from Norman to Perpendicular, and, while not boasting of elaborate detail, it attracts the eye by its simplicity and quiet dignity, which make it both interesting to the architect and picturesque to the wayfarer. It consists of nave, aisles, chancel, porch, and tower at the west end. The interior does not call for particular mention, except for the Jacobean font cover of fret-cut and carved oak, mellow with age, a good example of seventeenth century woodwork. The east window is filled with some capital stained glass; fragmentary, it is true, but the colours are there, and the jewel-like effect when the sun shines through is beautiful in the extreme.

Adjoining the church is a capital old Georgian stone house, roofed with stone slates of various colours, and coated in parts with green lichen. It is worth studying because of the rather unusual refinement of the mouldings, and because of the capital fenestration, the importance of the various stories being admirably shown by the respective importance in detail of the windows.

We then proceeded into the village, where we came upon some very picturesque cottages with large stones for the jambs, and a stone of herculean size for the head. There are also one or two capital inn-signs, in fact, many a little thing worth noting. Up one of the principal streets is the Old Hall, the ancient residence of the De Calverleys, now divided into cottages. There is some rather good oak wainscotting here of the sixteenth

century. Some parts of the Hall date back to Henry VII.'s time.

The following Saturday we visited Birstall, about seven miles south-west from Leeds, a large village, chiefly built of stone. There are plenty of small notes worth taking by the architectural explorer. The church of St. Peter, in a thickly wooded plantation, was, with the exception of the tower, entirely rebuilt in 1866. The tower, of massive and sturdy build, is said to have been erected in the eleventh century. It has angle buttresses at three of the corners with good weatherings; in the bell chamber are two windows with perpendicular tracery, which look very effective in the mass of plain stonework. The battlemented parapet is projected on stout stone corbels with pinnacles at each corner, which have been cut off at the top and replaced by a Renaissance finial. A small, circular-headed window lights the stairway.

There are several mural tablets in the tower, as well as a nicely designed font.

In the churchyard are a lot of sculptured gravestones, some of which are of praiseworthy design. Leading out of the church at the north-west corner is a very nice Lych Gate, roofed with large stone slabs. Near the church is a very picturesque inn, built of stone and rough casted, with a simple, wrought iron projecting sign, a style of inn which is slowly dying out to make way for the gin palace style—red brick and plate glass, with a "little" ornament.

Kiddall Hall, near Barwick in Elmet, was then visited. The present resident, a jovial farmer, heartily gave us leave to sketch and examine the splendid old hall, in which it was his fortune to live. The house, of mellow-tinted sandstone, is covered with beautiful stone slates. It was anciently called Kidd Hall, and was the home of the Ellis family who came here in the twelfth century. It has as usual its romance and its ghost; tradition says it is haunted by one of the Ellises, who was killed by the Parliamentarians in the civil war.

There are inside the hall some very nice oak panelling and chimney pieces of the sixteenth century. But perhaps the chief point of interest in this fine old manor house is the beautiful bay window added in the fifteenth century. It looks as if it had been taken from some other position and planted in its present position; very likely it was a window taken from the chapel which has now disappeared.

It is filled with diamond panes with painted glass shields, containing armorial bearings. A Latin motto runs round the parapet, and above this is a battlemented parapet with crocketed pinnacles; the frieze is adorned with a trailing pattern of vine leaves very conventionally treated. Next to the large bay window is a large timber gable of extraordinarily massive timbers, but now almost covered with ivy. On the east side of the

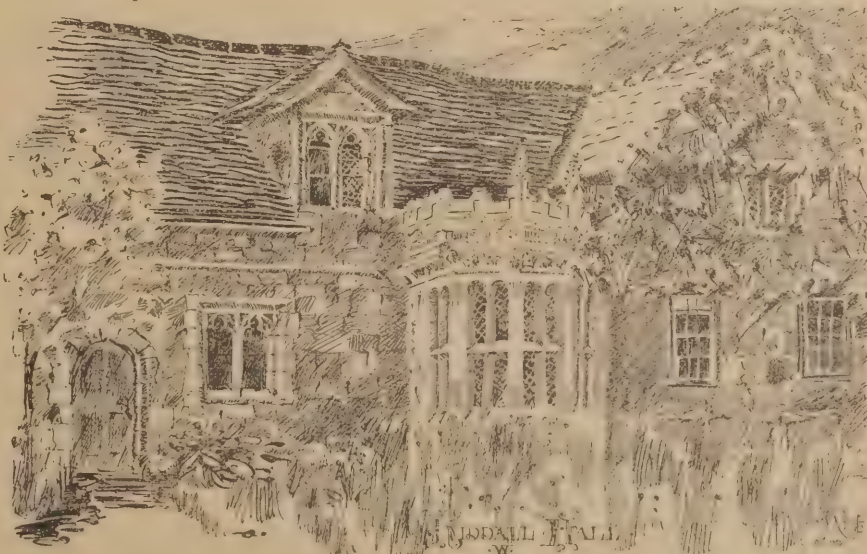
house is a very beautiful bay window, long and low, with splayed mullions and roofed with stone in graduated splayed courses. Note may be made of the clever way the cornice of the bay window is mitred with the string course of the house which is on a higher level than the bay cornices. In fact, the house is full of practical suggestions like this.

The stable buildings are very fine; the barn especially is interesting, because of the massive timbers reaching up into the blackness of the roof above. I cannot tell why the architectural students do not sketch and study these beautiful manor farms and cottages more than they do, for some great and useful lessons can be learnt from them. They would do well to notice the honest, straightforward and simple way in which difficulties are got over, the solid looking chimneys suggestive of the cosy ingle nook inside, the masterly breadth of wall surface, and finely proportioned door and window openings, and try and embody these features in their own designs.

Our next visit was to Oakwell Hall, near Birstall, another typical Yorkshire house. Set back about 50ft. from the road, and surrounded by a low wall inclosing the garden of holly trees and firs with hollyhocks and old world looking flowers, with its narrow path to the porch of diamond set stone flagging, it makes a fascinating picture of homely life and comfort. Entering the porch with its stone seat and ceiling enriched with a diamond-shaped piece of capital ornamental plaster work, we pass through the iron-studded and heavy-looking oak door into the spacious vestibule of delicately yellow-washed walls, and from thence into the hall.

This fine room is panelled on all sides with oak, and goes up two stories, with ornamental plaster ceiling, and music galleries on either side. The large window of thirty lights is filled with diamond panes, with lead 1in. thick, and nicely designed casement fasteners. There are 2,000 diamond panes in this window. In one corner of the hall is the staircase, which winds upwards to the galleries, and is inclosed and shut off by a small dog-gate—a feature very seldom seen now, its use being to keep the dogs from climbing the stairs. The school-room is also a fine room, being panelled up to the ceiling. The chimney-piece is of stone, with oak overmantel.

At the back of the house, and shut in with high walls, is the well-kept lawn, looking fresh and green in the sunlight. The mullioned windows, filled with small panes, are well placed and nicely proportioned. The projecting chimneys are very nice also, being massive, with nicely designed weatherings placed in the proper spots. Oakwell Hall is the original of "Fieldhead," in Charlotte Brontë's "Shirley," and is much visited in consequence. The old moat is still to be seen, filled with green-looking water, the home of the toad and water rat.



KIDDALL HALL, YORKSHIRE. SKETCHED BY H. SIDNEY RHODES.



## OUR COMPETITION.

### EXTENSION OF TIME.

IN response to the request of several intending competitors who desire further time for the preparation of their designs for a Country House, we have decided to extend the time allowed for sending in designs to **Wednesday, June 7th**. Those who intend to compete, however, must intimate to us their intention to do so not later than **ten days before** the Competition closes. Full details as to the conditions of the competition, in which premiums amounting to **Thirty-four Guineas** are offered for the three best designs, appear on p. 200 of last week's BUILDERS' JOURNAL AND ARCHITECTURAL RECORD.

## Correspondence.

### FITTING UP AND SANITATION OF COWHOUSES.

To the Editor of THE BUILDERS' JOURNAL.  
LONDON, W.C.

DEAR SIR,—In your issue of May 3rd, your correspondent, Mr. S. S. Platt, gives a reference to "Specification," No. 3, page 249. Concerning this matter may we be allowed to point out that other information upon cow-houses appears on pages 29, 285, 291, 294, and 295 of this, the current number.—Yours faithfully,

The EDITORS of "SPECIFICATION."

### REGISTRATION OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.  
SWANSEA.

DEAR SIR,—In your issue of May 3rd, under the heading of "The Registration of Architects," the following occurs: "Some fourteen years ago the Society of Architects was instrumental in framing and introducing into Parliament a bill for the registration of architects, which has passed its first reading." I should like to know through your paper the date when the bill passed its first reading.—Yours faithfully,

CHAS. S. THOMAS.

[This question is answered in the letter from Mr. C. McArthur Butler, which appears below.—Ed. B.J.]

To the Editor of THE BUILDERS' JOURNAL.  
ST. JAMES'S HALL, PICCADILLY, W.

DEAR SIR,—Your correspondent "Architect" closes his excellent letter in last week's BUILDERS' JOURNAL with a suggestion which would tend to show that he has not made himself familiar with the efforts which have been put forth to protect the interests of the profession, or he would have known that there is already an organization such as he suggests, viz., the Registration Bill Committee, which was formed at an open meeting of architects at Freemason's Tavern, in April, 1886. But with a view to affording further information as to the attitude of the profession generally on this important subject of registration, it may be of interest to note what the Royal Institute of British Architects—that body which the average man would expect to see first in the field in any movement of this kind—has done in the matter. Some forty years ago, the Council of the R.I.B.A. passed a resolution to the following effect: "The question of instituting an examination has already been discussed at meetings of this institute, and the council do not profess to do more than recommend the initiation of a scheme to be cautiously and gradually developed and brought into working order, in which too much should not be attempted at the onset, but which in accordance with the rule now established in other professions, the ultimate result should, in their opinion, be the establishment of a system of compulsory examination extended to all the architects, whether members of this institute

or not"—in fact, compulsory registration. Now, so cautiously, gradually and inconsistently, has that august body developed this scheme, as applying at least to non-members, that the only step that they appear to have taken in the matter is to strongly oppose the bill which the Registration Bill Committee was instrumental in introducing, and to which the Society of Architects is giving its support, and which is individually favoured by a large majority of members of the institute, though collectively opposed, for reasons which have been characterised as "unknown," but which are sufficiently obvious.

That it is, or should be, the duty of the older body to take the lead in registration and other questions affecting the welfare of the profession no one will deny; but as the very opposite appears to be the case, it is only natural that other interested bodies should be brought into existence who will, and who do, take up this matter and any other calculated to benefit the profession—not in opposition to the institute, rather, if possible, in co-operation with it.

Now, a society established on such lines as this, having obtained legal incorporation in the face of strenuous opposition, and increasing rapidly, as it is, in numbers and influence, claims the support of every member of the profession; and if architects are really in earnest in desiring registration, let them support the Society of Architects and the Registration Bill Committee, and by co-operating with them assist in bringing about the much to be desired State recognition of the architect.

Some may consider that little has been done in the matter of getting the bill made law, but it must be remembered that the appropriation of the time of the House of Commons by the Government, reduces the opportunity for private members to introduce bills, to the very insignificant proportion allowed by the ballot, and the bill has, as I have already stated, passed its first reading (March 7th, 1893). This, considering that it took the medical faculty (one of the first professions to recognise the desirability of compulsory registration) some thirty years to obtain their Act of Parliament, is not bad progress, especially in the face of such difficulties and obstacles as have been referred to.

I might add that a copy of the "Architects' Registration Act" may be obtained at this office, price 3d., or at the Queen's Printers', and it would be well that every architect should make himself acquainted with its provisions.—Yours faithfully,

C. MCARTHUR BUTLER.

Secretary, the Society of Architects.

To the Editor of THE BUILDERS' JOURNAL.  
RUGBY.

DEAR SIR,—I noticed with amusement the bland simplicity of your correspondent, "W. M. R.," who in your issue of the 19th prox., wrote, asking, "what are the chief advantages or disadvantages" of registration as applied to architects? Your correspondent must have been surprised that his pregnant inquiry failed at once to awaken the interest or speculation of other of our readers, for it is clear that he is quite unconscious of the keen, not to say virulent, controversy on this subject which swept the Profession not many years ago, and the bitterness of which has not yet quite disappeared. Has he never heard of the "Memorialists." Let him turn to the files of the Institute journal, the "Nineteenth Century Review," and a volume of essays by Messrs. Norman Shaw and T. G. Jackson, entitled—if I remember aright—"Is Architecture an Art or a Profession?" From these sources he may glean all that may be reasonably said on one side and the other, and a little more besides. The subject is worn out and utterly threadbare.

At the same time I can't let it drop here without telling "Architect," whose interesting letter appeared in your issue of last week, that I do not agree with him. His array of facts illustrating the popular disrepute of the profession with the public are for the most part unquestionable, and are a useful contribution to the magazines of anyone who should desire

to open a new "Profession or Art" campaign; but I for my part do not agree with his conclusions. A plumber is no more than a plumber for being registered, and the distinction, public recognition, and social prestige which some architects attain to, is even more than their deserts, being largely fictitious and sentimental. The trouble lies in the essential vulgarity and callous ignorance of the public on the subject of architecture. Hardly anyone who enters the profession ever has a chance of being an architect. The majority of the architectural work done in this country calls for no education, or culture, or refinement: it is essentially an occupation for unrefined and ignorant men. An educated and refined man could not do the great bulk of the work that is to be done, even if the pay and the social status were such as his necessities required. The average architect, in the present condition of ignorance and indifference of the public, must be an ignorant man, or he will die of disgust and humiliation. As it would be manifestly impossible to include as "architects" only those who were architects, registration would rather degrade those who now attain distinction, than distinguish those who are under the shadow of a popular disparagement.

"A POTENTIAL ARCHITECT."

To the Editor of THE BUILDERS' JOURNAL.  
WESTMINSTER.

DEAR SIR,—I agree with your correspondent "Architect" that registration is a "momentous question in regard to the profession," and that it is well that it should be freely discussed; but I am not so sure that I agree with him in advocating it. The difficulty is that architecture, as practised now, is a combination of many diverse functions, demanding from those who practice it many diverse and even opposite qualities; and as we are all very limited in our gifts and acquirements, we are all apt to lay stress on one or the other, and to have very different ideals as to the position and repute of the architect. Registration may help forward one ideal, but it may retard another. Your correspondent chiefly concerns himself with what may be called the professional ideal—not, however, altogether forgetting "that æstheticism, ever present in him whose heart is in his work"—the architect, as a professional man, comparable with the lawyer and the doctor, whose solid acquirements and professional integrity are devoted to the material and worldly needs of his client, whose appearance is respectable, whose manner is decorous, whose praise is in all the law courts. Him registration may help.

But if you consider the artistic ideal, the architect as an artist, comparable with the poet and the musician, whose natural gifts and highly-trained perceptions are devoted to the emotional and spiritual needs of humanity, whose appearance is not necessarily respectable, whose manner is possibly far from desirous, whose praise is not in the courts, but deep in the hearts of men—him registration may destroy.

Considering the successful and yet genuine architect has to realise to some extent both of these ideals, it is difficult to make up one's mind on a question which so powerfully affects them both, and that in contrary directions. But the more the matter is discussed, the sooner we shall arrive at some definite opinion, and see whether the good outweighs the evil. If so, let us have registration—and that as soon as possible; if not, let us forget all about it, and waste no more time and energy in discussing it.

From the point of view of practical politics, I fancy that a good many people are of opinion that Registration has a very poor chance so long as it is supported by the Society of Architects, and, for that reason, opposed by the R.I.B.A., and that opponents of Registration cannot therefore do better than encourage the Society to go on, confident in the successful opposition of the Institute; while supporters of the same should induce the Society to drop it, confident that the Institute would then successfully take it up, after a decent interval.—Faithfully yours,

A. R. JEMMETT.



## ASPECT AND SOIL

IN RELATION TO  
THE DWELLING-HOUSE.\*

BY V. G. POORE, F.R.C.P.

ALTHOUGH I have presumed to accept the invitation of the Architectural Society to read a paper, I hope I shall be acquitted of any desire to step outside my province and to lecture architects on matters which they obviously understand much better than I.

My excuse for addressing you must be found in the fact that, as a physician and sanitarian, I believe that of all circumstances which make for or against the health of the public the dwelling-house is most important.

## Building Conditions.

The conditions under which dwelling-houses are built have been revolutionised by steam machinery. Houses are nowadays run up in a wholesale fashion. Modern facilities as regards water supply and sewerage have made curtilage unnecessary, and have enabled us to build towers of flats, which, from the sanitarian's point of view, are most undesirable.

We all recognise that overcrowding is the greatest of social evils, whether it be regarded from the point of view of morals or health, and we all protest that it is useless to attempt to check it. Most of us, I hope, are sensible of the magic influence of the word "home." Many of us believe that the "home" and the "family" are the units out of which the greatness of a nation is constructed, and that if a nation is to continue to be imbued with feelings of true patriotism, the sacredness of the home and the sentiment of family must be maintained. I wonder if the offspring of parents who fluctuate between Capel Court and Newmarket, and whose only dwellings are West-end flats, on a three years' agreement, and rooms in hotels at fashionable resorts, has any home sentiments?

It is very doubtful if the sentiments of home and family are likely to be strengthened by the mode of life of what are known as "smart" people.

The opinion has lately been expressed by a great authority on labour questions that the industrial classes do not want "homes," and that anything which tends to fix them in one spot or to create an affection for any locality is contrary to their best interests. Labour must be organised as an army, and quick mobilisation is essential if the fight with "capital" is to be successful. There can be no doubt that public opinion is at present mainly in favour of overcrowding in cities, and further, there can be no doubt that overcrowding is encouraged both directly and indirectly by modern municipalism and the by-laws which regulate building operations.

## The Aspect.

Very little attention is paid in the present day to the aspect of a house, and it is evident that the public barely considers the question of aspect.

The speculative builder considers the question of cost and cost only, and until the public recognise that aspect has a real money value and is worth paying for, there is no likelihood that the question of aspect will trouble the mind of the builder.

It appears to me that the engineer and the surveyor have too much the "whip hand" of the architect, and that by the time the building estate has been laid out the whole question of aspect has been practically settled, and the architect has really no choice in the matter.

In the Thames valley, where I have a cottage, I have for the past twelve years watched the "development" (so-called) and the wholesale urbanising of a rural spot. This

process is a simple one, and is familiar to all of you.

1. The locality is constituted an "urban district."

2. The Council is elected for three years.

3. The Council immediately borrows a sum which works out to about £10,000 for each councillor, and thus increases all existing rents for thirty years at least.

4. The roads (main roads and by-roads) are all provided with sewers and water pipes.

5. The lands abutting on these roads suddenly change from farms and gardens to building sites.

6. These lands are bought by building societies or building speculators, and are laid out with one object, and one only, in view—i.e., the placing thereupon of the maximum number of houses which is permitted by the by-laws. This means that no house has any curtilage other than a back yard 25ft. deep.

## Beauty and Sanitation.

In "laying out" a building estate the new roads are almost invariably at right angles to or are parallel to existing roads, and it is needless to say that they are absolutely straight. Curves of beauty are scarcely permissible in modern sanitation. The result of all this is that the building estate when complete has all the regularity and symmetry of a gridiron. The houses are possibly all built to pattern. There is no individuality, no variety, no change, no rest for the eye.

The extent to which this kind of thing is carried is well exemplified in the district to which I have alluded, in which there is a "recreation ground" dating from a time anterior to the sewerage and urbanising.

This recreation ground is five acres in extent, and its northern and southern boundaries are formed by high roads, while its eastern and western boundaries are formed by market gardens, which, in consequence of the changes indicated above, have suddenly developed into building estates. One would have thought that the building speculator would have turned the fronts of his houses to overlook the recreation ground, and that by giving his houses (as he might have done) a south-easterly aspect, with the pleasant prospect of the recreation ground, he might have commanded some extra rent.

This does not appear to be the case, for the privies and wash-houses have been turned to the recreation ground, while the chief rooms of the houses look at their stuccoed twins on the other side of the street.

The recreation ground will, I suppose, remain a rather gaunt spot, hedged in by prim railings and flanked by lines of fluttering linen. The opportunity of making a pretty "village green" has been allowed to slip, and I am not aware that the Urban District Council have troubled their heads about the question.

If we are to continue to build houses in a wholesale fashion in straight rows it is almost useless to appeal to the architect on the question of aspect, although some good might be done by directing the attention of engineers and surveyors to the matter.

If we concede that the best aspect for the chief rooms of a house is one looking to the south-east, then it is obvious that if the main roads of a building estate run from south-west to north-east, the houses flanking such road would have one side turned to the south-east. On the north side of the road the fronts would face the south-east, and on the south side the backs would face the south-east, unless the Local Council permitted and the builder were willing to allow the backs of the houses on the southern side of the road to be turned to the street. Speaking as a doctor, I have no doubt that it would be advisable to turn the

## Backs to the Street,

if by so doing a good aspect can be obtained for the chief rooms. By adopting this plan we have the additional advantage of bringing the culinary and sanitary arrangements close to the street, and thereby greatly simplifying the sewerage arrangements which would result in some saving of money. It is very important from the point of view of health that food

should be stored in a cool place. Sour milk and putrid food are a great cause of infantile diarrhoea. This is an additional reason for the rule of "living rooms to the sun, larders and kitchens to the north."

I need not remind this Association that some of the finest houses in London (Hyde Park Gardens) are built with their "backs" to the street, and with the main rooms overlooking a private garden with the Park beyond. Whether houses with their backs to the street would meet with the approval of "the masses," I cannot say. A stuccoed head over the front door probably does more to let to this class of house than the fact of its rooms being exposed to the sun. If it were considered essential that the chief rooms of a house should face the south-east, there would be no difficulty in attaining this end (except in streets running from north-west to south-east), provided the houses were placed obliquely to the street line and were built *en échelon*, a mode of building which tends to secure privacy, although it probably adds to the expense of building and the difficulties of plotting out the estate.

It is evident that the laying-out of the roads on a building estate is a most important matter in relation to the aspect which the houses are to enjoy. Is it necessary that all such roads should be absolutely straight and at right angles to each other? Is it quite impossible to rest the eye and give some variety by an occasional curve? Is it any use to appeal to the ogre jerry builder on a purely æsthetic question?

The question of aspect is very much a question of sunlight, and there can be no doubt that sunlight has great influence on health. The Italians have a proverb which says "Dove non va il sole va il medico"—that the doctor comes to those places which the sun does not visit. It is an established fact that many of the microbes which are the causes of disease are killed by sunlight. This appears to be the case with regard to tuberculosis, and it is certain that there is most tuberculosis in places which are overcrowded, and to which the sun finds access with difficulty.

## Statistics.

In the supplement to the fifty-fifth annual report of the Registrar General is a table giving the annual death rate per million living among children under five years of age from tuberculosis in the ten years, 1881-1890.

By selecting the death-rate among children under five we practically exclude the disturbing influences of varied age, sex, and occupation, and we may conclude that amongst this class the influences which make for health, or the reverse, are home influences. Again, when a man selects a house, no single consideration is of more importance than the effect which his dwelling is likely to have upon his children. This table of the Registrar-General's is, therefore, one which ought to be carefully studied, and as it deals with a period of ten years it may be concluded that the statistical results arrived at are reliable.

Among children under five there is more tubercular disease in London than in any other county, and probably for the reason that the number of persons on a given area is greater in London than in any other county.

Thus the death rates from tuberculosis are in

London.....	6581	Lancashire.....	5364
Durham.....	5650	Dorsetshire.....	2401

Again, when we come to examine the death rates from tuberculosis in the different Registration districts of London we find them as follows:—

Strand.....	11,881	Kensington.....	6,571
Stepney.....	9,310	Islington.....	6,532
City.....	8,858	Whitechapel.....	6,098
Chelsea.....	8,129	Paddington.....	6,029
St. George's, Hanover Square.....	7,952	Hackney.....	5,989
St. Faviour's.....	7,839	Mill End.....	5,975
Holborn.....	7,876	St. Olave.....	5,910
Westminster.....	7,766	Lambeth.....	5,907
Shoreditch.....	7,675	Woolwich.....	5,641
Poplar.....	7,219	Wandsworth.....	5,581
St. George, E.....	7,204	Camberwell.....	5,537
St. Pancras.....	7,064	Greenwich.....	5,528
St. Giles.....	7,055	ENGLAND AS A	
Marlybone.....	6,820	WHOLE.....	4,499
Bethnal Green.....	6,988	Lewisham.....	4,018
Fulham.....	6,731	Hampstead.....	3,661

\* A paper read before the Architectural Society on May 12th.



It is a remarkable fact that in only two of the registration districts in London is the death-rate of children from tuberculosis less than it is in England as a whole. In all the other districts the death-rate from the tubercular diseases is much higher than in the country at large. Possibly some of the figures are influenced by the position of hospitals, but not to any great extent. Seeing that tubercular diseases are all chronic, and that many children are moved out of London at the first threatening, I am afraid it is impossible to conclude that the figures give an exaggerated idea as to the extent to which the malady prevails in this dark, overgrown town.

#### The Value of Sunlight.

This prevalence of tuberculosis is due to overcrowding of houses on the land and overcrowding of people in the houses, to the dirt-laden air and the darkness and the gloom.

In London, it is almost idle to talk of aspect. If aspect is mainly a question of sunlight, then in London it is not only necessary to have your house facing towards the sun, but also to make sure that no screen in the shape of a tower of flats intervene between it and the sun. To discuss the question is almost absurd. If what I have said, and the figures I have quoted, are sufficient to convince you and others that the conditions which pertain in London are to be avoided in less crowded places, a good work has been done. To have your house facing the sun, and with its chief living rooms well exposed to it, means a considerable saving of fuel and gas. I am unable to tell you what is the potential value of heat in a room facing south over and above that of a room facing north, but we must all feel sure that it is considerable. I am fond of telling people to look at the north and south sides of a garden wall. Go to the south side and bask in the brightness and warmth, feast on the peaches ripe and ruddy, and listen to the hum of insects glinting in the sunbeams. Then go to the north side, damp, all in chilling shadow, content you with a few hard pears or acid cherries, scrape off the damp mildew growing in the mortar, and sniff the fusty smell arising from the dank, sour soil.

It is idle to contend that aspect has not a most important influence on health. If a house face right and has a verandah, the occupants can often enjoy the fresh air, instead of crowding into a stuffy room.

If a dwelling be detached and isolated it is generally possible to give the chief rooms any aspect which may be desired. It is common to find, however, that detached villas have their fronts parallel to the road, even though this position should entail a north-east aspect. How far by-laws and regulations may be answerable for this state of things I do not know.

#### The Value of Detached Dwellings.

Not only on account of the freedom as regards aspect, but on the general grounds that overcrowding is to be lessened by every means in our power, it seems to me that sanitary authorities should encourage the erection of detached and isolated dwellings.

The most important part about a "home" is not the house, but the garden round it; and I have no hesitation in saying that the children of a country labourer, born in the commonest and cheapest erection of wood or mud and thatch, standing in its rood of potato ground, have a much better chance of growing up healthy in body and mind than those who have been born under the fostering care of urban district councils in houses with concrete foundations, damp-proof walls, patent water-closets and traps, sewer pipes, and rain-water pipes, with an expensive paving in front, and a tiny concreted yard behind, which is practically an air-well with putrefaction traps in its floor. This last class of dwellings, be it remembered, the outcome of by-laws which seem to be designed for the purpose of rapidly urbanising rural places, is very expensive, and the artisan finds that he has to pay, relatively, an enormous part of his earnings in rent and rates, and that his children have no private playground.

I freely admit that the stringent building

by-laws which are now in force in many places are very necessary in crowded centres of population; and if they were still more strict on the question of height and relation to be enforced between the cubic contents of the building and its surroundings, I, for one, should not object. On the other hand, it must be remembered that these by-laws very much augment the cost of building, and that it is becoming increasingly difficult to get an adequate return for houses erected for the wage-earning class. So much is this the case that it seems not unlikely that municipalities will be called upon to provide dwellings, and run them at the expense of the ratepayers as a whole.

Many rural municipalities have adopted these by-laws and appear to me to enforce them very often to the detriment rather than the advantage of the locality. A little town in Hampshire, which I know well, includes within its official boundaries places which are three or four miles from the town hall, places which are in the wilds and as thinly populated as Sahara. And yet this municipality enforces its by-laws so that the farmers and gentry of these outlying spots are obliged to submit plans of even outhouses or ovens which they are proposing to erect, to the collection of tradesmen who happen to constitute the Council for the time being.

I am very strongly of opinion that the builder of an isolated dwelling ought to be allowed to escape from these

#### Harassing By-laws,

and ought to be permitted greater freedom in the choice of building materials and in other matter than the speculator who is trying his hardest to put the maximum population on the minimum legal area. In relation to fire and infectious disease the surest preventive measure is the isolation of the dwelling. If the dwelling be separated from the boundaries of other premises and the public thoroughfare by a distance equal to its height (i.e., the distance from the ground to the top of the highest chimney or gable) it ought to be allowed to escape from the by-laws. I need hardly say that the insurance offices will know how to enforce an adequate security against fire. Mr. Till, of Eynsford, in Kent, recently erected two timber cottages in the country on either side of a road. One of these cottages was condemned because it happened to be within the boundary of a Council which had adopted model by-laws. The only valid reason for such condemnation was the danger of fire. But it is evident that the danger of loss of life from fire is very slight in an isolated cottage with the bedroom windows some 10ft. at most above the ground. On the other hand, the danger to loss of property is indicated by the fact that the insurance offices charge 2s. 6d. per cent. instead of 1s. 6d. If, however, a model by-law cottage costs £250 while a wooden cottage equally large and wholesome costs £150, it is evident that the cost of insurance is equal in the two cases. The rent of the first at 5 per cent. would be £12 10s., and the rent of the second £7 10s. If the local charges (rates) be 4s. in the pound then we have as the annual cost of these

#### Two Cottages:

Model By-law Cottage.				Wooden Cottage.			
	£	s.	d.		£	s.	d.
Rent ... ..	12	10	0	Rent ... ..	7	10	0
Rates ... ..	2	10	0	Rates ... ..	1	10	0
Insurance ... ..	0	3	9	Insurance ... ..	0	3	9
Total ... ..	£15	3	9	Total ... ..	£9	3	9

By living in a wooden cottage the working man would save £6 a year, or nearly 2s. 4d. a week. And if he had a rood of ground the produce will be worth at least £12, which will leave him with nearly £3 in pocket after paying all charges on his house. Further, he will have made an intelligent use of his leisure instead of consecrating it all to beer and betting.

(To be continued.)

#### A Refuse Destructor for Bridlington.—

The Urban Council has decided unanimously to carry out the recommendation to cause a Beaman and Deas refuse destructor to be erected.

## KENSINGTON TOWN HALL EXTENSION.

SOME nine or ten years ago the question of the provision of additional office and committee room accommodation in the Kensington Town Hall building first engaged the consideration of the Vestry, and they arrived at the conclusion that further accommodation was necessary for the conduct of the business of the Vestry. It was found that the required increased accommodation could not be provided by means of structural alterations to the existing Town Hall, and the attention of the Vestry was directed to see whether certain properties at the rear of the building could not be acquired with a view to the building being extended in that direction. The negotiations which were started with the owners for the purchase of the several interests in the properties proved unsuccessful, as a prohibitive price was asked. In August, 1892, the London County Council directed the Vestry's attention to what appeared to be inadequate accommodation for the holding of inquests in Kensington, the coroner's court being a room of small size in the basement of the Town Hall. It was pointed out that Section 92 of the Public Health Act, 1891, enabled the provision of a coroner's court to be made by agreement between the Council and Vestry, either in connection with the existing mortuary, or with any other building belonging to the sanitary authority. Upon this revival of the question, the Vestry again made an attempt to acquire the desired properties, but the attempt again proved unsuccessful. The site, however, was eventually secured at a total cost of £6,728. On the 4th inst. the new extension, which now occupies the site, was formally opened by the Lady Mary Glyn, who was accompanied by the Bishop of Peterborough.

The new building is connected with the Town Hall proper by a covered way which has had to be restricted in height in accordance with the terms of an agreement between the Vestry and the managers of the National Schools; and owing to the retired situation of the new building, with its frontages abutting almost wholly upon the churchyard, the exterior has been kept plain and is carried up entirely in stock brickwork, with Portland stone dressings. The ground floor is occupied by additional offices for the medical officer of health and sanitary inspectors. The members' room will be used by deputations in waiting. The remainder of the ground floor is occupied by the surveyor's department, comprising an office for the surveyor, a general office, and a drawing office.

There are two distinct entrances from Church Walk, leading to separate staircases to the first floor, the front portion of which is occupied by a large committee room, boldly treated in oak. In connection with the committee room are lavatories, a hat and cloak room, &c. The northern portion of the first floor is occupied by the coroner's court, witnesses' waiting room, and coroner's private room, which will also be used as a retiring room by the jury. The court room is fitted up in oak in a very complete manner, and is well lighted by side windows and a glazed dome. Over the front or south portion of the building a third story is built providing rooms for the accommodation of the hall-keeper. The whole building is to be lighted by means of electricity, and warmed by hot water coils in addition to the fireplaces provided. It has been erected in accordance with plans and designs prepared by Mr. W. Weaver, the surveyor to the Vestry, and Mr. W. G. Hunt, who were appointed by the Vestry to act as joint architects. Messrs. Leslie and Co., Limited, of Kensington Square, London, erected the building. The amount of their contract was £13,747, the whole cost of the building having been about £20,500.

**St. Paul's Church Institute, Miles Street, Liverpool,** is being erected at a cost of about £3,450.



# Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,  
May 17th, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

## Architects' Decorations.

A NUMBER of leading architects have presented to the Dean and Chapter of St. Pauls a memorial which sets forth with admirable lucidity and force the case, from the architect's point of view, against Sir W. Richmond's decorations. They point out that the cathedral is in imminent danger of losing the grave dignity which has endeared it to the heart of the majority of Englishmen, and that this is due to the fact that Sir W. Richmond's scheme, whatever its abstract merits, has not been thought out in sympathy with and in subordination to the architecture of the cathedral. Three specific objections are stated, viz., that the designs are Byzantine in character, and alien to Wren's genius and to the intellectual atmosphere in which he lived and worked; that there is a great discrepancy between Wren's scale—which was followed by Stevens in the designs he made for the spandrels under the dome—and that adopted by Sir W. Richmond; and that the decorations now being carried out involve actual injury to the stonework of the cathedral as left by Wren.

## A Reply to Sir W. Richmond.

"IN the four great arches at the N.E., S.E., N.W., and S.W. angles under the dome," continues the memorial, "Wren, in order to satisfy the eye as to the constructive stability of his arches, left plain piers or abutments under the arches, and he deliberately abstained from any ornament to these piers in order to make clear the idea of strong support, which is their actual function. Sir W. Richmond has formed raised panels on these piers and studded the margins and divisions with *pateræ*—that is to say, Sir W. Richmond has stultified the architect's design, and in nearly every detail of his decoration he has, in our opinion, shown the same indifference to the clear intention of the architecture. Sir William Richmond has practically admitted his dislike of that architecture in his letter of May 6th, a letter more remarkable for its courage than for any appreciation of the gravity of the case. It seems to us that an artist so evidently out of touch with the conditions of his work should not be permitted to alter the character of the finest work of modern English architecture, and this feeling we believe to be that of the great majority of intelligent and educated Englishmen. We desire in no way to disparage Sir W. Richmond's attainments and well-earned reputation, but we cannot regard them in comparison with the fame of Sir Christopher Wren and the loyal preservation of his work." The signatures to the protest, including as they do, those of many of the most eminent of living architects, add weight to what is in itself a weighty and convincing document.

ONE interesting result of the St. Pauls' decoration controversy is that, little by little, stories of earlier schemes for decorating the cathedral have been brought to light. An

interesting letter, written by the late Samuel Palmer as long ago as 1879, was published in the "Times" the other day. The letter was suggested by proposals that were made about that time for the "completion" of St. Paul's. The writer remarks that the cupola is the part of the cathedral that especially attracts these "completers" as giving the wildest scope for their fancies and experiments. "Sir Christopher," he continues, "having kept the deeply-set windows of that sloping wall between the dome and the whispering gallery narrow, so nicely dispensing the 'dim religious light' as to leave the cupola in a sort of poetic mystery, mosaics were proposed not long ago to make the dome more cheerful, and metallic reflectors to brighten the mosaics! The slope of the pilasters is continued upwards at present by the architectural divisions in the chiaroscuro of Sir James Thornhill, so that the eye does not detect the artificial perspective; but directly the chiaroscuro is removed, and horizontal layers of any kind are substituted, the secret will out, the dome will seem to be 50ft. lower, and the wall which supports it about to topple upon the spectator." Thus the voices of the past enforce the protests of the present.

## Improving the London Bill.

THE London Government Bill, by the time it reaches its final stage, will be a very different measure from that which was introduced into the House of Commons a few weeks ago by Mr. Balfour. One by one the original proposals have been modified, altered, or altogether abandoned, in deference to the criticisms they have called forth from members on both sides of the House. We are particularly glad to note that the Government has decided to withdraw the Building Act clauses. The proposed transfer to the new borough councils of the right of administering the Building Acts would inevitably, if carried out, have inflicted serious hardship on architects, surveyors, and builders, and reduced to a state of chaos the regulations affecting building in London. We have no doubt that in eliminating this objectionable feature from his Bill, Mr. Balfour has been influenced by outside representations, including that from the Royal Institute of British Architects, as much as by Parliamentary criticism.

## Tudor House, Bromley.

MR. C. R. ASHBE, Chairman of the Committee for the Survey of the Memorials of Greater Britain, is appealing for the preservation of Tudor House, one of the last remaining Elizabethan houses of Bromley. The house contains much beautiful work of the early part of Elizabeth's reign. The building, with the extensive grounds adjoining, has come into the hands of the London County Council, and, while the Historic Buildings Committee have recorded it for preservation, the Parks and Open Spaces Committee have, says Mr. Ashbee, determined that it shall be destroyed. At a meeting of the London County Council last week the debate on the recommendation that it should be demolished in order to give a little more room in the grounds, was adjourned for a week.

## St. Dunstan's Church, Fleet Street.

IN our issue of May 3rd we made some comments on the proposal to build on the open spaces at each side of St. Dunstan's Church in Fleet Street. It seems that the Law Life Assurance Society, Limited, have offered £4,500 for the ground to the west of the tower, and at the other side it was intended to build a house for the rector. The latter part of the scheme, however, is opposed by the proprietors of the abutting building, who have claimed "ancient lights," and it has been temporarily abandoned. If the proposed buildings are erected, the church will have a sandwiched appearance, and the dwarf towers on either side of the central tower will be almost entirely hidden from view. If only the Assurance Society buildings are put up, the effect will be worse, as a ludicrous lopsided appearance will be given to the church. St. Dunstan's is not, we confess, a strikingly beautiful church, but it possesses

a very fine Gothic tower, the proportions of which are thrown into strong relief by being projected beyond the south wall to the building line of the street, with an open space at each side; and to fill up these spaces, or even one of them, would certainly spoil its beauty. The churchwardens defend their scheme with a very lame argument. They say that by building on each side of the tower they will screen from public view the plain brickwork of the church wall. If this is all the reason they have for destroying the beauty of so fine a tower, we sincerely hope that the application, when it comes before the Consistorial Court, will be successfully opposed.

## Architects' Registration.

At the annual meeting of the Devon and Exeter Architectural Society last week, a reference was made to the Architects' Registration Bill. It appears that while the R.I.B.A., the Leeds, Yorkshire and Birmingham Societies have signified their disapproval of the Bill in communications to the Devonshire Society, the Society of Architects, the Dundee Institute, the Northern Architectural and the Sheffield Societies are in favour of it. The Council of the Devon and Exeter Architectural Society express the opinion that in view of the manner in which much of the building work is designed in the district, some steps ought to be taken to safeguard the interests of not only the profession but the public at large. The New South Wales' Allied Society is about to endeavour to introduce into the Colonial Parliament a Bill which will have the registration of architects for its object.

## Preserving Haddon Hall.

SOMEWHAT extensive repairs have been found to be necessary at Haddon Hall in order to prevent that historic structure from falling into decay. The chief part of the work is the underpinning of the tower near the entrance to the hall. The tower, it seems, was found to be nearly 11in. out of the perpendicular. When excavations were made it was discovered that the whole tower rested on no solid foundation, but was built almost from the surface. It stands on a rock, but there were several feet of soil or shale between the base of the tower and the rock. The wonder is that it has stood for so many centuries before beginning to show signs of instability. The intervening space between the base of the tower and solid rock is now to be filled with blue bricks of the most enduring description, and thus all danger will be averted. The work has been entrusted to Messrs. Toft Brothers, of Youlgreave.

## A Happy Excavating Ground.

OUR archaeological readers will learn with interest that the celebrated *Puteal Libonis* has been discovered and explored by Signor Boni while carrying on his excavations in Rome. This puteal is found to be seventy-one centimetres in diameter. "St. C.B.," writing to "The Times" of the 8th inst. gives some very interesting particulars concerning this find. He says: "Its remaining walls are of tufa cut into mouldings of 'pedarole,' or square dentils. It has already yielded the fragments of three hundred vases of various dimensions belonging to the second century B.C., together with bones of ox, sheep, and boar, and a dozen skulls of weasel. Signor Boni has likewise been fortunate in his search for fragments of the arch erected by Augustus in Commemoration of the victory at Actium, which stood adjacent to the Puteal Libonis, and 'juxta ædem Divi Julii.' Its foundations were discovered in 1888 and its inscription in 1845. Signor Boni has now been able to identify seven magnificent blocks belonging to it, which can be quite easily replaced over the existing bases of the pillars thereof. It may be of interest in this connection to mention that the curve of the Arch of Q. Fabius (Allobrogicus), with its curious double key-stone, is complete but for one or two missing blocks. It is lying out on the ground opposite the 'Templum Romuli.' Its inscription was discovered at the same date as that belonging to the Arch of Augustus."



# R. I. B. A.

## ARCHITECTURE AND ENGINEERING.

By H. HEATHCOTE STATHAM.

AN ordinary meeting of the Royal Institute of British Architects took place last Monday evening, at 8 p.m., at No. 9, Conduit Street, Regent Street, W., with the president, Professor G. Aitchison, R.A., in the chair. The minutes having been confirmed, the president called upon Mr. H. Heathcote Statham, F.R.I.B.A., to read his paper on "The Architectural Element in Engineering Work." Mr. Statham said that he had intended to use in the title of his paper the more appropriate word "aesthetic," but had substituted for it the word "architectural," for he decided that, as there appeared to be an objection to the former, he would use the latter word. He did not wish his paper to be taken as derogatory to the position of Engineering. He considered that Engineering had, in the present age, taken a leading part. He thought that where small work had to be done, the architect was quite capable of doing it, such as in the building of small bridges, but where large works were carried out

### Special Knowledge

and skill were undoubtedly demanded, and such works should be done by an engineer. The immense constructional works, such as viaducts and bridges, were to the nineteenth century what the cathedral or church was to mediæval times. An engineer had one great advantage over the architect, he knew exactly what he wanted to arrive at. He considered that what the public wanted that they would have; they had wanted great engineering works, and great engineers had come forward. If the public wanted great Architecture, then there would be great architects. There was some truth in the statement that Engineering and Architecture should not be separated. Architecture did not exactly aim at economy of material, but in Engineering any material that was not actually in use was wasted. It was contended that the old architect and engineer were practically one, but this was hardly so. It was found that great artists had in the past designed instruments of war, &c., but the Roman architect, such as he who built the Colosseum, could not do without his Corinthian order, whereas the Roman engineer built his aqueducts in the plainest manner. Engineering works were those in which only

### Material and Utility

were considered. He thought that, if considered in this way, a large proportion of engineering works were very interesting. Ruskin had called the railways the spoilers of landscapes and beauty, but he thought that railways had in very few cases caused loss of picturesqueness and beauty beyond the time they were in course of construction. And so with all engineering works: if they were built truthfully, they would naturally have beauty in our eyes. A bridge could not be built across a river, for instance, without the beautiful sweep of the arch being pleasing. In a railway bridge the steel girders were redeemed from ugliness by the consideration that an arch would not give this same appearance of stability. A serious drawback to iron construction was the necessity of painting it. The reason why we did not care for iron construction was, he thought, that we were at present unused to it, and only familiar with stone and timber. When one got used to steel, it would be liked, as stone and timber were. A girder was simply a specially constructed beam or lintol, and there was no reason for it being disliked because of its being constructed of steel instead of wood or of stone. If engineering work was treated simply it would create its own æstheticism. If the piers of a bridge could be made in stone or brick half the objection to steel construction would be done away with. A number of illustrations were then shown by

means of the lantern and most ably explained by Mr. Statham; these illustrations consisted mostly of bridges, owing to the difficulty of getting illustrations of other engineering works. Having shown these limelight views, Mr. Statham dealt with the design for

### The New Vauxhall Bridge

across the Thames, which, he explained, was a special object of his paper. He pointed out how here, as was the general tendency with modern engineers, ornamentation and architectural treatment had been attempted, when simplicity should have been aimed at. He thought it was not to be expected that engineers could handle architectural detail, which was only to be done by a special training. The great thing they went wrong over was the use of mouldings, and the non-perception of scale. In the Tower Bridge a great mistake was made by using stone to mask the construction, and this showed how necessary it was to be truthful. The columns of the Vauxhall Bridge would have looked better in the centre of the arch, and the moulding at the foot of the piers was out of scale, being wholly too large. Mr. Mountford had suggested to the author of the paper that the voussoirs, which, by their present design, gave an appearance of weakness at the top of the arches, would perhaps look better if their lines had been run up to the top of the parapet. Mr. Statham had prepared a design on this suggestion, and submitted it to the meeting. He hardly thought that the Bridges Committee of the London County Council and their engineer had acted fairly to the Institute. He wished to ask why should not bridges be built by the architect assisted by the engineer, as well as by the engineer assisted by an architect?

### THE DISCUSSION.

The President then called upon Lord Wemyss, who said that he was in thorough sympathy with the movement that engineering, which invariably turned out such horrors as these bridges, should be under some control. He thought that engineering skill should not have been employed in spoiling landscape, but in obviating this spoilation. He was sure some kind of control was wanted, as could be seen in St. Paul's. What he was trying to get adopted by the Government, was the erection of models of important buildings with their surroundings. Drawings told one nothing. Modelling was, in his opinion, everything. He requested the Institute to help him to urge that everything should be first done in model. He regretted to see that the Institute had not been forward in protesting against the decoration of St. Paul's.

Mr. A. T. Walmisley, M.I.C.E., said he was in perfect sympathy with Mr. Statham's remarks. There was no more need for architects to do their own engineering than there was for them to do their own quantity surveying. While engineers should be responsible for the stability of the structure, architects should be called in to do the designing of it. Referring to Mr. Statham's remarks upon the painting of engineering works, he thought the Forth Bridge was defective in having no provision for painting the inside of it in order to protect the ironwork. He considered the Victoria Railway Suspension Bridge, was a fine one. He urged the importance of being truthful in construction.

Mr. A. Beresford Pite, in proposing a vote of thanks, said Mr. Statham had clearly and convincingly demonstrated the need of simplicity in engineering works. With respect to Lord Wemyss's statement about St. Paul's, the Institute had taken some action in the matter, and he thought they had had a great deal to do with the good that had already been done in obtaining the stoppage and ultimate removal of the objectionable stencilling and black lettering there.

Professor Robert Kerr seconded the vote of thanks to Mr. Statham. He found fault with the photographic illustrations shown on the screen, from their not being chosen from the best point of view for architectural consideration, but rather from the point of view of the artist. He saw no reason why construction should not be rendered as beautiful by the engineer as by the architect. In this country

there was absolutely no example of engineering work up to the mark in respect to artistic character. There was no reason why this should not be done, and architects did not object to the engineer doing this. He thought that, as Lord Wemyss had told them was the case, the public could not distinguish from drawings, and that they should therefore be shown models.

Mr. William Woodward disagreed with Mr. Statham on several points. The speaker contended that nothing could excuse the ugliness of the Forth Bridge. In regard to the new Vauxhall Bridge, a great cry was raised against the columns carrying nothing; but let them look amongst their own work. In buildings by high Art architects, columns often carried nothing, and these present columns did carry lamp standards. There was no sense in the objection to the facing of the concrete by granite, for in the finest Italian churches, which were generally admired, there was a facing of marble. He was impressed with the dignity of Sir A. Binnie's design for the bridge, and he contended that if the design was carried out in its present form it would be a credit to London. The design—the joint effort of Mr. Statham and Mr. Mountford—having voussoirs carried up to the top of the parapet was most ugly.

Mr. E. W. Hudson asked for Mr. Statham's opinion on the Westminster Bridge which crossed the Thames at the Houses of Parliament, which he considered rather good. With regard to the castellated treatment of a bridge at Conway Castle, shown on the screen, he hardly thought this mediæval treatment was out of place for some engineering work.

Mr. E. W. Mountford thought that Sir A. Binnie had been very successful with his bridge, and that the great piers helped the great spans. The smallness of the piers was objected to, and the Institute had at first wished to increase them, but they were at once told that this was impossible, as they were already the maximum that the Thames Conservancy would allow. He still thought that their efforts would not altogether be lost, and the London County Council would probably leave out some of the superfluous ornament. The letter to Sir A. Binnie which had been sent by him and Mr. Waterhouse was a strictly private one, and should not have been brought forward, and had been written for a reason which could not then be explained. They had, however, simply expressed their approval of the general design of the bridge, fault being found with the moulding and details.

Mr. W. D. Caroe thought that engineers did not understand what was ornament. It had been suggested that the columns on the bridge looked like drain ventilators. The County Council had recently put up similar columns as drain ventilators on the Chelsea Embankment, and had consequently disfigured it. Mr. Statham had clearly shown how necessary it was to treat engineering works simply.

Mr. Statham, replying to the vote of thanks, said that in the Forth Bridge doors, rails, &c., were provided to permit of the painting of the inside of the tubes, &c. He considered Prof. Kerr had rightly found fault with the illustrations to his paper, but they were the best that he could obtain. He saw no reason why an engineering work should not be beautiful; the reason for the present dislike was unfamiliarity with steel and iron. He had liked the Westminster Bridge until he found that its real construction was concealed.

Prof. Aitchison then announced that at the special general meeting on May 9, he would move the nomination of Mr. G. F. Bodley, A.R.A., as a Fellow, and that gentleman would be put up for election at the meeting on June 12, when Mr. T. J. Bailey, F.R.I.B.A., would read a paper on "The Planning and Construction of Board Schools."

**Kew Bridge.**—The Joint Committee of the Middlesex and Surrey County Councils has agreed to a modification of the original plans of the temporary structure to be erected during the construction of the new Kew Bridge, involving an additional cost of £500.



# THE ARCHITECTURAL ASSOCIATION.

## SPECIFICATIONS.

(Continued from page 206, No. cccxii.)

**IN** Smith and Founder take this order: lintols, chimney bars, straps, girders, floors, columns, roofs, carriages, iron windows, gutters, stack pipes, external railings and gratings, stoves and ranges and heating. Heating may come under heating engineer.

Under Slater and Tiler, roofs first, then vertical slating or tiling, shelves, cisterns, and such like smaller items.

In Plumber take gutters, flashings, and other roof finishings, flats and their gutters and finishings, then drinking water supply pipes, cisterns, sinks, lavatories, baths, and fittings. Then water-closet supply pipes, cisterns, water-closets, slop sinks, urinals and fittings, soil and ventilating pipes, hot water circulation.

**Zincworker and Coppersmith.**—Take flats, gutters, and finishings, pipes, lightning conductors.

In Plasterer describe first the general plaster work to ceilings, partitions, and walls, then follow with cornices, coves, centre flowers. Then those parts in cement, and, finally, the external plaster or cement work, or if preferred take the external work first.

**Glazier.**—External glass to skylight windows, doors, then internal lights and screens, and pavement lights last.

**Painter and Paperhanger.**—Internal work to ceilings, walls, wood and ironwork, and polishing. Then external painting to wood, iron, and cement work.

As to the order in the trades I have not mentioned, such as bellhanger, gasfitter, and electric lighting engineer, which are not generally of any considerable variation, there is very little to suggest, but keep the order of the work, such as the main items, first and fittings afterwards.

I might mention that the order adopted in bills of quantities is not precisely the same in all parts as that of a specification. The order in quantities is placed to an extent to facilitate the pricing, and the order in the specification should be to distinguish quickly the position of the work.

## General Directions.

One word before I come to the last part of this paper. If the prices in a bill of quantities are not to be taken into account in the settlement of extras and omissions, or if quantities have not been supplied, then a schedule of items should be provided for the builder to fill in and be attached to the specification and form part of the contract upon which variations may be valued.

I have now, I think, stated the various points which are necessary to be observed for efficient specification writing, and I will just mention a few matters which are worthy of attention and which are not always found to be clearly stated in a specification, but are sometimes omitted altogether, taking preliminary items first.

Always state that the plant and temporary erections are to be removed when directed, such as the scaffolding, hoarding, shoring, clerk of works's office, and any other items temporary in their character. The provision of these items is usually stated in the specification, but their removal is not always mentioned.

State if the hoarding is not to be let to an advertisement contractor.

Clearly define what you mean by prime cost and provisional amounts.

State if the employer's business is to be carried on during building operations.

Mention that the contractor is to give due facilities to other tradesmen who may be employed on the premises, and also that the contractor is to allow such other tradesmen the use of his scaffolding and plant.

State to whom any coins or curiosities

found on the premises or during the excavations are to belong.

If the contractor has done any work previous to signing the contract, then embody this work in the contract, otherwise an extra may be claimed for some small items, which at the time of signing the contract were understood to be included in the contract amount.

**Excavator.**—Where the foundations in a length of walling are not all one level, require the excavation to be in steps and not on the rake. Stipulate that there should be no excavations for ballast or sand unless necessary for the actual excavations, as this may affect the stability of the building.

Specify that brick rubbish be put under surface concrete which receives wood-block flooring or paving. There will then be less liability of damp coming through. In clay soils require the foundations to be taken down below the action of the weather. This may necessitate the foundations being taken down some 4ft., 5ft., or 6ft. below an otherwise good bottom. Specify a proportion of coke-breeze, slag, or gypsum, in concrete fireproof construction. It will the better resist the action of fire.

State that all foul earth and cesspools are to be removed and the excavation filled up with clean rubbish or concrete. Encase new drain pipes in concrete. If a slight settlement occurs, they will then the better hang together. Half channels in manholes are better formed in cement than with half pipes. A cleaner flow of sewage can thereby be obtained.

Then, as to the items under bricklayer. Do not forget to mention these points: To tie the walls in; to build external walls hollow, if possible, but in damp situations certainly; and specify the lead covering over the heads of doors, windows or arches coming within the hollow space. This will prevent the wet being communicated to the inner thickness of the hollow walls. Describe a weather joint externally to brick walls. Build the brickwork up in even heights and fill up all the joints. Let the sand be free from dirt and the water clean. Sea water or sea sand may be used where dryness is not essential. Build chimney stacks, where they appear above the roof, either partly down from the top, or else wholly in cement, preferably the latter. Build all parapet walls and the brickwork immediately under the eaves a certain distance down in cement, and a second damp course here and to chimney stacks will not be amiss. Half-brick walls should, of course, be built in cement. Boundary fence walling should have a damp course, and preferably be built in cement.

In retaining walls against the earth do not omit the weeping drains, or other device for taking off the accumulating water at the back.

Smoke flues should not be too large—9in. by 9in. is sufficient for most fireplaces; and gather the brickwork quickly over the fireplace openings. Build all stoves around solid, and fill up the boxings to chimney-pieces. Fires have often occurred through neglect of this precaution. Do not put too long a description to terra-cotta work because it may be the custom. Put a straight joint between connecting walls and a heavy tower, and do not attach a large chimney shaft to the main structure.

**Mason.**—Stone templates should be of considerable area, and tooled,—not left rough. In fact, any stone upon which work is built should be tooled. Do not forget the cement packing between the rivet heads on the top of flange girders and the cover stones. Stone hanging steps are almost better placed in position and pinned in after the building is up, sand courses being left in the brickwork for this purpose. In stone columns or pilasters the apophyses should be worked on the shafts. The effect is better. Portland cement will stain delicate marbles and some limestones.

**Carpenter and Joiner.**—When possible, employ wood block flooring on the lowermost floors next the ground. The ordinary joists and flooring for this position are more liable to decay. In this latter case let the joists and plates be of oak. Put cast-iron shoes or stone bases to all solid door frames. Bed window sills on to the stone sills in white lead, and do not omit the iron tongue. The

cleats to roof trusses and horns on solid door frames are sometimes forgotten. Snow boards to roof gutters will often prevent wet penetrating when the snow melts. Open casement windows outwards if you want to be perfectly sure of keeping out the wet. The ends of timbers, where bedded in walls, should have a circulation of air around them. A little sap on the edges of timber exposed to the air will not be any very great source of weakness, and it will not be likely to affect the rest of the timber. All gutters should be wide enough to walk along. Small angle fillets at the junction of horizontal and vertical planes of a roof flat will make better work than if the leadwork be turned up sharply. This remark will also apply to lead gutters. In some cases it is almost preferable to put a p.c. amount for the ironmongery to each door, window, or other fitment, and select the class of ironmongery afterwards.

**Slater and Tiler.**—Tiles and slates without boarding under should be torched.

**Smith and Founder.**—Let rain-water pipes stand out about 1in. clear of the walls.

**Plasterer.**—Timbers over 3in. wide should have the arrises taken off before the lathing is nailed on; this will enable the plastering to get a better key. The walls at the backs of skirtings or any other woodwork should be plastered over to prevent vermin harbouring. The outside of all flues, between timbers, floors, and where in the roof, should be roughly rendered over. This will be a preventive against fire. Single laths should not be lapped at the joints, as is often done.

**Plumber and Gasfitter.**—Do not omit the exhaust pipe to hot water circulation, or to the heating arrangements. Keep all hot and cold water pipes well away from each other, and from the action of frost. All pipes, whether gas or water, should be readily accessible, and if possible on the face of the walls. The furring up of hot water pipes is chiefly found between the boiler and the circulating cylinder, or tank. This portion of the piping should be easily accessible for cleansing. All horizontal gaspipe should be laid with a fall, to prevent any condensed liquid remaining in any part of the pipes, and thereby affecting the efficiency of the gas supply. It is a good plan to fix all internal pipes about 3in. clear of walls, especially hot water pipes. Do not work the hot water supply and heating arrangements from the same boiler. Failure is almost certain.

**Glazier.**—All glass subject to jars should be bedded in wash-leather or india-rubber as well as in putty. I might mention that one of the best methods for glazing skylights is merely to seal the glass on a bedding of putty and then to sprig it in and paint the joint over with the woodwork of the bars. It is perfectly water-tight, and there is no putty on the weather side to get out of order. This plan is much adopted in horticultural buildings, both vertically as well as in the top light glazing. The laps of the glass to top light should be cut to a curve. The water being directed down the centre of the glass and away from the rebates in the bars.

**Painter.**—External painting, if done in the spring or autumn will give a more satisfactory result. No painting, papering, or other decoration should be done while there is a suspicion of dampness about the building. All ironwork should be well painted over before it is buried or covered up.

## THE DISCUSSION.

Mr. G. H. Fellowes Prynne, in opening the discussion, referred to Mr. Macey's statement that there were only two ways of obtaining information for a specification, viz., study and observation. If they were going to write a specification, they ought to know something about the matter, and not have to ask their friends' advice, as Mr. Macey had suggested in his paper. He thought it was a queer way of putting the subject before the members of the Association. It seemed obvious to him that they would take great care that their copies of a specification agreed with the original, and he did not think any business man would fail to do so. The plans of the architect were his specification, and the specification was written for



the purpose of explaining the plans for the benefit of the surveyor or foreman, so that he might fully understand the drawings and details given therein. With regard to the question as to whether the surveyor or architect should write the specification, there was no doubt in his mind that it was the duty of the architect. The architect should have clearly in his mind the plans of any buildings he had designed, and his notes, although not written *in extenso*, should be absolutely sufficient for any surveyor to take the quantities from. When the architect is in sympathy with his work, he will make his expressions perfectly clear to the surveyor, who must thoroughly understand the architect's work if the quantities are taken out by him. If he understands the architect it is almost impossible for him to make a mistake when he amplifies the specification given to him by the architect. Mr. Fellowes Prynn thought the most valuable suggestion made in the paper was that the architect should, when quantities were not given, draw up his specification fully, and use a scheduled price-list. He concluded by moving a hearty vote of thanks to Mr. Macey. This was carried with acclamation.

Mr. H. Lovegrove expressed general agreement with the paper. He agreed with the president that the architect should write the specification. Mr. Macey had laid stress on an important point, and that was the figuring of plans. Walls, for instance, should always be figured. But it was an unfortunate fact that five out of six plans were badly figured. Mr. Lovegrove thought it was a capital plan to number the rooms consecutively in a large building, as it was such an easy matter to say that rooms Nos. 5, 6, and so on, shall be done in such and such a way. He endorsed the lecturer's remark about not making working drawings pictures. Just a few lines, not sufficient to obscure the details, made a plan effective and worth looking at. He was partly in agreement with the author on the separation of trades, although this, he said, could be carried too far. Legal formalities should only be mentioned in the contract.

Mr. F. T. W. Goldsmith said that Mr. Macey's paper had dealt with a very big subject, and had dealt with it from his particular point of view. A specification, he said, was not like a bill of quantities, a resumé, but a description of the method on which the architect's drawings were to be carried out. If any detail was required which was not made clear by the plans, then he thought the specification could be called into requisition, and when used in that way a particular description of the methods on which the architect would like the work carried out should be noted in the specification. The suggestion concerning the grouping of similar items should be adopted, as it was much better to describe a number of similar rooms or windows than to refer to windows or rooms separately. There was a disposition to regard a specification as a stepping stone to the bill of quantities. He was of the opinion that the specification and the contract should be kept distinct; and that the schedule should be included in every specification, as it was a splendid check on any builder who was inclined to overcharge.

Following Mr. Goldsmith came Mr. B. F. Fletcher, who said that he thought the subject an amusing one. All the speakers agreed that architects should write their own specifications, and then admitted that they did not do so themselves. When drawings and quantities were sufficiently full, the specification was superfluous. No man was so well able to write a specification as the man who had taken out the quantities for the building. The system of tabulation met with his approval. He did not think that because a good many architects did not write their specifications that they could not; it was because they did not think it worth the trouble and time.

Mr. C. H. Brodie started by defending Mr. Macey's statements. He said that it was all very well to pooh-pooh the remark that they should see that the specification agreed with the drawings, but it was a necessary remark to make in a paper such as had been read, because the two things did not very often

agree. With Mr. Macey's statement that a specification was a legal document, he did not agree. It should not be legally phrased, and it was a great mistake, in his opinion, that people would insist upon using legal phraseology in specifications.

Mr. Max Clark entirely disagreed with all the definitions of the word "best"; so far as specifications were concerned they were all unnecessary. The best timber would be too expensive, he said, for any building, and the same remark applied to the best iron, steel, and Yorkshire stone. He did not agree that the planking of the foundations should be put at the end of the excavation section; it should go at the beginning, as it applied to every part of the excavations.

The President said that he would rather that an architect drew every detail, and wrote every line of the specification. He did not recommend that an architect should leave the specification in the surveyor's hands. His own practice was to give an unpriced copy of the bill of quantities to the clerk of works, and he found this arrangement worked well.

## Enquiries Answered.

*The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.*

### BOOK ON LIBRARY CONSTRUCTION.

*To the Editor of THE BUILDERS' JOURNAL.*  
SHEWSEBURY.

DEAR SIR,—I shall be obliged if you will kindly advise me of a good modern book on Free Libraries. I want the best detailed book on the subject, giving useful particulars, such as floor space required, sizes of book cases, storage, hints as to arrangement, &c.

PROVINCIAL.

"Library Construction," by F. J. Burgoyne, published by George Allen, is a good book on the subject, and contains such particulars as you require.

### THE STUDY OF ORNAMENT.

*To the Editor of THE BUILDERS' JOURNAL.*  
STOURBRIDGE.

SIR,—Can you or any of your readers tell me of a text book; or how I should proceed with the study of "Historic Ornament"? I tried testing my knowledge of the subject by taking the examination held by the South Kensington Science and Art Department on the 17th ult. I thought that I had been studying the subject by attending the lectures bearing upon it by a well known lecturer, and by making such measured drawings and sketches of historical buildings and furniture, &c., as were accessible to me.—Yours faithfully,

PROVINCIAL STUDENT.

As regards the general question everything depends upon whether your aim is to pass examinations or to acquire really valuable knowledge. Your plan of making measured drawings and sketches from existing examples is excellent, and in time you will gain the knowledge which you want, but the process, though sure, is slow. The most recent general text-books on the subject at a moderate price are Ward's *Historic Ornament*, two vols., Chapman and Hall, and Meyer's *Handbook of Ornament*, Batsford (which gives an enormous number of examples, but only a small quantity of explanatory text). Messrs. Batsford have also in the press a book called "Notes on Ornament," by Mr. Glaisher, of the Manchester School of Art. A study of any of these might be supplemented by that of books of examples dealing with various periods, when you have made up your mind what periods and styles are most worth your while to pursue in detail. The examination paper which you send appears rather discursive, but you must remember that the examiners endeavour to cover as large a field as possible, desiring to give an equal chance to many different tastes. S. S. G.

## Professional Practice.

**Birmingham.**—A branch school of art is being erected in Moseley Road, and the foundation-stone was laid last week. The land selected for the school is situated at the corner of Lime Grove and Moseley Road, with a frontage of about 65ft. to the latter. A strip, a yard wide, has been given up to the widening of Lime Grove, and the new building, which occupies the front half of the remainder, has been planned with a view to future extension, so as eventually to occupy the whole of the land. The building when complete will present a symmetrical façade of classic character to Moseley Road, with the front entrance block advanced 7ft. in front of the side wings, and crowned with a circular pediment. A large entrance hall leads, through an open colonnade, to a stone staircase in the rear, which readily admits to all parts of the building. Leading directly from the hall there are also rooms for the masters, curator, and library. Beneath the front portion of the building will be a large basement, to be devoted to modelling and metal work; and on the first floor, over the entrance hall, a lecture room will be provided, with an annexe for building construction. The rear portion of the building will consist of three large classrooms. All these classrooms are well lighted, and approached by a corridor running along the central axis of the building, which will constitute the main artery of communication when the building is extended. The work is being carried out from designs by Mr. W. H. Bidlake, architect, by Messrs. Smith and Pitts, builders, who are under contract to complete the school by July 31st next for the sum of £6,602, minus an allowance of £100 for the old buildings.

**Chingford.**—Queen Elizabeth's Hunting Lodge, in Epping Forest, is to be restored at a cost of £500. The lodge is an oblong structure of timber, 30ft. by 20ft., consisting of three stories, with gabled ends and high-pitched roof, the staircase projecting from the hall. The massive timbers are still in particularly good condition, the walls being upright and the floors level. The restorations are to be carried out in accordance with recommendations submitted to the Corporation of London by Mr. J. O. Scott. In his report Mr. Scott points out that when the building was "restored" fourteen years ago the object seemed to have been to make the building appear new, and he recommends the removal of the partition on the first floor, taking away the plaster, restoring the woodwork, providing a new oak floor and ceiling, adding four new windows, and restoring the exterior.

**Halifax.**—The memorial stone of a new public hall for Halifax was laid recently. Mr. W. C. Williams is the architect. The building will comprise a large hall with a seating capacity for 2662 persons as follows:—Auditorium 932, grand circle 500, balcony 730, orchestra 500; a ballroom constructed on the latest principles; a lecture-theatre with a seating capacity of 370; and a reading-room or lounge with entrance from Fountain Street. There will also be eight shops; and a restaurant or dining-room, capable of accommodating 200 people, is provided in the basement. The total amount of the tenders is £20,482, and the cost of site £8,537.

**Wandsworth.**—The special committee with reference to the provision of new Board room and office accommodation for the Clapham and Wandsworth Union, have reported that, in pursuance of the power vested in them, they had appointed Mr. Alexander Graham, of Carlton Chambers, 4, Regent Street, London, W., to be the assessor to advise the guardians as to the merits of the respective designs received in connection with the new Board room and offices, at a fee of fifty guineas. Mr. Frederick W. Hingston, of Westover Road, Wandsworth Common, and Portland House, Basinghall Street, E.C., has been appointed quantity surveyor.



## Keystones.

**An Extension of Victoria Pier, Pembroke,** was opened by the Duchess of York last week.

**A new Library at Putney** has been opened. It occupies an area of 11,000 square feet, and contains about 9,000 books.

**New Public Baths at Radcliffe** have been erected, and were opened recently. They are in Whittaker Street, and have cost £5,000.

**A Statue** has been erected to the memory of Admiral Phillip, the first Governor of Australia, at Sydney, at a cost of £12,500.

**A Memorial to the Gordon Highlanders** who fell in the recent campaigns is to be erected in Aberdeen in the shape of a granite cross.

**A Public Library for Colwall.**—A new public library was opened by the Bishop of Hereford, on the 9th inst., at the village of Colwall, near Malvern.

**Merry Street School, Motherwell,** is being greatly enlarged according to plans by Mr. A. Cullen, F.R.I.B.A. Messrs. Maccall and Harvie are the measurers.

**A new Hospital** is being built in Oxford Street and Gloucester Street, Manchester, in accordance with the designs of Messrs. A. Waterhouse and Son, of London.

**A Monument to Duke Ernest of Coburg** was unveiled at Coburg last Wednesday. The monument, which is in the form of an equestrian statue in bronze, is the work of Professor Eberlien, of Berlin.

**Guildhall Art Gallery.**—It has been decided by the Court of Common Council to make an annual allowance of £500 for the purchase of paintings or drawings to be exhibited in the Corporation Art Gallery at Guildhall.

**The Gladstone Memorial.**—At a meeting of the Executive Committee of the Gladstone Liberal Memorial Fund, it was announced that Mr. F. W. Pomeroy has completed the statue of Mr. Gladstone in clay, and will shortly commence on the marble.

**Byron Statue for Aberdeen.**—The Aberdeen Byron Statue Sub-Committee have decided to erect a bronze figure of the poet in front of the grammar school of which Byron was a pupil, and they have chosen Mr. Pittendreich Macgillivray as sculptor.

**New Public Buildings at Bristol.**—The Bristol City Council have applied to the Local Government Board for permission to borrow £7,125 for the provision of a Council Chamber and Public Offices, and £3,250 for the erection of fire stations. It is proposed that the Council Chamber be 60ft. by 34ft. wide.

**A handsome cross** in Aberdeen granite has been erected over the grave of Sir Frank Lockwood, in the cemetery at Putney Vale, adjoining Wimbledon Common. The design is an adaptation of the Ancient Cross at Oronsay, and stands about 12ft. high. The work has been carried out by the Art Memorial Company, of West Norwood.

**Excavating Accident at Yarmouth.**—During excavating work for the Yarmouth Water Company's new reservoir at Caister there was an alarming subsidence of earth. Tons of soil suddenly fell into the pit where three men were working. Two of the men extricated themselves, but the other had to be dug out, and it was found that both his legs were fractured.

**A Beautiful Memorial Window** has been erected in the south aisle of the Choir of Lichfield Cathedral to the late Ven. Melville Horne Scott. A sum of £561 was raised, and after paying the cost of the window, the balance is to be invested. The particular subject of the window has been selected according to the plan of the windows in the south aisle—all being taken from the early chapters of the Acts of the Apostles—and the scene represents St. Barnabas and others bringing the proceeds from the sale of their lands and laying the money at the Apostles' feet.

**A New Town Hall.**—A resolution was carried at a meeting of ratepayers at Maindee in favour of building a new Town Hall at Newport, Mon., on another site, instead of extending the present structure, as had been proposed.

**Leeds Public Baths.**—The fifth public bathing establishment, erected by the Leeds Corporation, was opened recently. It is situated in the Meanwood Road, and has cost £13,000. The architects were Messrs. W. Hanstock and Son, of Leeds and Batley.

**The Proposed Enlargement of Bradford Town Hall,** in view of the extension of the city boundaries, was discussed at a recent meeting of the Bradford Corporation Finance Sub-Committee. The subject is to be considered again at a future meeting.

**New Church at West Bromwich.**—The foundation stones of a new Primitive Methodist Church in the Lyng district of West Bromwich were laid a short time ago. The church is to be erected from plans by Mr. Alfred Long, and will cost £4,990.

**The Improvement of St. Ninian's Cathedral, Perth,** is being proceeded with. Of the £10,000 aimed at last year, £8,629 10s. 8d. has been paid or promised, but the improvements, which were then estimated to cost £10,000, have since been found to amount to £14,950.

**A new Coroner's Court for Poplar.**—It has been decided by the Poplar District Board by a majority of one to erect the new coroner's court by direct labour. The cost is estimated to exceed £8,900, and this will be the largest work carried out by this system in the East of London.

**Historical Bath.**—The Bath Corporation is pursuing a scheme of affixing mural tablets on some of the many houses in the city possessing historic interest. They have just caused one to be placed on the façade of 19, Bennett Street, where Admiral Phillip, the first Governor of Australia, lived.

**Another Statue of Cromwell.**—At a meeting of the St. Ives (Hunts.) Town Council last Thursday, it was decided to try to obtain funds for the erection of a statue in St. Ives to the Protector. Huntingdon is also endeavouring to raise a fund for a statue of Cromwell, and it is thought that this has stirred up the people of St. Ives.

**A Bust of Mr. Gladstone,** which is said to be exceedingly lifelike, has just been executed for the Liverpool Reform Club by Mr. H. C. Fehr. The bust has been made to the order of the Art Memorial Company, of West Norwood. Mr. Gladstone is represented in his L.L.D. robes at the period when he was passing the Home Rule Bill.

**Medieval Paris at the Exhibition.**—Not far from the Machinery Hall at the Paris Exhibition, an imitation of the Cour des Miracles, or reproduction of the notorious beggars' haunt of the Middle Ages, has been organised. The show is called "Paris in 1400," and has been planned by M. Colibert. The district between Notre Dame des Victoires, near the Bourse and the Porte Saint-Denis, has been reproduced in panoramic fashion, with appropriate imitations in miniature of various monuments and buildings. The Mayfair of the Middle Ages is also shown, and the exhibition on the whole promises to prove an attraction as a curious reconstruction of a picturesque portion of old Paris.

**A.A. Officers for 1899-1900.**—The following is the result of the election of officers for the Architectural Association for the coming year:—President: G. H. Fellowes Pryne. Vice-Presidents: E. Howley Sim, H. T. Hare. Committee: B. Pite, W. A. Pite, P. J. Marvin, A. H. Hart, F. G. F. Hooper, H. A. Satchell, M. Garbutt, W. A. Forsyth, W. H. Seth-Smith, A. Bolton. Hon. Treasurer: Hampden W. Pratt. Hon. Librarian: A. S. Flower. Hon. Secretaries: G. B. Carvill, R. S. Balfour. The foregoing form the Committee. Hon. Solicitor: W. H. Jamieson. Hon. Assistant Librarian: W. B. Dukes. Hon. Auditors: J. W. Stonhold, W. E. Davis. Assistant Sec. and Registrar: D. G. Driver.

## Views and Reviews.

### THE EXHIBITION AT KNIGHTS-BRIDGE.

In the galleries of the International Society of Sculptors, Painters, and Gravers there are things, pictures especially, to be seen with a degree of comfort which may possibly be experienced elsewhere, but never at Burlington House. There is no overcrowding either of persons or paintings, and, with regard to the latter, there is the inestimable advantage of having them all on the line, excepting only the few that may as well be a little higher. If only the light were better the condition of things would be perfect, but unfortunately during a great part of press day it was quite insufficient. In the main galleries it is all right when the sun shines, but there is never anything like enough on the walls of the room where the drawings and prints are, and as these form an important part of the whole exhibition the disappointment appeared to be general. The critic is more likely to be serene and impartial under conditions which favour the exercise of his very peculiar faculty than he can hope or pretend to be when there are thousands of things to be seen, but ever here he may wonder, considering what he has heard of the vigorously exclusive policy of the Society, that so much inferior work is admitted.

It must be because the Society, being nothing if not eclectic, is prepared to bestow its blessing upon whatsoever savours of art that such an absurdity as "Fate," No. 146, is admitted. The artist has better to show, and such a taste of his quality as we have in the other room should have been considered enough. An artist and naught else is the painter of "Persephone," No. 202, who fails, it is thought, completely. The public is much to be pitied, because designers, for the most part devoid of any imaginative faculty, are so often required to give form to our conceptions of life in worlds not our own, and this is a case in point. One can imagine them saying: "Space here for the decorative artist," and space is given accordingly.

There is evident everywhere here an impartial delight in mere art; the consequence is that all kinds are represented, and of each we are shown the best, the best that was to be had: By Mr. Whistler, the very quintessence of etching; by Mr. Whistler elsewhere some selected bits of portraiture that seem to forbid our attempting more in that direction. We say "in that direction" advisedly, for it is not for everyone to discover either in face or form what Mr. Whistler does; nor, on the other hand, is it pretended that his selections exhaust the whole subject, and what Mr. Henry sees may be thought in its way to be quite as important; for characterisation assisted by absolute artistry can never go further nor be more completely satisfactory than in his portraits here.

If it be true that the French imagine nothing but what is impure, and that the Scotch are excessively sparing of what little imagination they have, it would seem to follow as a matter of course that the best of the portraits and landscapes should be the most remarkable things in the show, and certain it is that they are. Taking a number of Laverys and Guthries for granted, the best remembered, perhaps, are Alexander Mann's, No. 104; T. T. Allsop's, No. 113; Harold Speed's, No. 230; J. Sauter's, No. 51; and Mrs. Walton's, No. 155. It happens only too often that the painter is more in love with his brush than his sitter, but this from the earliest times has been so, and by way of compensation for what does not appear, we ask that the painting itself, as if by Velasquez or Rembrandt, shall be amazingly good. Speaking generally, then, of landscapes and portraits together, there are numberless ways in which Nature affects the painter, and as many of telling her story. Whoever has perfected any one of such ways is a master in his own sphere, and able to impart to whatever he does the ineffable distinction of style. What delights one here is the fact that of each of these styles there is one perfect



example at least. Compare for its breadth and almost epic simplicity No. 227, Calma Crepuscolare, by the Italian Fragiocomo, with the more familiar Anglo-Gallican renderings of Nature, seen dimly because of the heat and the vapours, and it will be agreed that room has been made for nearly everything good of its kind.

In the rooms devoted to drawings and engravings we arrive at the same conclusion; in every art the top note struck by some recognisable master, and nothing could be more instructive than works disposed in this way, for they illustrate almost to perfection, the principles we would if we could inculcate. It is proposed to make the sculpture and other examples of craft together with those in the New Gallery the subject of a separate notice.

E. R.

### THE NATURE OF GOTHIC.

*One of the very few necessary and inevitable utterances of the century.* That is William Morris' estimate of the matter, contained within this little book which Mr. George Allen is offering to the public for the sum of 1s. It is a reprint of a chapter from Ruskin's "Stones of Venice" which explains with marvellous insight and lucidity the real nature of Gothic architecture. It was a good idea to publish this notable chapter in this cheap and handy form, for it constitutes practically a complete treatise by itself and contains but few references to other parts of the book of which it forms a part. Moreover, it is a fine example of that combination of artistic and ethical teaching to which Ruskin's writings owe both their charm and their enduring influence. Such teaching as this chapter contains is not yet out of date, and one can imagine that many who have never read the "Stones of Venice," or the "Seven Lamps of Architecture," will learn from this booklet to look with new interest on the rude work of the old Gothic sculptors, and see in it the signs of a noble freedom which in these latter days we have lost. One may suppose, too, that many who have thought of Gothic architecture merely as a matter of gables and pointed arches will learn from this book something of its soul—its true inwardness as the modern phrase has it—as well as of its outward form. No doubt, also, many who are familiar with the original work will be glad to possess themselves of this reprint for the sake of the preface by William Morris, from which we have already quoted. The lesson which Ruskin here teaches is, according to Morris:

that art is the expression of man's pleasure in labour; that it is possible for man to rejoice in his work, for, strange as it may seem to us to-day, there have been times when he did rejoice in it; and, lastly, that unless man's work once again becomes a pleasure to him, the token of which change will be that beauty is once again a natural and necessary accompaniment of productive labour, all but the worthless must toil in pain, and therefore live in pain. So that the result of the thousands of years of man's effort on the earth must be general unhappiness and universal degradation—unhappiness and degradation, the conscious burden of which will grow in proportion to the growth of man's intelligence, knowledge, and power over material nature.

A number of the original illustrations are reproduced, but a number of others to which reference is made in the text are omitted. This is rather irritating to the reader; still one cannot expect everything for a shilling, and if the reader's interest is excited to such a degree that he forthwith purchases the whole work from which this is an extract, that perhaps is about the best thing that could happen.

"The Nature of Gothic," by John Ruskin, with a preface by William Morris. George Allen, 156, Charing Cross Road, London. Price 1s. net.

### Artisans' Dwellings in Manchester.

The Local Government Board having given their sanction to the City Council borrowing £10,000 for the erection of artisans' dwellings in Milk Street, and having also approved of the plans of the buildings, the Improvement Committee, at their meeting last Wednesday, were in a position to decide to advertise for tenders for the erection of the houses forthwith. The proposal is to build sixty-one tenements, in four blocks; on the dual principle.

## Under Discussion.

### PEOPLES PALACE ARCHITECTURAL SOCIETY.

A meeting of this Society was held on Saturday, April 29th, Mr. Francis R. Taylor in the chair. A paper was read by Mr. H. A. Darling on "Girder Construction." The author, in his opening remarks, said that some few years ago wrought-iron was almost universally used, it being cheaper than steel. At the present time, however, the more economical methods employed in the manufacture of steel have changed this, and it is now the exception to specify wrought-iron for structures, steel having taken its place. It was pointed out that rolled joists were uneconomical, especially for large spans, because of the section being uniform from end to end, and consequently no provision was made for the variation of the stresses to which the girder was subjected. This was to some extent remedied by the use of compound girders, but there was a great waste of material in many of the stock sections, the greatest waste occurring in the web. Plate girders were then considered, and the processes involved in the manufacture of the common types of iron and steel girders were described. On the conclusion of the paper a series of questions on practical details were asked and answered, and a vote of thanks was accorded by acclamation to the author. A paper on "Portland cement" was then read by Mr. Albert Grenville, which dealt with the manufacture, properties, and uses of the material. The paper was well illustrated with lantern slides, and on its conclusion a hearty vote of thanks was accorded to the lecturer. The meeting then adjourned.—The next visit will be made to the "Charterhouse," on Saturday, May 13th, through the kindness of Canon Haig Browne.

### EXCAVATIONS AT SILCHESTER.

An unusually large audience was attracted to a meeting of the Society of Antiquaries at Burlington House to hear the results of last year's excavations on the site of the Roman city of Silchester. The paper read on this subject by Messrs. W. H. St. John Hope and G. E. Fox was illustrated by plans and lantern slides. A large number of the antiquities found were also displayed on the table and walls. Conspicuous amongst these were a quern with its wooden handle still remaining intact, a sepulchral urn containing burnt human bones, a tile inscribed "Satis," the usual array of pottery, and some mosaic pavements. Amongst the pottery was a large amphora which created some amusement. In reply to an inquiry from a Fellow as to how the President knew that it was an amphora, he replied that it must be one because both its handles were missing. The insula (or rectangular blocks between the streets), explored in 1898, lie next the city wall on the south-west between the small postern gate in the west wall and the south gate. As the result of nine years' work twenty blocks, covering an area of 65 acres out of a total of 100 acres within the walls, have been explored, and all the buildings found therein plotted on the plan. Between insulae XIX. and XX. and the city wall is a triangular piece of land which was also excavated; insula XIX. proved to be decidedly the most interesting. It differed from all the other insulae in being entirely inclosed within a wall, measuring 384ft. from north to south and 271ft. from east to west. Within this inclosure was a remarkably fine house of the better class, built round a courtyard, and having the usual winter rooms heated by hypocausts. Adjoining the house on the south side was a large workshop, and in the yard outside were two water tanks. Mr. St. John Hope suggested that the tanks possibly indicated the existence of a tannery. The size and importance of the house may be gathered from the fact that it presented a frontage of 166ft. to the road. At the south-west corner of insula XIX. the sepulchral iron containing incinerated bones was discovered. At a depth of 1ft. 9in. below the foundations of the mansion in insula XIV.

were discovered the remains of an earlier house, built partly of timber, and having a very remarkable tessellated pavement. The design of the pavement indicates, Mr. G. E. Fox pointed out, that it probably dates from the 1st century A.D., and that therefore the house to which it belonged was, if his views were correct, the earliest yet found on the site. The ornament consists of elegant scrolls of foliage resembling the painted designs at Pompeii and on Samian ware, thus differing altogether from the later mosaic pavements in which the plait, or braidwork, and the Greek fret predominate. Mr. Alma Tadema agreed with Mr. G. E. Fox that the pavement was an attempt to imitate painting in Mosaic rather than the product of a true artist in Mosaic. In the discussion which followed, Mr. F. Haverfield said that the plan of the city as now revealed to him by the last nine years' excavation seemed to show that the builders copied a Celtic rather than an Italian model. Mr. C. H. Read, of the British Museum, called attention to the fact that none of the glass vessels dug up showed any trace of iridescence, which he attributed rather to the composition or fabric of the glass than to the conditions of their burial during the last thousand years. Sir Henry Howarth created much laughter by saying that he had for years been endeavouring to induce his friend Mr. Alma Tadema to turn his attention to Britain during the Roman occupation, and to choose as the subject for his next Academy picture a Roman General engaged in some such really noble work as driving the Picts and Scots beyond the Antonine Wall.

## New Companies.

### A. H. Lavers, Limited.

This company was registered on May 1st with a capital of £25,000 in £10 shares, to acquire, take over as a going concern, and carry on the business of a whiting manufacturer and brick, cement, and builders' material merchant now carried on by Alfred H. Lavers at Lavers Wharf, Nine Elms, London, S.W., and to enter into an agreement with the said vendors. The first subscribers (each with one share) are: Alfred H. Lavers, Lavers Wharf, Nine Elms, S.W., merchant; Thomas Ferguson, 1, Apple Road, Parson Green, S.W., builder; Charles W. Burdett, 63, Binfield Road, Clapham, London, S.W., traveller; George H. Franklin, 39, Patmore Street, Battersea, S.W., cashier; George B. Fenn, 129, Camberwell New Road, S.E., traveller; J. N. Everidge, Lovelace Road, Surbiton, S.W., builder; C. Stone, 15, Wellwinch Road, Milton, near Sittingbourne, Kent, waterman. Alfred H. Lavers is the governing director with £500 per annum. Qualification, £500. Remuneration of the ordinary directors (if any), £600 divided between them. Registered office, Lavers Wharf, Nine Elms, London, S.W.

### Isle of Walney Estates Co., Ltd.

This company was registered on April 29th, with a capital of £100,000 in £1 shares, to acquire any lands and buildings in the Island of Walney, in the borough of Barrow-in-Furness, Lancs., to enter into an agreement with John Poole, to develop and turn to account such lands and buildings and to carry on the business of land, estate and house owners and agents, builders, contractors, building material merchants, &c. The first subscribers (each with one share) are: Albert Vickers, 28, Victoria Street, S.W., gent.; S. Loewe, 32, Victoria Street, S.W., merchant; Frank Dawes, 50, Old Broad Street, E.C., solicitor; J. T. Paine, 32, Victoria Street, S.W., secretary; Arthur T. Dawson, 17, Mount Street, W., Lieut. R.N.; Arthur Lambart, 32, Victoria Street, S.W., Major, R.A.; and George T. Buckham, 32, Victoria Street, S.W., engineer. The number of directors is not to be less than three nor more than seven. The first are Albert Vickers, James Dunn, Alexander Adamson, George Pattinson and John Poole. Qualification, £1,000. Remuneration as fixed by the company.



**Sunderland Properties Company, Limited.**

This company was registered on April 27th, with a capital of £15,000 in £5 shares (of which 1000 are preference), to acquire, develop, turn to account, work and deal with freehold, copyhold, and leasehold lands, houses, buildings, ground rents, &c., in or near Sunderland or elsewhere. The number of the directors is not to be less than five nor more than twelve. The first are: Alexander Prosser, latter, of 20, Belle Vue Park, Sunderland; Grainger Heslop; John Mitchinson, chemist, of 6, White House Crescent, Sunderland; William C. Hetherington, engineer, of 12, Vicarage Terrace, Sunderland; and Lawrence Smith, marine superintendent, of 28, Lorne Terrace, Sunderland. Qualification, twenty shares. Remuneration, as the company may decide.

**Dunn, Bennett and Co., Limited.**

This company was registered on April 29th with a capital of £35,000 in £1 shares, to acquire and take over as a going concern the business now carried on by Thomas W. Bennett, William Dunn and Enoch Colclough at the Royal Victoria Works, Burslem, Staffs., as "Dunn, Bennett and Co." to enter into an agreement with the said vendors and to manufacture, sell and deal in earthenware, ironstone, pottery bricks, tiles, pipes, china, glass, porcelain, terra-cotta, ceramic ware, ironmongery, enamelled goods, hardware, etc. The first subscribers (each with one share) are:—James T. Mogridge, 10, Bartlett's Buildings, E.C., agent: Thomas W. Bennett, Royal Victoria Pottery, Burslem; potter: William Dunn, Bleak Hill, Burslem, potter: Enoch Colclough, Bank Hall, Burslem, gent: Alfred W. Bennett, Grove House, Burslem, potter: John W. Cooper, 13, Peel Street, Wolstanton, Stoke-on-Trent, clerk: and Spencer Lawton, J.P., Elm House, Burslem, valuer. The number of directors is not to be less than three nor more than seven. The first are:—Spencer Lawton, J.P., Thomas W. Bennett, William Dunn, J. T. Mogridge and A. L. Harkness. Qualification £200. Remuneration £20 each per annum and £30 for the chairman.

**West's Stourbridge Brick Co., Ltd.**

This company was registered on April 29th with a capital of £10,000 in £1 shares, to acquire, take over as a going concern, and carry on the business of firebrick, fireclay, brick and tile manufacturers and merchants, carried on at 5, 5A and 6, West End Lane, Kilburn, and Queen's Park Goods Station, West Kilburn, under the style of "West's Stourbridge Brick Company," and at Flora Wharf, 537 and 539, Harrow Road, W., under the style of "Warner and Co." The number of directors is not to be less than three nor more than seven. The first are Alfred H. Smith, Samuel J. Dainton, Charles Peach and Alfred J. West. Qualification, £100. Remuneration, £50 per annum, divided between them.

**John and Henry Cocks, Limited.**

This company was registered on May 2nd with a capital of £20,000 in £10 shares, to acquire, take over as a going concern, and carry on the business of builders, contractors, brewers' sign board contractors, decorators, and public-house, shop, and office fitters, now carried on under the style of "John and Henry Cocks, at 1, Frederick Place, and Grove Road, Mile End Road, E., and at 27, Arnold Road, Bow, London, E., and to enter into an agreement with William B. Read, Miss Mary C. Ivimey, and Miss Matilda J. Ivimey. The first subscribers (each with one share), are:—William B. Read, Station Road, Epping, gentleman; Miss Mary A. Ivimey, Blackwood, Harrogate, Yorks.; Miss Matilda J. Ivimey, 3, Bloomsbury Place, Brighton; John W. Woolfe, 18, Tubb Road, Leytonstone, traveller; Morris Gladwell, 44, Addington Road, Bow, E., superintendent of works; Arthur F. Gregory, Ashleigh, Teesdale Road, Leytonstone, clerk; Joseph Custard, 323, East India Dock Road, E., clerk. The first directors are:—William B. Read (governing director,

with £300 per annum), John W. Woolfe (governing director, with £50 per annum), Morris Gladwell, and Arthur F. Gregory (ordinary directors, with remuneration as the company may decide). Qualification, one share.

**Owen Stone Company, of Scotland, Limited.**

This company was registered in Edinburgh with a capital of £25,000 in £1 shares, to acquire the patent rights, properties, and effects formerly belonging to the Owen Stone Company (Limited), now in liquidation, and to carry on in Scotland, Northumberland, and the province of Ulster, the business of patent stone manufacturers, builders, contractors, decorators, and dealers in lime, bricks, timber, and other building materials. The first subscribers (each with one share) are John Kerr, 94, George Street, Edinburgh, contractor; Robert Kitchen, Bonnyrigg, Midlothian, builder; Gordon Stuart, 56, Frederick Street, Edinburgh, W.S.; James Annandale, Polton, paper maker; James Romanes, 44, Queen Street, Edinburgh, C.A.; George Reedman, 8, Mary Place, Edinburgh, advocate; John Romanes, 44, Queen Street, Edinburgh, writer to the signet. The first directors (to number not less than three nor more than seven) are: James Annandale, G. Blyth, John Kerr, Robert Kitchen, Robert Muir, G. Reedman, and James Romanes. Qualification, 250 shares. Remuneration, as the company may decide.

**Property Alliance, Limited.**

This company was registered on May 3rd, with a capital of £250,000 in £1 shares, to acquire by purchase, lease, exchange or otherwise, lands, buildings, flats, houses, mansions, &c., in London or elsewhere, to develop and to turn to account the same by preparing building sites and by constructing, reconstructing, pulling down, altering, improving, decorating, furnishing, and maintaining offices, flats, houses, factories, cellars, warehouses, shops, wharves, buildings, &c., and to advance money to builders, tenants, and others. The first subscribers (each with one share) are: Israel Hart, Bart., Leicester; Lewis H. Isaacs, 5, Verulam Buildings, Gray's Inn, surveyor; Lewin Solomon, 55, New Broad Street, E.C., architect; John Law, Holly Bank, West Ewell, gentleman; E. C. Arnold, 24, Portland Place, W., Captain of Militia; J. S. Rubenstein, 5, Raymond Buildings, Gray's Inn, solicitor; and William Leggatt, 5, Raymond Buildings, Gray's Inn, solicitor. The number of directors is not to be less than three nor more than seven; the subscribers are to appoint the first. Qualification, £250. Remuneration, £450 per annum and a share in the profits divided between them. Registered Office, 24, Victoria Street, Westminster.

**Queen's Gate Mansions Limited.**

This company was registered on May 4th with a capital of £12,000 in £1 shares, to carry on at or near Hyde Park, London, or elsewhere, the business of proprietors of residential mansions, also hotel, boarding house, and tavern keepers, job masters, bath proprietors, &c. The first subscribers (each with one share) are: Percy W. Evennett, 19, Southwold Road, Upper Clapton, clerk; F. A. Dawson, 43, Lausanne Road, Peckham, S.E., accountant; Frank G. Exell, 6, Valley Road, Streatham, S.W., clerk; Frank H. Kent, 18, Stanwich Road, Stamford Hill, N., clerk; Frederick W. Stiff, 7, Hazelville Road, Hornsey-rise, N., clerk; Frank H. Strange, -36, Northcote Road, Croydon, clerk; and William H. Bustard, 134, St. Stephen's Road, Upton Park, E., secretary. The number of directors is not to be less than two nor more than five; the first are William Kirby and others to be appointed by the subscribers. No qualification. Remuneration as fixed by the company.

The Southwark Art Exhibition is to remain open till May 28th, including Sundays.

**Keystones.**

**The Construction of Roads** upon the Castelnau Estate at Mortlake is being carried out under the supervision of Mr. Robert Willey, of 33, New Bridge Street, London, E.C. The outlay will be about £3,000.

**New City Institute.**—The Bishop of London last Wednesday afternoon laid the foundation stone of a new school and technical institute, under a scheme of the Charity Commissioners, in connection with Sir John Cass's School at Aldgate, founded in 1710.

**A New Temple for Ilfracombe Freemasons.**—The foundation-stone of a new temple for the members of the Lodge Concord, 1135, was laid at Ilfracombe last Wednesday. The site is in Northfield Road, and the building is being erected from designs by Mr. H. M. Gardner.

**New Schools for Peebles.**—At a special meeting of the Peebles School Board it was unanimously resolved to feu from Lord Elibank three acres of ground at Kingsland, Peebles, on which to erect an elementary school to accommodate 600 children, at an estimated cost of £8,000.

**A Discovery in Oxford Street.**—During some recent excavations along Oxford Street, London, W., the workmen came upon quite a number of the ancient wooden pipes, formerly used to convey water through the streets of London. They consist of small elm trees, bored with a hole 6in. in diameter.

**A New Graving Dock.**—The new graving dock at the Canada Dock, Liverpool, has been formally opened. It contains 3,226,648 cubic feet of water, and can be emptied at the rate of 922 tons a minute. The pumping installation consists of three centrifugal pumps, each of 51in. diameter and capable of discharging 1,000 tons a minute if necessary.

**The Richmond and District Victoria Hospital.** erected as a memorial of the Diamond Jubilee, has just been formally opened. The building is one storey high and comprises two wards, each having three beds, for males and females respectively. There is a special ward with a single bed. The architects are Messrs. Clark and Moscrop, of Dartington.

**The Lucknow Memorial.**—A monument, erected by the officers and men of the Duke of Cornwall's Light Infantry to their predecessors, the gallant 32nd Foot Regiment, to commemorate their share in the defence of the Residency, was unveiled recently by Lady Inglis. The memorial has been erected on the lawn facing the main Residency building, and consists of two huge blocks of Cornish granite from the Bosahan Quarry, near Penryn, with suitable inscriptions on both sides.

**COMING EVENTS.****Wednesday, May 17.**

SOCIETY OF ARTS.—Mr. J. E. Jackson, on "The Law of Trade Marks." 8 p.m.

BUILDERS' FOREMEN AND CLERKS OF WORKS' INSTITUTION.—Ordinary meeting of the Members. 8 p.m.

**Thursday, May 18.**

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—Mr. Henry Hawley on "Lithography—past and present."

INSTITUTION OF ELECTRICAL ENGINEERS (at the Society of Arts, John-street, Adelphi, W.C.).—Discussion on Mr. P. V. McMahon's paper on "Electric Locomotives in Practice and Tractive Resistance in Tunnels, with Notes on Electric Locomotive Design." 8 p.m.

CARPENTERS' HALL, LONDON WALL (Lectures on Carpentry and Joinery).—Professor Bannister Fletcher on "Timber Roofs, Tie Beam, and Hammer Beam." 7.30 p.m.

ROYAL INSTITUTION.—Mr. Lewis F. Day on "Embroidery." III. 3 p.m.

SOCIETY OF ANTIQUARIES.—8.30 p.m.

**Friday, May 19.**

ROYAL INSTITUTION.—The Bishop of Bristol on "Runes and Other Characters and Inscriptions in the British Isles." 9 p.m.

**Wednesday, May 24.**

SOCIETY OF ARTS.—Ordinary Meeting at 8 p.m.

**Thursday, May 25.**

SOCIETY OF ARCHITECTS.—Meeting at 8 p.m.

SOCIETY OF ARTS.—(Indian Section).—Meeting 4.30 p.m.



## CURRENT PRICES.

FORAGE.			
Hay, best	per load	2 0 0	3 10 0
Sainfoin mixture	do.	3 0 0	3 15 0
Clover, best	do.	3 10 0	4 5 0
Beans	per qr.	1 6 6	—
Straw	per load	1 4 0	1 18 0

## OILS AND PAINTS.

Castor, French	per cwt.	1 4 6	1 5 8
Colza, English	per cwt.	1 2 9	—
Copperas	per ton	2 0 0	—
Kerosine, water white	per cwt.	1 5 0	1 15 0
Lard	per cwt.	1 9 0	—
Linseed	per cwt.	0 19 0	—
Neatsfoot	per gal.	0 2 6	0 4 0
Paraffin	per cwt.	0 10 2	0 19 0
Pitch	per barrel	0 8 0	0 8 6
Tallow, Town	per cwt.	1 3 0	1 3 9
Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 13 6	—
Glue	per cwt.	1 19 0	2 18 6
Lead, white, ground, carbonate	per cwt.	0 17 0	—
Do. red	per ton	2 15 0	—
Soda crystals	per ton	3 12 0	—
Shellac, orange	per cwt.	2 2 6	2 15 0
Do. sticklac	do.	0 8 9	—
Pumice stone,	do.	—	—

## METALS.

Copper, sheet, strong	per ton	87 0 0	—
Iron, bar, Staffs. in London	do.	6 15 0	8 10 0
Do. Galvanised Corrugated sheet	do.	12 5 0	12 10 0
Lead, pig, Spanish	do.	14 5 0	—
Do. English common brands	do.	14 10 0	—
Do. sheet, English, 6lb.	do.	—	—
Do. per sq. ft. and upwards	do.	16 10 0	—
Do. pipe	do.	17 5 0	—
Nails, cut clasp, 3in. to 6in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Straits	do.	116 16 3	117 6 3
Do. English ingots	do.	116 0 0	117 0 0
Zinc, sheets, English	do.	27 10 0	28 10 0
Do. Vieille Montaigne	do.	31 0 0	—
Do. Spelter	do.	28 10 0	28 16 3

## TIMBER.

## SOFT WOODS.

Fir, Dantzic and Memel	per load.	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Laths, log, Dantzic	per fath.	4 10 0	5 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Deals, Archangel 2nd & 1st	per P. Std.	10 15 0	18 10 0
Do. do. 4th & 3rd.	do.	12 0 0	12 5 0
Do. do. unsorted	do.	7 5 0	8 5 0
Do. Riga	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow	do.	13 15 0	—
Do. do. 2nd	do.	12 0 0	—
Do. do. Unsorted	do.	8 0 0	10 10 0
Do. do. White	do.	7 15 0	9 15 0
Do. Swedish	do.	11 5 0	12 0 0
Do. White Sea	do.	12 5 0	—
Do. Quebec Pine, 1st	do.	16 10 0	22 0 0
Do. do. 2nd	do.	12 0 0	—
Do. do. 3rd & c.	do.	7 0 0	7 15 0
Do. Canadian Spruce, 1st	do.	7 0 0	10 5 0
Do. do. 3rd & 2nd	do.	6 5 0	8 0 0
Do. New Brunswick	do.	7 5 0	8 0 0

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Battens, all kinds	per P. Std.	7 10 0	8 12 6
Flooring Boards, 1 in.	per square	0 11 6	—
Do. prepared, 1st	do.	0 10 6	0 11 0
Do. 2nd	do.	0 9 0	—
Do. 3rd & c.	do.	—	—

## HARD WOODS.

Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 12 6	3 17 6
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, lin., Cuba	per ft. sup.	0 0 4	0 0 4 1/2
Do. Honduras	do.	0 0 3 7/8	—
Do. Tobasco	do.	0 0 4 21/22	—
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 5 1/2	—
Do. Ystrad Mynach	do.	0 0 3 1/16	—
Do. St. Domingo	do.	0 0 4 23/32-6	23/32
Do. Tobasco	do.	0 0 4 23/32-5	21/32
Oak, Dantzic and Memel	per load	3 5 0	3 5 0
Do. Quebec	do.	4 12 6	5 0 0
Teak, Rangoon, planks	do.	9 15 0	14 5 0
Wainscot, Riga (Baulk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub. ft.	0 2 8	0 5 6

## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

**ABER-BARGOED (Wales).**—For the erection of forty houses, Aber-Bargoed. Mr. G. Kenshole, architect, Duffryn House, Ystrad Mynach:—  
 Tom Evans ... £210,540 0 | Jones Bros. ... £28,026 10  
 Jenkins & Sons ... 8,270 0 | J. C. Richards ... 7,839 10  
 D. W. Rosser ... 8,265 0 | Williams & Sons ... 7,840 0  
 Marsh & Wride ... 8,210 0 | Davies Bros. ... 7,613 3  
 W. Harris ... 8,107 0 | James and Sons ... 7,555 0  
 Lewis Davies ... 8,075 0 | Penygraig\* ... 7,555 0  
 Morvan & Sons ... 8,045 13 | \*Accepted.  
**BECKENHAM.**—For alterations and additions to pair of cottages, Thelsey Park, Beckenham. Mr. Alfred Cox, architect, 4, Adam-street, Adelphi:—  
 G. Palmer ... £21,969 | E. Orpin ... £1,871  
 J. Kick ... 1,920 | H. Heathfield ... 1,827  
 Syme & Duncan ... 1,889 | L. Evans, Bromley ... 1,795  
**BUCKNALL.**—For Abbey Hulcon section of the Bucknall Sewerage scheme. Lamer Sugden, F.R.I.B.A., engineer and surveyor to the Council, 20, Cheapside, Hanley, and at Leek:—  
 Baznall ... £21,181 0 | Cornes ... £21,050  
 Barke ... 1,125 16 | Williams, Etruria\* ... 940  
 \*Accepted.

**BURTON-ON-TRENT.**—For residence in Hamilton-road, for Mr. James Gilbert. Mr. Thomas Jenkins, architect, 35, High-street, Burton-on-Trent. Quantities by the architect:—  
 G. Kennard ... £2650 13 | A. Geary ... £2604  
 H. Hodges ... 610 0 | R. Kershaw (accepted) ... 597  
 H. Edwards ... 605 0  
**CARDIFF.**—For erecting new church of St. Martin's, Roath, Cardiff. Mr. F. R. Kempson, architect, Cardiff. Quantities by Mr. Chas. Taylor, Cardiff:—  
 Thomas and Co. ... £14,879 0 | H. Gibbon ... £12,103 0  
 Luscombe ... 14,500 0 | Morgan and Co. ... 11,800 0  
 Shepton and Son ... 13,427 10 | Latty and Co. ... 10,771 0  
 H. Smith ... 13,421 0 | Beames and Nephew ... 9,250 0  
 Stephens, Bastow, and Co., Lim. ... 13,397 0

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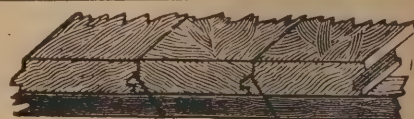
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17 1/2 x 3 x 2	8 9	7 11	11 8
17 1/2 x 3 x 1 1/2	6 9	6 0	9 1



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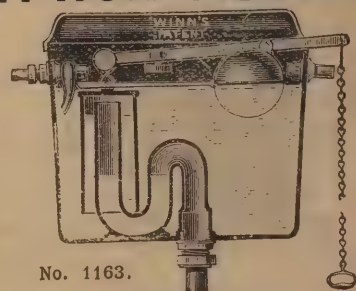
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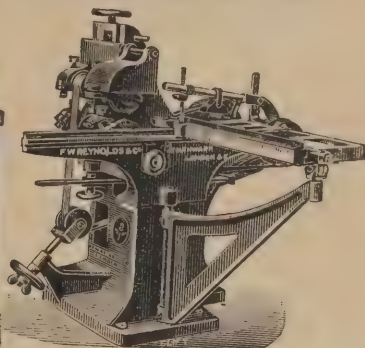
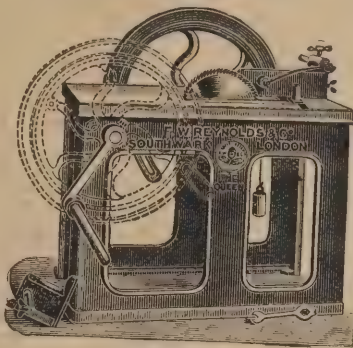
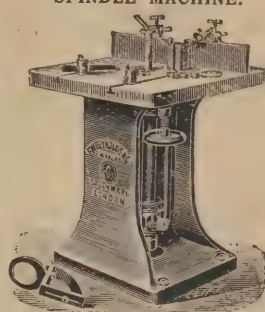
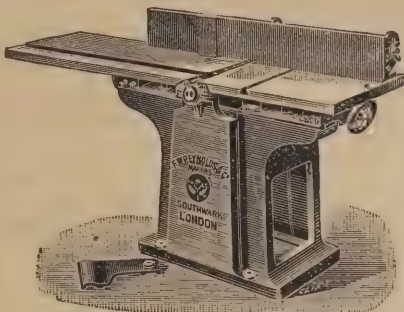
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**CHAPEL-EN-LE-FRITH.**—For the erection of an isolation hospital, Chingley, for the High Peak Hospital Committee. Mr. W. R. Bryden, architect, 1, George-street, Buxton. Quantities by Mr. Fred Cartwright, Sheffield:—  
Tomlinson and Son... £12,330 0 0  
Ives and Co. ... 11,880 19 0  
Booth and Son ... 11,050 0 0  
Haughton and Son ... 10,197 0 0  
Hughes & Stirling... 9,940 0 0  
M. Simpson... £9,008 0 0  
Scattergood and Warrington...  
New Mills\* ... 8,773 7 8  
James Salt ... 8,650 0 0  
\*Accepted.

**CREWE.**—For new Liberal Club premises, Gatefield-street. Messrs. Wm. Sugden and Son, F.R.I.B.A., architects, Leek. Quantities by Messrs. Mosley and Anderson, Northampton. Fair wages clauses in contract:—  
Heath ... £2,392  
Williams ... 2,298  
Cotterill ... 2,103  
Henson ... 2,072  
Stringer ... £2,048  
Micklewright ... 2,044  
T. Smith ... 1,974  
Matthews, Nantwich\* ... 1,901  
\*Accepted.

**FROME.**—For the erection of a malting for Messrs. E. Baily and Son, Limited. Mr. W. G. Brown, architect, Park-road, Frome. Quantities supplied by architect:—  
Long and Son ... £5,143  
Wort and Way ... 4,935  
Lowe and Sons ... £4,610  
C. Barnes, Frome\* ... 4,487  
\*Accepted.

**LONDON.**—For the erection of two bath turrets at the Infirmary, Cale-street, Chelsea, for the Chelsea Guardians. Messrs. Lansdell and Harrison, architects, 38, Bow-lane, Cheapside, E.C. Quantities by Messrs. Northcroft, Son and Neighbour:—  
F. T. Chinchin ... £6,500  
G. Wade ... 6,300  
Gregory and Co. ... 5,807  
Godfrey and Son ... 5,800  
F. and H. F. Higgs ... 5,765  
Wall and Co. ... £5,720  
General Builders, Lim. ... 5,690  
Spencer, Santo and Co. ... 5,676  
W. Norton, Chelsea\* ... 5,270  
\*Accepted.

**LONDON.**—Removing girls' offices at Sidney-road School from inside building, also urinals on west side; erecting new offices for girls in playground; rebuilding boys' offices, and refitting infants' offices; enlarging urinal; re-arranging the lavatories all departments, and providing new drainage scheme, except to schoolkeeper's house; for the London School Board:—  
McGormick and Son ... £3,381  
F. Britton ... 2,822  
Johnson and Co. ... 2,610  
Ashby and Horner ... 2,556  
Godson and Sons ... £2,487  
E. Triggs ... 2,440  
Martin, Wells and Co. ... 2,423  
Killingback and Co.\* ... 2,398  
\*Accepted.

**LONDON.**—For augmenting the steam producing plant at the South-Eastern Hospital, for the Metropolitan Asylums Board. Messrs. Burstall and Monkhouse, engineers:—  
Blackwell & Co. (Informal) ... £1,000  
J. Thompson ... 3,200  
Defries & Sons, Lim. ... 2,732  
Korting Bros. ... 2,154  
J. and F. May ... 2,150  
Tinkers, Lim. ... 2,025  
Vaughan Iron Works, Company, Lim. ... £1,300  
Easton, Anderson, and Goodlen, Lim. ... £1,960  
Danks & Co., Lim. ... 1,915  
Taylor & Sons ... 1,915  
Dawson & Co., Lim. ... 1,910  
Stalybridge\* ... [Engineer's revised estimate, £1,300.]  
\*Accepted.

**LONDON.**—Adapting front building of Homerton College for a residential deaf school for thirty children, and adapting back premises for a manual training centre for twenty boys, and for a temporary school to accommodate 420 children:—

	A	B	C	Total
W. Shurmer	£4,680	£3,780	£280	£7,740
McGormick and Sons	4,799	2,536	280	7,615
Grover and Son	4,532	2,779	280	7,611
Dove Bros.	4,634	2,521	280	7,435
Chessum and Sons	4,656	2,431	280	7,367
Snewin Bros. & Co.	4,120	2,048	280	7,048
Lawrance and Sons	4,165	2,490	280	6,935
T. L. Green*	4,147	2,175	280	6,602

\*Accepted.

A. For work to front building, and including the water-closets and other new outbuildings at back of same, also the drainage connected therewith.

B. For work to back building, including the new water-closets, &c., at back of same, also the new drainage connected therewith, also the covered playgrounds.

C. For work to boundary walls, £250, and gardener's work, £30 (provisional sums).

**LONDON.**—For radiators, steam heaters, piping, &c., to the South-Eastern Hospital, for the Metropolitan Asylums Board. Messrs. Burstall and Monkhouse, engineers:—  
Defries & Sons, Limited ... £6,700 0 0  
King, Ltd. ... 5,581 17 6  
Fairbrother and Co. ... 5,429 0 0  
Edwards and Barnes ... 4,987 10 0  
Berry and Sons ... 4,854 0 0  
Korting Bros. ... 4,746 0 0  
Dargue, Griffiths, and Co., Ltd. ... 4,209 0 0  
J. and F. May ... £3,898 0 0  
Kite and Co. ... 3,800 0 0  
Moorgate Engineering Company ... 3,641 0 0  
Cameron & Co. ... 3,410 0 0  
Dawson and Co. Ltd. ... 3,400 0 0  
J. C. and J. S. Ellis, Limited, Sheffield\* ... 3,273 0 0  
\*Accepted.

[Engineers' revised estimate, £4,350.]

**LONDON.**—For new premises and alterations, for Messrs. Green and Son. Mr. G. Gordon Stanham, architect, 100a, Queen Victoria-street, E.C.:—  
T. Nye ... £2,500  
Chamberlain Bros. ... 2,280  
Speechley and Smith ... 2,248  
John Appleby, Corn-wall-road, S.E. ... £2,155  
\*Accepted.

**OLD WOKING.**—For the erection of two pairs of cottages for the trustees of Robert Daws (deceased). Robert Clapp and John B. Drower, architects, Woking and Fleet (Hants):—  
Balaam Bros. ... £1,825  
Martin ... 1,488  
Hooker ... 1,463  
Gale ... 1,450  
Godson ... £1,365  
Harris and Son ... 1,321  
Whitburn, Old Woking\* ... 1,275  
\*Accepted.

**PLYMOUTH.**—For alterations to the "Fountain Inn," Frankfort-street, for J. Leathlean, Esq. Mr. Edgar M. Leest, architect, Public Hall-chambers, Devonport:—  
Tozer and Son ... £444 13  
Goad J., and Co. ... 397 0  
Jillard and Stevenson ... £410  
Blake, W. (accepted) ... 377  
[All of Plymouth.]

**SHEFFIELD.**—For the erection of stores, &c. Pond-street, Sheffield, for the Directors of Messrs. Thomas Rawson and Co., Limited. Messrs. Hall and Fenton, architects, 14, St. James-row, Sheffield. Quantities by the architects:—  
James Fidler ... £2,590  
Masten and Son ... 2,523  
A. Turner ... 2,521  
John Morton ... 2,478  
Powell and Son ... 2,468  
J. and H. Wheen ... 2,460  
A. Bradbury ... £2,343  
T. Roper ... 2,251  
T. Margerrison ... 2,250  
J. W. Dickens ... 2,240  
M. Hancock, Horam-road\* ... 2,146  
\*Accepted.

**THAMES DITTON.**—For new detached residence, for Mr. Richmond Keele. Messrs. Pennington and Son, architects, Hastings House, Norfolk-street, Strand, W.C. Quantities by Mr. H. Williams Mellor, 17, Buckingham-street, Adelphi, W.C.:—  
Dove Bros. ... £2,525  
Godson and Son ... 2,415  
John Appleby ... 2,275  
WALTHAM CROSS.—For the erection of residence and cycle show rooms, for Messrs. G. Fell Bros., in the High-road, Waltham Cross:—  
J. Porter ... £1,307  
W. Critcher ... 1,250  
A. F. Almond ... £1,125  
Lawrence and Son\* ... 1,099  
\*Accepted.

**WOKING.**—Accepted for the erection of three houses on the Monument Hill Estate, Maybury, for Mr. George Chandler. Robert Clapp and John B. Drower, architects, Woking and Fleet (Hants):—  
James Harris and Son, Woking ... £1,258

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## SEWAGE DISPOSAL.\*

By D. BALFOUR, M.Inst.C.E., F.G.S.

(Continued from page cx.)

THE separate system of sewers on the intermittent system of disposal affords the minimum size of sewers and quantity of land and volume of water in obtaining a simple and economical scheme. In America the Massachusetts State Board of Health had chiefly used intermittent land filtration and partly chemical processes. Owing to various public authorities letting sewage disposal works to a tenant, whose object is profit and not purification, both deterioration and disgrace are invariably the results of such schemes. Land, fully satisfactory in quantity, quality, levels, cost, and relative situation, being sometimes difficult to obtain in certain localities, considerable help can now be obtained by the conjoined use of certain simple chemicals in greater or less proportions for the precipitation of the solid or sedimentary matters before application to land. The chief chemical used for this purpose at the present time is aluminiferous (a crude product of alum), which is simple, cheap, and entirely soluble, causing, therefore, no extra sludge. During the last ten to twenty years the list of patent chemicals for sewage treatment extended to about seventy or eighty in number, and only comparatively few survive in practice.

The Local Government Board's regulation provides for 1 acre of land per 1500 to 2000 of population where combined chemical and land filtration is adopted, and 1 acre to 500 to 1000 population where the principle adopted is broad irrigation with chemicals.

## Bacteriological Methods.

The bacteriological treatment of sewage has been for the last few years receiving new and special experimental investigation and scientific discussion. Bacteria tanks for fully facilitating the practical development and action of these micro-organisms have, within the past years, been constructed and are in operation, comprising those for special action of Aerobic micro-organisms by anti-septic or oxidising agency, for which light and air are both essential, and also those tanks for the action of Anaerobic micro-organisms by septic or putrefactive agency, from which light and air are both excluded, with either intermittent or continuous action.

The special objects of the bacteria tanks are the liquefaction of the solids or sludge in crude sewage, without treatment by chemicals or land, and the ample and ultimate purification of the resultant liquid, so as to meet satisfactory standards of purification.

In order to practically develop the important agency in sewage purification, which, it has been discovered, is possessed by the minute but "mighty atom" as already stated, various bacteria tanks are now exhibited, all of which I have specially inspected on several occasions.

Varied degrees respectively of purification and of constructive and working cost are claimed, as well as no chemicals needed, and no sludge produced, and I find the tanks generally are based on an average daily flow of one million gallons of sewage per acre of filter, or about 200 gallons per square yard.

The Dibden System, as designed by Messrs. Dibden and Thudicum, formerly chief chemists to the London County Council, I have seen first at the London Sewage Outfall Works, on the north bank of the Thames at Barking, and afterwards at Sutton (Surrey), Hampton (Middlesex), and at Leeds City Outfall Works.

This system comprises from five to ten sets of two tanks, both of which are open, on Aerobic principles, the first tank being 3ft. to 4ft. deep of rough, or  $\frac{1}{2}$  in. clinker, coke breeze, or ballast, and the second tank of fine, or  $\frac{1}{4}$  in. like material, worked by intermittent flow during cycles of six to eight hours. The final effluent at Sutton is further used on land growing mint crops. The analyses of the Leeds experiments have been verified by Mr. Fairley,

City Analyst, and the West Riding Rivers Board, and carp appear to thrive in the effluent flow.

The Septic Tank System, as designed and patented by Mr. D. Cameron, City surveyor, Exeter, I have seen there, as also the recent full installation at Barrhead, near Glasgow. The sewage is received on the continuous flow principle, first into the covered or septic chamber, where light and air are excluded for liquefaction by Anaerobic agency, but generating a quantity of inflammable marsh gas. The effluent then overflows into an open tank 4ft. to 5ft. deep, of fine clinker, or coke, which is Aerobic and intermittent in action, the discharge being intended to be regulated by patented automatic gear.

The effluent has been analysed and reported on by Drs. Dupre, Rideal, and Mr. Dibden.

In the Dibden and Cameron systems the first tank breaks down and liquefies the solid matter or sludge, while the second tank effects the final purification of the sewage.

The Aerated Bacterial Self-acting Filter is a simple tank, which was patented by Colonel Ducat, R.E., for many years an Engineering Inspector of the Local Government Board, and which I have on many occasions examined at Hendon, in the North of London. This tank is altogether on the self-acting, continuous flow principle, without any valves, and has special aeration and thermal arrangements. The tank is filled with  $\frac{1}{2}$  in. to  $\frac{3}{4}$  in. clinker, 8ft. in depth. The analyses have been conducted by Dr. Houston and Dr. Klein, both eminent chemists and bacteriologists. Several gold fish appear to thrive in the daily effluent flow.

Instead of solid walls used in other systems, the Ducat tank has its sides constructed of open drain pipes, built in concrete, with alternate layers of through-going pipes every 18 in. in depth, by means of which the air is supplied both laterally and vertically to obtain continuous action without rest by intermittent use. In winter heating arrangements are considered important, and of a simple and cheap nature. It appears to me most desirable for sewage to be purified on a system of continuous flow, thereby dispensing with valves and any great extent of supervision.

Whittaker and Bryant's Thermal Aerobic Sewage Filter I have seen in operation both at Accrington and also at Leeds.

The crude sewage is first received into an open tank, and thence raised by a pulsometer steam pump, which also heats the sewage, and at Leeds it is further heated from a steam pipe. The heated sewage is, by means of an automatic revolving sprinkler, distributed over an open mass of 9ft. depth of coarse coke or clinker, freely exposed to the air at the sides and on continuous flow principle.

The Bennett Anaerobic and Aerobic Tank, only lately designed by Mr. Bennett, borough engineer, Southampton, comprises, first, a 3 $\frac{1}{2}$ ft. deep tank filled with clinker, covered over to exclude light and air. The second tank is open and 3ft. deep, similarly fitted with clinker. Small fall is claimed as necessary with continuous flow for the two tanks without a number of special sets of tanks in a series.

Some other designs of bacterial tanks have been, so far introduced, but as yet with lesser public mention.

As regards standard of purification for sewage, it appears left as yet discretionary, but as a working standard it is usually taken as 0.1 grain per gallon of albuminoid ammonia and 1 grain per gallon of oxygen absorbed at 80deg. F. in two hours. Both the West Riding of Yorkshire and Mersey and Irwell Rivers Boards have adopted this basis.

In conclusion, I think it would be invidious and unfair at the present time to compare the various systems of bacterial tanks practically and financially, from the fact that a Royal Commission has been appointed on sewage disposal, and is now pursuing special investigation of the subject, and I have been professionally desired to give evidence before the Commission.

The Commission have had over twenty-five expert witnesses before them, including chemists, bacteriologists, biologists, medical

officers of health, and engineers, some of these witnesses having occupied the time of the Commission for two days each. Members of the Commission have visited the works of sewage disposal at the following places: Exeter, Yeovil, Manchester, Rochdale, Chorley, Sutton, Doncaster, Dewsbury, Bradford, and Leeds. They have also been engaged in determining a number of important questions relating to the desirability or not of laying down chemical and bacteriological standards which should be obtained by effluents, whether in the case of domestic sewage only, or for such sewage combined with trade refuse. For this purpose they have employed experts of their own, and it is understood that the staff of chemists and bacteriologists has just been increased, so that the effluent from works of different character can be systematically studied almost hourly, by day and by night, under varying conditions of temperature and rainfall. No statement can as yet be made as to the term over which those experiments must extend, but it is quite clear that they are at present only in an initial stage and that, in so far as bacteriological results are concerned, the Commission are dealing with a subject as to which little expert evidence is available, and that the matter will have to be examined very deliberately and exhaustively before useful inferences can be drawn. These experiments are being carried out under the supervision of a committee of the Royal Commission consisting of Sir Richard Thorne, F.R.S., Professor Michael Foster, F.R.S., and Professor Ramsay, F.R.S.

I would only add, now that the Rivers Pollution Prevention Acts (applicable to the three kingdoms) have come into practical force, it is certainly most particularly opportune and advantageous to public authorities to possess (as I hope will soon be fully realised) other sufficient and less costly means than those hitherto officially adopted for sewage purification, and combining the great cardinal points of the day—simplicity, efficiency, and economy.

**The National Footpaths Preservation Society** held its annual meeting last week. It was announced in the report that the parish council in the locality had consented to exercise rights of ownership in the public interest to the thirty acres of plantation land on Rockbeare Hill, Devonshire, recently presented to the Society. Amalgamation with the Commons Preservation Society was agreed on.

**A New Road at Coventry.**—The Coventry Town Council last week adopted a report of their committee agreeing to pay £700 towards the cost of a new road which is to give access to the railway station from the east of the city. Mr. W. J. Iliffe is developing part of Lord Chylesmore's Park estate, and the Council propose to spend the money in widening one of the roads he is making, and carrying it some distance further than he intended.

**Tramway Scheme at Dewsbury.**—An electric tramway scheme to connect Dewsbury, Heckmondwike, and Cleckheaton, and possibly Ravensthorpe and Mirfield, is being considered by the local authorities of the three first-named towns. The line will pass through the Spen Valley, and will, therefore, traverse part of Liversedge, whose support it is hoped to obtain. The project will be in opposition to that of the British Electric Traction Company, of which the Clerk to the Liversedge Council is one of the local agents.

**Proposed New Workhouse for Wolverhampton.**—An inquiry was held at Wolverhampton last week by one of the inspectors of the Local Government Board into an application made by the Board of Guardians to borrow £140,000 to erect a new workhouse at Wednesfield. The maximum which the Guardians would be entitled to borrow was £195,027. They did not anticipate that the new workhouse would cost £140,000, but a margin for contingencies was required. Since the original estimate had been sent in they had reconsidered their scheme, and decided to add a chapel, which would bring the cost of the buildings up to £119,668. There was no opposition.

\* A Paper read before the Sanitary Inspectors' Association on April 8th.



## THE DISPUTE IN THE BUILDING TRADE.

THE dispute still drags along at a weary pace, and very little has been accomplished since the resolution of the Yorkshire masters to lock out 25 per cent. of the union men in employment. General approval has been expressed all over the country by the masters at this decision. In some quarters the men decided that if the Federated Masters carried out the lock-out resolution they would retaliate by withdrawing the remaining 75 per cent. This was done in Leeds by the bricklayers, who, however, eventually gave in and returned to work. The views of the employers have been summarised as follows, and where the men have been locked out it may be taken that a condition of re-engagement will be the acceptance of these rules:—

1. No attempt on the part of the operatives in any department of the building trade shall be made to compel foremen, or working foremen, to join the men's union.

2. No limitation shall be placed on the number of apprentices employed by any firm, and all apprentices and boys learning a trade shall be legally bound within three months of commencing to work, and to remain until the age of twenty-one years.

3. Every workman shall be free to belong to a trade union or not, as he may think fit.

Every employer shall be free to employ any man, whether he belong to a trade union or not.

Every workman who elects to work for a federated firm shall work peaceably and harmoniously with all fellow employees, whether he or they belong to a trade union or not.

The Federation do not advise their members to object to union workmen or give preference to non-union workmen.

4. The employer in all cases shall have the right to decide who shall do certain work.

5. No restriction shall be placed by the workmen on any employer as to how or where he shall purchase his material, or as to whether it shall be worked or partly worked when it comes on to a job.

6. With a view to avoid disputes in future, deputations of workmen will be received by their employers, by appointment, for mutual discussion of questions, in the settlement of which both parties are directly concerned. In case of disagreement the local associations of employers will negotiate with the local officials of the trade unions. Failing settlement by the local associations and trade union, the matter shall be referred to the central authority of the masters and workmen. That there be no stoppage of work during negotiations.

7. No walking delegate of the men shall be allowed to come on to any job, or to visit any workshops during working hours.

8. No overtime shall be reckoned until a full working week shall have been worked as per the agreed working rules between masters and workmen in each district.

9. A workman shall not take work from any customer of his employer, or work for any other person whilst in such employment.

10. Employers shall be free to employ workmen at rates of wages mutually satisfactory. They do not object to unions or any other body of workmen in their collective capacity arranging among themselves rates of wages at which they will accept work, but while admitting this position they decline to enforce a rule of any society, or an agreement between any society and its members.

The unions will not interfere in any way with the wages of workmen outside their own unions.

11. Both masters and workmen shall give six months' notice, to expire on March 1st and October 1, of any alterations of rules or rates of wages.

The National Amalgamated Society of Operative House and Ship Painters and Decorators have sent a very strongly worded letter in answer to the Master Builders' Association's request for an assurance that the members have no sympathy with, and will not support in any way, the National Association of Operative Plasterers in the present dispute. They say they entirely repudiate the right of the master builders to dictate to the members to whom they shall extend their sympathy and support, and add:—"We are given to understand that one of the main causes of the dispute in the plastering trade is that the employers call upon the men to give an assurance that certain objectionable practices shall cease. Whatever objectionable practices the Operative Plasterers may have carried out in the past, surely none could be more objectionable or humiliating than the latest move of the Master Builders' Association. We regret that your association have not dealt with this matter with that prudence and forethought which has characterised them in the past. We do not admit the legal or moral right of the master builders to demand such an assurance as is asked for. We therefore respectfully decline to place the liberties we enjoy at the

mercy of the Master Builders' Association, and refuse to comply with their request."

A meeting of the members of the Midland Federation of Master Builders was held at Derby on the 9th inst. to consider the crisis. Although there was considerable discussion in regard to the latest developments nothing definite was decided upon.

The Lancashire and Cheshire Federation of Employers met at Manchester on the 11th inst. and expressed approval of the action of the Yorkshire employers. In view of the near approach of a special meeting of the National Federation at Birmingham on the 18th inst. it was considered advisable not to declare a lock-out; but should the latter body show any hesitancy in the matter it appears likely from the tone of the gathering in Manchester that the northern counties will follow the independent example already set by Yorkshire.

Considerable excitement was evinced at Hull on the 11th inst. on the arrival of a batch of non-Union bricklayers from Ireland, they having been offered work by the local officials of the Master Builders' Association. Several of the men on hearing of the dispute, of which they were unaware, asked for their fare back.

The weekly report of the general secretary of the Operative Plasterers' Society (Mr. Dellar) was issued yesterday. It states that on Saturday, the 6th inst., there were 1691 locked-out men on the books, as compared with 1620 on April 29th. This increase is stated to be owing to local disputes at Southport and Swansea. In the former town there are forty-six men out, and in Swansea fifty-four. Apart from these disputes, there would have been 1591 on the books, or a decrease of twenty-nine as compared with the previous week.

A meeting of members of the Leeds branches of the Amalgamated Society of Carpenters and Joiners was held at the Grand Assembly Rooms, New Briggate, last Thursday, to take into consideration the advisability of laying a levy in aid of the 25 per cent. of members locked out. The attendance numbered fully 1100 out of a total membership of 1286. The proceedings were characterised by enthusiasm, and it was unanimously resolved that the levy be 4s. per member per week. Many of the undischarged bricklayers in the city have returned to work by order of the Executive Council. About twenty-five of the locked-out men, chiefly belonging to the London Order, left for York yesterday. Five plasterers also took their departure for various places in the country, and six more are expected to go away on Monday.

**The Surveyors' Institute.**—The annual dinner of the Surveyors' Institute was held at the Holborn Restaurant last Wednesday, when Mr. Robert Vigers (president) occupied the chair. After the usual loyal toasts had been proposed the chairman gave the toast of "The Houses of Lords and Commons," to which Lord Templeton and the Speaker replied; the latter observed, in a humorous speech, that the Commons deserved as much favour at their hands as the Lords. He could assure them from personal knowledge that a large amount of the time of the Commons was spent in looking after the interests of the surveyors. Of the scheme of clearance for the new land for the Government offices he believed the real secret was the improvement of the position of the Surveyors' Institute in Great George Street. (Laughter.) Some of his pleasantest recollections were connected with the Institute, as within its walls he had earned his last guinea for making a speech.—The toast of the evening, "The Surveyors' Institute," was proposed by Mr. Jesse Collings, M.P., who said that the Institute now numbered 3,000 members, and occupied a position second to none among London and Provincial Societies. He trusted that before the end of another year they would be able to occupy their new premises in Great George Street, which had been erected at a cost of nearly £40,000.—The President replied, and the toasts of "Kindred Societies" and "The Visitors" were afterwards proposed.

## Masters and Men.

**Helensburgh Joiners** have gained  $\frac{1}{2}$ d. per hour advance in their wages.

**Edinburgh Plumbers** are agitating for an advance of  $\frac{1}{2}$ d. per hour on their present rate, which is 8 $\frac{1}{2}$ d.

**Coalville Joiners** are still on strike for an advance of  $\frac{1}{2}$ d. per hour. One or two of the smaller employers have conceded their demand, but the principal firms are displaying a firm tone.

**Ludlow Carpenters' Dispute Settled.**—The members of the Amalgamated Society of Carpenters and Joiners, who struck for an advance of wages, have come to an arrangement by which they will receive  $\frac{1}{2}$ d. per hour increase, and have returned to work.

**Elland Labourers**, to the number of about fifty, employed at the engineering works of Messrs Dempster and Co., of Rosemount Works, Elland, struck work last week for an increase of wages to the extent of 2s. a week. Their present wage is, they state, 18s. a week.

**The Dispute at Chester** has been settled, the men having agreed to accept the following concessions: carpenters and joiners  $\frac{1}{2}$ d. per hour advance from May 1st, winter term to commence November 1st and to end February 29th, the hours being seven to five. Bricklayers accept  $\frac{1}{2}$ d. per hour advance from June 1st.

**Carpenters, Joiners and Bricklayers at Chester.**—A dispute at Chester has just been amicably settled. The carpenters and joiners demanded an advance of 1d. per hour, and served notices, expiring on May 1st. The masters decided to concede  $\frac{1}{2}$ d. per hour, and this the men have accepted. The bricklayers have accepted a similar offer.

**Masons' Wages at Cardiff.**—At a meeting of the Cardiff Town Council it was proposed that the wages of the masons in the employ of the Corporation be increased one halfpenny per hour from May 1st, and that they be permitted one hour for dinner all the year round, and permitted to cease work at noon on Saturdays. A letter was read from the Master Builders' Association stating that the condition of the trade would not warrant an increase of wages. Upon a division the resolution was carried by a majority of seventeen votes to five.

**A Meeting of Aberdeen Monumental Masons** was held last week. The meeting had under consideration the question of the advisability of wages being paid weekly instead of fortnightly, as at present. The reply from the Granite Association refusing to concede the demand for weekly payments without the decision of an arbiter was submitted, and it was unanimously agreed to obtain the opinion of the arbiter on this point. In accordance with notice previously given, the meeting had also under consideration the question of an increase of wages. The operatives were unanimously of opinion that the present rate of wages should be increased, but it was decided that in the meantime the matter should be deferred. The present rate of pay for monumental masons is 7d. per hour.

**Sheffield Street Improvements.**—At a meeting of the Sheffield City Council, the offer of the Great Central Railway Co. to give up 1,388 square yards of land in Broad Oaks, Attercliffe, for road widening purposes, was accepted, the company to be relieved of the cost of the making, paving, and dedication of the 40ft. street adjoining. The Council have under consideration the purchasing of land for street widening in Angel Street, King Street, Attercliffe Road, Upwell Street, Abbeydale Road, and Eccleshall Road.



## Engineering Notes.

**The New Schools, Mold,** are being warmed and ventilated by means of Shorlands' patent Manchester Grates, supplied by Messrs. E. H. Shorland and Brother, of Manchester.

**The Hambledon Schools, Henley-on-Thames,** are being ventilated by means of Shorland's patent Exhaust Roof Ventilators and Special Inlet Panels, supplied by Messrs. E. H. Shorland and Brother, of Manchester.

**Proposed Tunnel between Great Britain and Ireland.**—Advocates of the scheme for connecting Great Britain and Ireland by means of a channel tunnel have resolved to form themselves into a committee, with the view of pressing the subject upon the attention of the Government.

**City of London Electric Lighting.**—A report on the question of the electric lighting contracts with the City of London Electric Lighting Co., which, in counsel's opinion, are null and void, was submitted to last Thursday's meeting of the Court of Common Council by the Streets Committee. It was resolved to authorise the committee to have a conference with the directors of the company, and to report the result.

**Overhead Electric Traction in London.**—A report was submitted by the Highways Committee of the London County Council at a meeting of that body last week, on the application of the London United Tramways Co. to be allowed to use the overhead system of electric traction on that portion of their lines which comes within the county at Hammersmith. Consideration of the matter was adjourned until the next meeting of the Council.

**Calcutta New Catholic Schools.**—Efficient and regular ventilation in India is almost one of the necessities of existence, and cannot be ignored or left to chance, as is so often the case in England. The scheme of ventilation of the new Catholic Schools was a matter for careful consideration, and the decision has been in favour of John King Limited, Ventilating Engineers, Liverpool, who have received the order to supply their ventilating appliances.

**Proposed Harbour at Kirkcaldy.**—A meeting of the Kirkcaldy Town Council was held on the 8th inst., at which it was proposed that Mr. Conacher, the manager of the North British Railway, be approached with the proposal that the town, as their half of the expense of the new harbour, contribute £100,000, or a rate equivalent to that sum, and hand over the present harbour, valued at £150,000, or a sum to be fixed by a valuator, the town having an equal share in the management with the Railway Company. It was moved that in the event of the Railway Company being willing to make a suitable harbour at Kirkcaldy at their own expense, the town should sell to them the present harbour at a sum fixed by arbitration.

**Electricity at Calcutta.**—The directors of the Calcutta Electric Supply Corporation, Limited, in their report, state that the contractors have made good progress with the erection and equipment of the generating station and with the laying of mains. Possession of the site was not obtained until March 10, 1898, and the work of erection was not actually started until May 19. The buildings were, however, practically finished at the end of last year, and are reported to be a good example of a central station, comparing favourably with any station in this country. Owing to the difficulty of settling the question of the overhead wires with the Government, labour troubles and delay in delivery of some of the materials for the mains, the supply of electrical energy to the public was not commenced as early as was originally contemplated, but the works were opened and current was started recently.

## Builders' Notes.

**A Building Dispute.**—At the Shrewsbury County Court, on the 9th inst., his Honour Judge Harris Lee heard a case in which the plaintiff was Charlotte Jane Tommy, trading as Tommy Brothers, builders, of Wem, and the defendant James Wallace, of Overmoor, near Astley. The claim was for £70, balance said to be due under a contract for the erection of a new house for the defendant at Overmoor, and there was a set-off for £40 for alleged defective work, and £105 for delay in the completion of the contract. The defendant had paid £36 into Court. The case was sent for hearing from the High Court. Plaintiff claimed upon the architect's certificate, and denied the allegations as to defective work and needless delay. His Honour gave judgment for the sum paid into Court.

**A Contractor and his Buildings.**—At the Clydebank Police Court, on May 8th, James Goldie, who has the contract for the Clydebank section of the Glasgow Corporation Sewage Scheme, was charged with proceeding with the erection of a brick building facing Dumbarton Road without having the necessary warrant from the Dean of Guild Court. Accused stated that he had been authorised by the Glasgow Corporation to make the building, and as he was but a servant he thought that if there had been any formalities to go through they should have arranged them. He was quite prepared to act up to the rules of the burgh, and to do anything that was necessary on his part to do. On his promising to have a petition and plans of the building lodged that night the case was adjourned.

**Building without Municipal Sanction.**—At the Aberdeen Police Court, Bailie Taylor on the Bench, the case of David Simpson, painter, of 22, South Mount Street, Aberdeen, which had been adjourned several times, came up again. The charge was one of having contravened the Aberdeen Corporation Acts, by building two houses in Ashgrove Road, Aberdeen, which projected several feet further into the street than was shown on the sanctioned plan. Mr. R. C. Jackson, solicitor, appeared on behalf of accused, who had previously pleaded guilty. Mr. Jackson wished to withdraw this plea and substitute one of not guilty, on the ground that facts and circumstances had since come to accused's knowledge which had induced him to believe that he was really not guilty of the charge. The Town Council, he contended, in making the line of the street had absorbed a considerable portion of his land. Mr. Lamb, Procurator-Fiscal, objected to the plea being withdrawn, and the objection was upheld by Bailie Taylor. A fine of 30s., and 35s. costs, was imposed, the alternative being five days' imprisonment.

**Extensions in Aberdeen** are progressing rapidly, and the building trade generally is busy. Two new churches are being built in the Stocket district, and three new public schools are being erected in various parts of the city. Several buildings in course of construction are almost finished, among which may be mentioned the following: Large warehouse in Bridge Street, Messrs. Harper and Sutherland, architects, Aberdeen; spirit merchant's warehouse, Regent Quay, and reconstruction of Queen's Restaurant, Union Street, Mr. A. M. Mackenzie, A.R.S.A., architect, Aberdeen; ice factory, Poyernook Road, granite works at Ashgrove Road and Balmoral Road, and extension of City Hospital, Mr. John Rust, architect. Messrs. Pringle and Slessor, masons, have commenced the reconstruction of a large warehouse at Bridge Place and Windmill Brae, which was destroyed by fire on April 22. Mr. John Rust, Aberdeen, is architect for the work, which will cost about £9,000. Contracts have been entered into for construction of a district hospital at Stocket, just beyond the city boundary; Mr. J. D. Watson, county engineer, is the architect

and the estimated total cost is £3,619 7s. 9d. A new cemetery is intended to be laid out at Cragieshaw, from designs by Messrs. Walker and Duncan, C.E., Aberdeen; and it is also proposed to enlarge Trinity Cemetery. Mr. W. Kelly, architect, reports that the cost of reconstructing and enlarging the East Poorhouse would be £30,000, while the expense of building a new poorhouse for all the indoor ordinary paupers in the city would be £54,900, including cost of ground.

**The Purchase of Spitalfields Market Approved.**—A committee of the House of Commons, presided over by Mr. A. H. Brown, have had under consideration the General Powers Bill of the London County Council, one of the objects of which is to enable the Council to purchase by agreement the freehold of the land forming the site of Spitalfields Market and some adjoining property. Mr. Worsley-Taylor, Q.C., who appeared for the County Council, stated that complaints had for a long time been made respecting the obstruction of general traffic caused by the market, and also with regard to the character of the buildings of which it was partly composed. The Corporation of London had petitioned against the Bill, stating that they were the market authority in the City and that, as such, their jurisdiction extended over so much of the metropolis as was within a radius of seven miles from the City. They denied that the acquisition of the freehold of Spitalfields Market by the County Council would be effectual in improving the neighbourhood, and said that the real object of the proposal was to confer on that body such a *status* in relation to one of the London markets as might enable it to intervene in matters relating to markets generally, including those within the area of the City. A conference took place between representatives of the County Council and the City, and subsequently Mr. Littler, Q.C., stated that the parties had come to terms, but he wished it to be distinctly understood that the City Corporation did not in the slightest degree recognise that the purchase of the property gave the County Council any authority or *status* as a market authority. Some formal evidence having been taken, the committee decided that the portion of the preamble relating to the purchase of Spitalfields Market was proved.

**Infringement of Building Bye-laws at Prestwich.**—At the Prestwich County Court, on May 11, before Mr. Yates and other magistrates, William Wilkinson, of Rainsough, Prestwich, was summoned at the instance of the Prestwich Urban District Council for erecting a new building without having obtained the consent of the Council. Mr. Orford, who prosecuted, said the building had been erected over a sewer. The defendant had submitted a plan of the structure, but the Council refused to sanction it. He proceeded with the work, although twice warned by the surveyor not to do so. The matter was brought before the Buildings Committee of the Council and he (Mr. Orford) was instructed to prosecute. Before commencing proceedings, he wrote informing the defendant that if he persisted in going on with the work he did so at his own risk. The work was still being proceeded with. Evidence was given by the surveyor to the Council, who admitted in cross-examination by Mr. Jordan (who defended) that the sewer was 10ft. or 11ft. below the cellar of the house. Mr. Jordan contended that the defendant had been summoned more because the dignity of the Council had been offended than for any injury he had done. He submitted that other people had built houses over the same sewer and had not been interfered with. Mr. Orford said the Council felt that defendant had coolly disregarded their views, and that it would be futile to require plans or enforce the provisions of the Public Health Act on others if his case was to be passed over. The defendant was fined 40s. and costs, with a continuing penalty of 20s. per day until he either takes the house down or comes to an arrangement with the Council.



# Surveying and Sanitary Notes.

**Sanitary Condition of Florence.**—A recent Foreign Office report gives a very satisfactory account of the sanitary state of affairs in this beautiful city. The drainage is provided for by many large sewers, leading to three mains, which discharge into the river. The cleansing of the streets is leased out to private firms, and refuse depôts are situated away from the city.

**Widening of Thames Street.**—A meeting of the Court of Common Council was held last Thursday, at which the Finance and Improvements Committee submitted for approval a plan for making Lower Thames Street 60ft. wide between Botolph Lane and Fish Street Hill, at an estimated cost of £199,000, toward which the London County Council has agreed to contribute £50,000. The report was carried.

**Radcliffe Sewerage Scheme.**—A meeting of the District Council was held last week, at which a report was read from the Local Government Board regarding the application of the Council for sanction to borrow £3,000 for works of sewerage. The Board said they understood that it was not proposed to take into the sewers the drainage from the Grammar School and houses in Ringley Road. The Inspector reported that the sewage of those premises was at present discharged into ponds and tanks, which communicated by means of ditches and field drains with the watercourse near Mr. Barlow's dyeworks. The Board were advised that the scheme should be extended so as to deal with the sewage from the buildings referred to, and thus put an end to the pollution of the River Irwell by this volume of sewage.

**Worcester Improvements.**—The Hop Market Guardians met at the Hop Market Hotel last week to receive a deputation from the City Council with reference to the further widening of the Foregate. Arrangements have already been made between the two bodies, which provide for the Hop Market Hotel and two shops adjoining being set back

8ft. 10in. Plans have been prepared and accepted, and building operations commenced in the rear of the market, but the Council now desire to set the hotel back 22ft. The Guardians objected to the serious encroachment on their market yard, but agreed to the appointment of a committee to consider with the deputation the details of the scheme. A scheme has been decided upon which will practically make the Foregate as wide as at the Cross and the Foregate Street. Reports and plans will be submitted to special meetings of the Board and the Council.

**Dispute about Sewers.**—In the Chancery Division of the High Court of Justice, on May 9th, Mr. Justice Kekewich heard the case of the Vestry of the Parish of St. Mary, Islington, v. The Hornsey Urban District Council. The object of this action was to compel the defendants to disconnect the sewers in their district from a sewer belonging to the plaintiffs in the Stroud Green Road, North London, and to restrain the defendants from permitting any future connection of drains or sewers in their district with the said Stroud Green Road sewer.—The plaintiffs alleged that after heavy rains the discharge of the additional sewage and surface water from the sewers in several roads in the Hornsey district choked up the Stroud Green Road sewer, and rendered it incapable of carrying off the sewage and surface water from that part of the Parish of St. Mary, Islington, which, as the plaintiffs alleged, it was constructed to drain, so that serious floodings had been caused, endangering the health and property of the inhabitants and ratepayers of that parish. This led to the present action.—The defendants denied that the sewer in question was constructed for the sole benefit of the Parish of St. Mary, Islington, and asserted that it was constructed partly at the expense of the owners of property in the defendants' district abutting on the Stroud Green Road, and for the benefit of the owners and occupiers thereof; that the defendants had acquired a right by prescription to drain into the said sewer; and that, although the sewers in the above-mentioned roads were vested in the defendants under the Public Health Act, 1875, that vesting gave them no right to stop up the connections with the Stroud Green Road sewer.—Judgment was given for the defendants with costs.

# Trade and Craft.

## COUSLAND AND MACKAY.

A well-printed catalogue which we have lately received is that sent by Messrs. Cousland and Mackay, of Glasgow. It is well arranged, and one of its new features is a sketch section showing the firm's method of applying their various ventilating specialities to a building. The goods mentioned in the catalogue are copiously illustrated, and each article has a number, so as to prevent any confusion in ordering. Great care has evidently been taken to make the work reliable and complete.

## A GOOD STONE-CUTTER.

Messrs. J. G. Faulds and Company, of 48, North Frederick Street, Glasgow, are the manufacturers of one of the best stone-cutters. The patent improved multiplex stone-cutter combines lightness with great efficiency in working, and perfect freedom from the annoyance of bad sharpening and tempering. Simplicity and economy are apparently two of its advantages. It is very simple of construction, the handles being made with a slot, into which the cutter is inserted, and the fixing or removing of the cutter is very easy, owing to the fact that there are no screws or joints.

## NICHOLLS AND CLARKE.

The latest catalogue issued by Messrs. Nicholls and Clarke of Shorditch, London, E. is a bulky volume. It can be said without fear of contradiction that the book is a complete catalogue of sanitary appliances. It also deals with general goods supplied by the firm. It is substantially bound in green cloth covers, contains over 400 pages measuring 12½in. by 10½in., and is printed on good paper. Some idea of the variety of the contents may be realised when it is mentioned that the index occupies just on sixteen pages. Having this fact in view we will content ourselves with mentioning one specially useful feature. This is the section devoted to the acts and bye-laws referring to builders, &c. It was a happy thought to include this feature in the work; being set in bold type, it cannot fail to be the means of saving much labour and valuable time. The catalogue is well illustrated, several hundreds of blocks having been used for this purpose.

# COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
May 19	<b>BUILDINGS—</b> Leadgate, Durham—Strong-room, Committee-room, &c.	Industrial and Provident Society Ltd.	Society's Premises, Front-street, Leadgate. C. C. Doig, Architect, Elgin.
" 19	Roths, Scotland—Addition to Cottages		A. H. Bone, Architect, Cambridge Junction, Portsmouth.
" 19	Portsmouth—Drill Hall	3rd Vol. Batt., Hampshire Regiment	H. Walker, 8, Upper Fountain-street, Leeds.
" 20	Leeds—Parochial Institute		J. P. Gardner, Clerk, Cannoek.
" 20	Cannoek—Class-room, &c.	School Board	M. Petree, Borough Engineer, Town Hall-square, Grimsby.
" 20	Grimsby—Electricity Buildings, &c.	Urban Sanitary Authority	J. G. Skipton, Engineer, Northgate-street, Athlone.
" 20	Athlone, Ireland—Rebuilding Shop and Premises	Burgess and Sons	W. Stead, County Surveyor, Northallerton.
" 20	Askrigg, Yorks.—Stone Bridge		J. A. H. MacKenzie, Architect, Portree.
" 20	Kyleakin, Portree, Scotland—House		W. Duncan, 48, Albert-road, Middlesborough.
" 20	Middlesborough—Alterations to Premises	T. G. Poole, Jeweller	E. J. Hammond, 111, High-street, New Brompton.
" 20	New Brompton, Kent—Villa		W. M. and A. Sugden, Architects, Keighley.
" 20	Uteley, near Keighley—Two Residences		C. W. Eaglesfield, Architects, Falcon-street, Worlington.
" 20	Worlington—Semi-detached Villas	W. E. Strong	—Higginson, Stores, Victoria-road, Wrexham.
" 20	Wrexham—Four Houses		A. Hartley, Architect, Charlton-chambers, Castleford.
" 20	Garforth, near Leeds—Villa	R. Evers	W. V. Betts, Architect, Radford-road, Old Basford.
" 22	Basford, Notts.—Shed, Workshops, &c.	Union Guardians	A. Ferguson, 35, Royal Avenue, Belfast.
" 22	Belfast—Buildings	Water Commissioners	Austin and Paley, Architects, Castle-hill, Lancaster.
" 22	Broadbeath, Altrincham—Church		W. David, 34, Wayne-street, Hafod, near Pontypridd.
" 22	Hafod, near Pontypridd—Baptist Chapel		A. Clarke, 126, London-road, Lowestoft.
" 23	Oulton, near Lowestoft—Isolation Hospital	Rural District Council	Castiglione and Gibbins, 31, Lowther-street, Carlisle.
" 23	Worlington—Alterations to Hotel		J. Andrews, 13, Basinghall-street, E.C.
" 23	Lewisham and Forest Hill—Public Libraries	Lewisham Vestry	G. Fleetwood, 2, New-court, Lincoln's-inn, W.C.
" 23	Trowbridge—Technical School		F. Whitmore, Architect, Chelmsford.
" 23	Tendring, near Colchester—Infirmary Wards	Union Guardians	T. D. Mann, Clerk, Norfolk House, Norfolk-st., Strand, W.C.
" 24	London, S.E.—Chimney Shaft, Boiler House, &c.	Metropolitan Asylums Board	J. S. Storey, Surveyor, County Offices, St. Mary's-gate, Derby.
" 24	Shirebrook, near Mansfield—Lock-up	Derbyshire County Council	A. B. McDonald, City-chambers, Cochrane-st., Glasgow.
" 24	Glasgow—Foreman's House, Waiting-rooms, &c.	Corporation	W. F. Dewey, Vestry Clerk, Vestry Hall, Upper-street, N.
" 24	London, N.—Pulling down Buildings	Islington Vestry	A. F. Long, Town Engineer, Council Offices, Warminster.
" 24	Warminster—Pumping Station, &c.	Urban District Council	J. Gornall, Clerk and Steward, Clerk's Office, Rainhill.
" 25	Bainhill, Lancs.—Extension of Shippens	Lancs. Asylums Board	T. Easdale, East Cowton.
" 25	East Cowton—Restoration of House		W. Thornburn, Schoolhouse, Brydekirk.
" 27	Brydekirk, Annan, Scotland—Hall		W. Peachey, 3, Amber-street, Saltburn.
" 27	Bedale, Yorks.—Manse and Pair of Cottages		F. G. Hughes, Surveyor, Estates Office, Hampton-on-Thames.
" 27	Hampton—Works at Volunteer Drill Hall	Trustees of Parochial Charities	J. Hale, Borough Surveyor, Municipal Offices, Cheltenham.
" 30	Cheltenham—Reconstruction of Baths		Giles, Gough, & Trollope, 28, Craven-st., Charing Cross, W.C.
" 30	Talgarth, Wales—Asylum		Borough Surveyor, Town Hall, Darlington.
" 30	Darlington—Electric Light Buildings	Corporation	G. H. Hunt, Architect, Evesham.
" 31	Evesham—Shops and Residences	W. and H. Smith, Ltd.	J. Mansergh, 5, Victoria-street, S.W.
" 31	Gravesend—Engine House and Boiler House	Gravesend and Milton Water Co.	J. W. Jones, Architect, Brookles, Acrefair, Ruabon.
June 5	Cefn Mawr, Wales—Alterations, &c., to Chapel	Ebenezer English Baptist Chapel	T. Robinson, Architect, Victoria-chambers, Stourbridge.
" 6	Brierley Hill, Staffs.—Hot-water Apparatus	Kingswinford U.D. School Board	G. Baines, 5, Clement's-inn, W.C.
No date.	Histon, Cambs.—Church and House		



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—</b>			
May 20	Blackpool—Ten Bogie Trams	Tramways Committee	J. Lancaster, Tramway Manager, Blackpool.
" 22	Enniskillen—Electric Lighting Town Hall	Urban District Council	A. Scott and W. A. Scott, 16, William-street, Drogheda.
" 22	Alnwick—Reservoir	Rural District Council	H. W. Walton, Clerk, Alnwick.
" 22	Edinburgh—Steam-driven Fans	Magistrates and Council	Engineer, Electric Lighting Station, Dewar-place, Edinburgh.
" 22	Goole—Rotorts, &c.	Urban District Council	M. Dunn, Engineer and Manager, Gasworks, Goole.
" 24	Greenwich—Sinking Well	Union Guardians	T. Dinwiddy, 12, Croom's-hill, Greenwich, S.E.
" 24	Plymouth—Coal Conveying Plant	.....	J. H. Rider, Electrical Engineer, East-street, Plymouth.
" 24	Salford—Two Travelling Cranes	Gas Committee	Gas Engineer, Gas Offices, Bloom-street, Salford.
" 24	Shipley, Yorks.—Drainage Works	Urban District Council	M. Paterson, 35, Manor-row, Bradford.
" 26	Birkenhead—Electric Meters	Corporation	W. Bates, Corporation Electricity Supply Station, Bentinck-street, Birkenhead.
" 26	Greenwich, S.E.—Sinking Well	Union Guardians	T. Dinwiddy, 12, Croom's-hill, Greenwich.
" 29	Winwick, near Warrington—Railway Siding Extension	Lancs. Asylums Board	R. Curran, Engineer, Horsemarket-chambers, Warrington.
" 29	Blue Anchor, near Watchet—Sea Wall, Rail, &c.	Somerset County Council	O. A. Brereton, 21, Delahay-street, Westminster.
" 30	Kilkenny—Waterworks	Corporation	J. F. Reide, Engineer, Town Hall, Kilkenny.
" 30	London, E.C.—Iron or Steel Winches	James' Syndicate, Ltd.	Office, 18, Billiter-street, London.
" 31	Clacton-on-Sea—Sea Defences	Commissioners	T. A. Cressy, Surveyor, Clacton-on-Sea.
" 31	London—Telephones, Fire Alarms, &c.	London County Council	R. W. Partridge, 6, Waterloo-place, S.W.
" 31	Bexley, Kent—Installation of Telephones, Fire Alarms, &c.	L.C.C. Asylums Committee	R. W. Partridge, 6, Waterloo-place, S.W.
June 1	Crewe—Electric Lighting Plant	Corporation	Hopkinson and Talbot, 26, Victoria-street, London, S.W.
" 1	London, N.—Electric Light Installation	Islington Guardians	W. Smith, 65, Chancery-lane, W.C.
" 7	London, S.W.—Electric Lighting Works	St. Mary's Vestry, Battersea	Vestry Clerk, Municipal Buildings, Lavender Hill, S.W.
" 10	Naples—Harbour and Docks	.....	Public Works Department, Rome.
" 13	London, N.E.—Electricity Supply Mains	Hackney Vestry	R. Hammond, 64, Victoria-street, Westminster.
" 13	London, S.W.—Fire Float	London County Council	Clerk's Department, County Hall, Spring-gardens, S.W.
" 19	Horton, Christiania—Two Centrifugal Pumps, &c.	Government Dockyard Authorities	Commercial Department, Foreign Office, S.W.
" 30	Shanghai—Tramway Concession	Municipal Council	J. Pook and Co., 8, Jeffery square, St. Mary-axe, London.
<b>IRON AND STEEL—</b>			
May 20	Kettering—Water Mains, &c.	Urban District Council	T. R. Smith, Surveyor, Market-hill, Kettering.
" 24	Brighton—Wrought-iron Fencing	Corporation	F. J. C. May, Town Hall, Brighton.
June 2	Tonbridge—Cast-iron Pipes, &c.	Gas Company	J. Donaldson, Secretary and Engineer, Tonbridge.
<b>PAINTING AND PLUMBING—</b>			
May 20	Surfleet, Lincs.—Painting County Bridge	Hol and County Council	H. C. Johnson, Clerk, Sessions House, Boston.
" 20	Aldershot—Painting, &c.	War Department	Royal Engineer Office, North Aldershot.
" 23	London, W.C.—Painting, Whitewashing, &c.	Bloomsbury Union Guardians	J. Appleton, 57, Broad-street, Bloomsbury, W.C.
" 24	London, W.—Painting, Repairs, &c.	St. George's Union Guardians	E. T. Hall, 57, Moorgate-street, E.C.
" 26	Darwen, Lancs.—Oils and Paints, Lead Pipe, &c.	Gas Committee	A. H. Smith, Engineer and Manager, Gasworks, Darwen.
" 27	Warrington—Painting Fire-engine House	Fire-engine Committee	T. Longdin, Borough Surveyor, Town Hall, Warrington.
June 5	London, W.—Painting, Cleaning, &c.	St. Marylebone Union Guardians	Superintendent at Schools, Southall.
<b>ROADS AND CARTING—</b>			
May 19	Castle Donington, Derby—Granite, &c.	Rural District Council	J. W. Newbold, Clerk, Becket-street, Derby.
" 19	Lowestoft—Materials	Rural District Council	A. J. Firby, Road Surveyor, Ivy Cottage, Carlton Colville, Lowestoft.
" 19	Eastbourne—Materials	Rural District Council	L. Jeffery, Clerk, Trinity-chambers, Eastbourne.
" 19	Elgin—Road Works	.....	A. A. Turfiff, Burgh Surveyor, Elgin.
" 20	Southborough, Kent—Stone	Urban District Council	P. Hammer, Clerk, Council Offices, Southborough.
" 20	Clitheroe—Street Works	Corporation	A. B. Bleazard, Borough Surveyor, Clitheroe.
" 20	Ince, near Wigan—Grit Setts	Urban District Council	A. T. Swain, Surveyor, Council Offices, Ince Green-lane.
" 23	Bredbury, Dorset—Street-paving Works	Urban District Council	Surveyor, School Brow, Bredbury.
" 23	Carshalton—Asphalte	Urban District Council	W. W. Gale, Surveyor, Carshalton.
" 24	Ely—Granite and Slag	Rural District Council	E. B. Claxton, Clerk, Dowham-lane, Ely.
" 24	London, S.W.—Making-up and Paving Roads	Fulham Vestry	C. Botteri, 1, Town Hall, Waltham Green, S.W.
" 25	Pokesdown, Bournemouth—Making-up Road	Urban District Council	E. W. Ingamelles, Surveyor, Cron well-road, Pokesdown.
" 25	London—Repaving with Jarral Wood	St. John's Vestry, Hampstead	Surveyor, Vestry Hall, Hampstead.
" 27	Copford, near Colchester—Materials, &c.	Lexden and Winstree M. D. C.	J. E. als, Surveyor's Office, Copford, near Colchester.
" 27	Uttoxeter, Staffs.—Carting	Rural District Council	J. Preston, Surveyor, Woodlands, Uttoxeter.
" 30	Barnet—Kerbing, Making-up, &c.	Urban District Council	W. H. Mansbridge, 40, High-street, Barnet.
" 30	London—Laying Wood Paving	Willesden District Council	O. C. Robson, Office, Dyne-road, Kilburn.
" 31	Kingston-on-Thames—Tarpaving, &c.	Corporation	Clerk, Clattern House, Kingston-on-Thames.
" 31	Liverpool—Reconstructing Road	Sefton Rural District Council	H. P. Cleaver, Clerk, Brougham-terrace, Liverpool.
" 31	Wolverhampton—Materials	Tramways Committee	W. Bradley, Borough Surveyor, Town Hall, Wolverhampton.
June 6	Branksome, Dorset—Street-paving Works	Urban District Council	S. J. Newman, 3, Tennyson-bldgs., Ashley-road, Branksome.
" 9	Shrewsbury—Hire of Steam Roller, &c.	Athenium Rural District Council	J. Everest, Clerk, St. John's-hill, Shrewsbury.
" 30	Wolverhampton—Granite Setts	Streets Committee	J. W. Bradley, Borough Surveyor, Town Hall, Wolverhampton.
<b>SANITARY—</b>			
May 19	Shrewsbury—Drainage Works	Sanitary Committee	W. C. Eddowes, Borough Surveyor, The Square, Shrewsbury.
" 23	Gloucester—Sewers, &c.	Rural District Council	J. F. Trew, County Chambers, Station-road, Gloucester.
" 23	Barnet—Pipe Sewers	Rural District Council	W. H. Mansbridge, Office, High-street, Barnet.
" 23	Kirkby Muxloe, Leics.—Sewers	Blaby Rural District Council	J. B. Everard, 6, Millstone-lane, Leicester.
" 23	Southampton—Sewerage Works	Corporation	W. B. G. Bennett, Borough Engineer, Southampton.
" 24	Norton, Sheffield—Removal of Refuse	Rural District Council	E. A. Sampson, 17, York-street, Sheffield.
" 26	St. Annes-on-Sea, Lancs.—Sewer	Urban District Council	H. Bancroft, 85, Mosley-street, Manchester.
" 29	Tong, Yorks.—Sewer, &c.	Urban District Council	J. Drake and Son, Engineers, Queensbury, near Bradford.
" 30	Chingford, Essex—Sewer, &c.	Urban District Council	W. Stair, Surveyor, Chingford.
" 31	Halifax—Sewage Works	Highways Committee	E. R. S. Escott, Borough Engineer, Town Hall, Halifax.
June 1	Alnwick—Sewers, &c.	Urban District Council	G. Wilson, Engineer, Council Offices, Alnwick.
" 3	Pembroke Dock, Wales—Sewerage Works	Town Council	Beesley, Son, and Nichol, 11, Victoria-street, Westminster.
" 13	Market Harboro—Sewers, &c.	Rural District Council	J. B. Everard, 6, Millstone-lane, Leicester.
<b>TIMBER—</b>			
May 23	Farnham—Wooden Fencing	Guardians	S. Stapley, Architect, West-street, Farnham.
" 23	Eton—Yellow Deals and Batten Ends	Union Guardians	R. H. Barrett, Union Offices, Slough.
" 26	London, N.—Oak Fencing and Gates	Wood Green Urban District Council	C. J. Gunyon, Engineer, Town Hall, Wood Green.

## COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
May 16	Arbroath—Public Shamblers	£7, £5, £3	Burgh Commissioners.
June 1	Leeds—Market Hall and Shops	£150, £100, £50	Corporation.
" 6	Salford—Laying-out Site of Barricks	£30, £20, £10	Corporation.
" 27	Edinburgh—County Buildings	£100, £50	Midlothian County Council.
" 30	Wakefield—Central Buildings	£50, £30, £20	Wakefield Industrial Society, Ltd., Bank-street, Wakefield.
July 3	Harrogate—Kursaal	£150, £100, £75	Corporation.
" 27	Plumstead—Municipal Buildings and Public Library	£100, £75, £50	Edwin Hughes, Clerk, Vestry Hall, Maxey-road, Plumstead.
No date.	Aldershot—Masonic Hall	£30, £10	Aldershot Masonic Hall Co., Ltd., The Triangle, Aldershot.



## Property and Land Sales.

**LOCAL SALE OF PLOTS on MAY 31st.—ILFORD.**—Uphall Estate, First Portion.—Free conveyances; payment by instalments; roads made; tithe and land tax free.—The special attention of Plot Buyers, Builders, and Creators of Ground-rents is directed to the sale of this Land, which is ripe for immediate building. — **ONE HUNDRED and THIRTY-NINE PLOTS** of ripe **FREEHOLD BUILDING LAND**, having frontages to the following thoroughfares, viz., Ilford-lane (a road 50ft. wide, leading from Ilford Broadway to Barking), Wingate-road, Natal-road, and Uhhall-road. The plots vary in frontage from 16ft. to 37ft., and in depth from 90ft. to 125ft., and are ripe for the erection of small houses and shops, and the immediate creation of ground-rents.

**MESSRS. DOUGLAS YOUNG and CO.** will **SELL** the Above by **AUCTION** at the Angel Hotel, High-road, Ilford, on **WEDNESDAY, MAY 31st, 1899, at SEVEN o'clock** in the evening.

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**LAND SALE in a MARQUEE on the ESTATE on THURSDAY JUNE 8th.**

**CLAPHAM PARK.**—An unequalled opportunity for securing **FREEHOLD VILLA SITES**, so rarely to be obtained in this neighbourhood. About half a mile from Clapham-road Railway Station and the City Electric at Clapham Cross, and the Cable Tramway, Brixton-road; and close to the lovely Commons of Clapham and Tooting Bec. Free conveyances; payments by instalments.

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**FLEET STREET, CITY.**—By order of the Governors of St. Bartholomew's Hospital.—A fine commanding Building Site, occupying an area of about 2342 sq. ft. on the south side and newly widened part of this great main thoroughfare, within about 40 yards of Ludgate-circus, having frontages of about 55ft. 6in. to Fleet-street and 51ft. 5in. to St. Bride's-avenue in the rear (facing St. Bride's Church); remarkably well lighted back and front, and suitable for the erection of first-class shops and business premises—a bank, newspaper or publishing offices, or other important buildings adapted to the position.

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Particulars, with plans, of Messrs. WILDE, MOORE, and WIGSTON, Solicitors, 21, College-hill, Cannon-street; of Messrs. E. P'ANSON and Son, Architects and Surveyors, 7A, Laurence Pountney-hill, E.C.; at the Clerk's Office, St. Bartholomew's Hospital; and of the AUCTIONEERS, 80, Chapside.

By order of the Corporation of the City of London.—Very valuable and important Building Site, Nos. 120, 121, 122, and 123, Fenchurch-street, and No. 8, Billiter-square, in the City of London.

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MAY 24, 1899.

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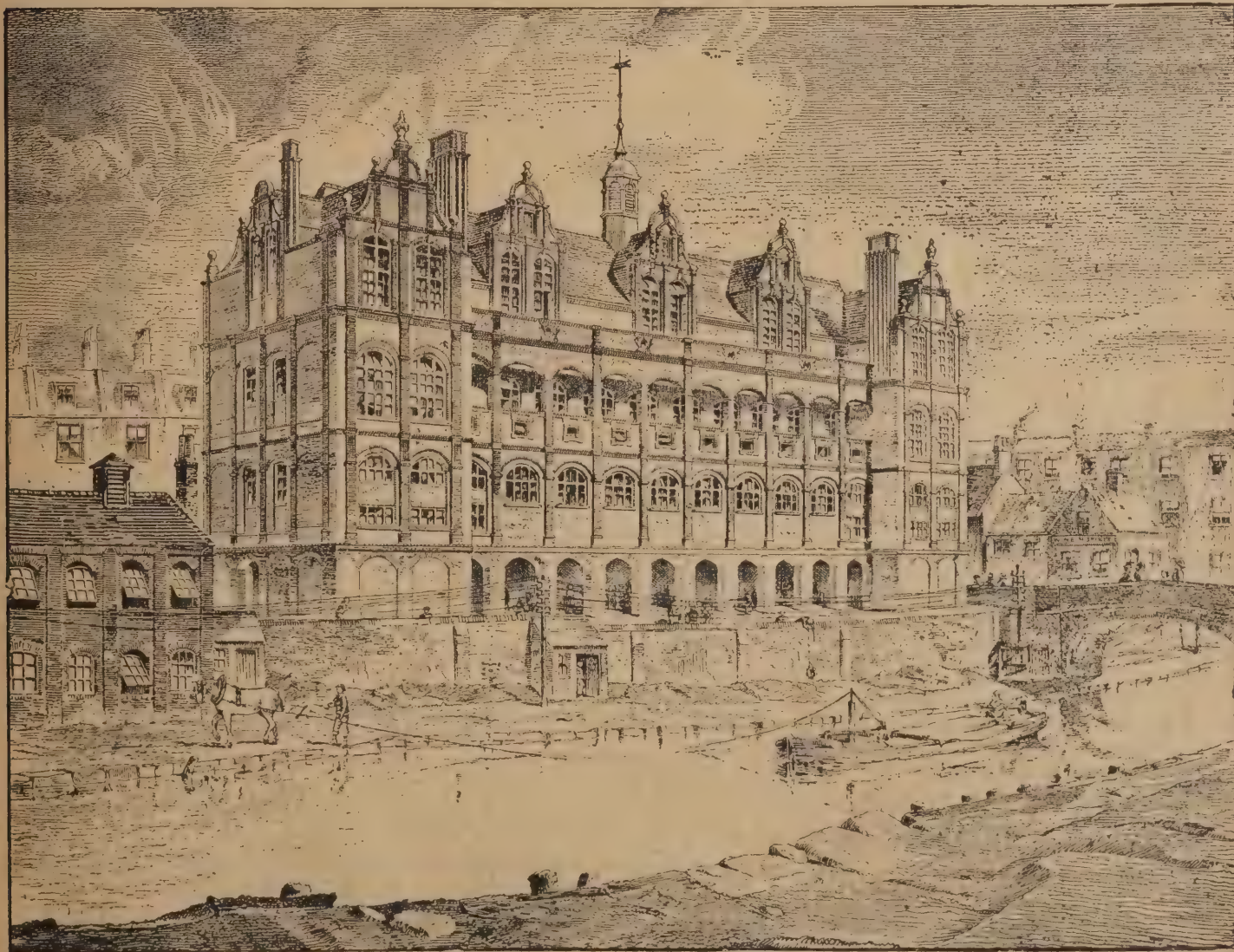
## An Architectural Causerie.

### Board School Architecture.

THE school given in our illustration is only one out of over three hundred, erected, in considerable haste, from the designs of Mr. E. R. Robson, to overtake educational arrears since the passing of the Education Act of 1870. In their *motif* these are founded mainly on the types still to be seen in the flint and brick buildings of the Isle of Thanet, and those which still remained of the old brick buildings of London and its environs. Many of these schools have since been enlarged and altered beyond recognition. Although some twenty years old, Hanover Street School is typical of the leading principles which have influenced all school

designs by the same architect, involving very ample light, a studied sky-line, solid mass and absolute simplicity. Built in a neighbourhood at once squalid and picturesque, the limited nature of the site demanded a playground under the building, and our view of the side towards the canal gives a fair impression of its general character. Its architecture expresses its purpose, and fits its landscape and surroundings. In giving this example, it may be pointed out that the creation of a distinctive architectural style for schools of undenominational character, however successful in itself, has had an effect far beyond that of giving the schools the importance of public buildings, or of setting their mark on the whole of London, or of distinguishing the schools themselves from other buildings at a glance. The ordinary stock brick is the facing material, the window-jamb and main angles are brightened by a ruddier colour, and, lastly, the gables are treated with curved outlines in preference to straight. This last feature has set up a universal mania for fantastic gables, whether in brick or stone. Architects have struggled over it as never before. Not only old England, but Germany, Holland, and Belgium have been ransacked for examples. Whole streets at the West-end of

London have been influenced by the idea, and builders have combined their efforts with that of rendering terra-cotta useful as a building material. Throughout England the London school gables have been copied and travestied. Even the speculative builder has imported some suspicion of it into his rows of small houses, stretching for miles on every side of the metropolis. In spite of many happy results in the hands of men of knowledge and taste, it is lamentable that, in by far the larger number of instances, the manifest evidence of struggle, in inferior hands, has carried with it the condemnation, not merely of the particular design, but of the style itself. Knowledge has been too commonly wanting, ignorance of form too great, vulgarity all too prevalent, self-restraint too frequently lost. Hence, at no previous period have so many malformed and distorted gables been produced as in the last twenty-five years. It is not too much to say that the prevailing architectural note of the expiring century is that of what we must call, for want of a better word, the "cockorum" gable. As now usually followed by the builders of provincial Board schools, the style may be dismissed as having finally gone to seed. We may, therefore, welcome the evidence afforded by other works, produced by the



HANOVER STREET SCHOOLS, ISLINGTON, LONDON. E. R. ROBSON, ARCHITECT.



more cultivated among our younger architects, that they are turning for inspiration to the study of older and purer types, and that though Greek art may be out of reach, old Spain is serviceable as a foundation. On the general question, and apart from a preference for this or that style, it is important that each architect who may possess a spark of artistic fire, should produce his work so carefully, that, when done, it shall seem to have been done without effort. There can, in this sense, be no worse architecture—save always such as betrays downright ignorance—than that which reveals the designer as having strained his artistic faculties almost to breaking point. The work then not only fails to be either interesting or suggestive, but may be really repulsive, however clever. A man, working well within his powers, can produce better things by the simple exercise of greater care and pains, and by the serious purpose of setting himself to produce beautiful architecture within recognised lines than by any other. If we cannot have original architecture without ugliness, let us prefer the lesser evil. In an age of haste and hurry, let us never forget that no fine work of art was ever produced in a hurry. In point of school planning, the Hanover Street School is not now a model for imitation. Since its erection, the science of the subject has been carried further. Left-hand light is now required to the classes. Many improvements in organisation and teaching methods have been made. The principle of the Central Hall is more prevalent. Pupil-teachers are much fewer in proportion to certificated teachers. All these things have combined to work radical change in school plans. The lessons, however, as to main external treatment, remain. One of these is, never to place windows where they would be detrimental to the work inside for the sake of mistaken ideas of real symmetry. Another is, that simple outlines, well considered, are more likely to remain a source of pleasure than more grotesque forms applied to gables of buildings in conspicuous positions. They are also of the more serious character which befits the dignity of a public building.

E. R. R.

## OUR COMPETITION.

### EXTENSION OF TIME.

IN response to the request of several intending competitors who desire further time for the preparation of their designs for a Country House, we have decided to extend the time allowed for sending in designs to **Wednesday, June 7th**. Those who intend to compete, however, must intimate to us their intention to do so not later than **ten days before** the Competition closes. Full details as to the conditions of the competition, in which premiums amounting to **Thirty-four Guineas** are offered for the three best designs, appear on p. 200 of the BUILDERS' JOURNAL AND ARCHITECTURAL RECORD, dated May 10th.

## On Reflection.

Contractors and the L.C.C.

THE London County Council at their meeting last week sanctioned a procedure in reference to building contractors which is somewhat at variance with their recognised policy. Hitherto the Council have made it a rule either to throw open their work to public tender or to carry it out themselves by the direct employment of labour. But in regard to the blocks of dwellings now being erected on the Millbank site, the Council decided, on the recommendation of their Housing Committee, to accept the tender of Messrs. Holloway Bros. to build four additional blocks at the same rate as they had already contracted to build two blocks. There is, of course, a danger of injustice being done to other firms as well as additional expense being incurred if tenders are accepted in this way without the preliminary public competition, and several members of the Council opposed the recommendation on those grounds. But in this particular case we think the Council were fully justified in setting aside for the nonce their own salutary rule. Messrs. Holloway are prepared to carry out the work for a lower price than the Works Department of the Council would undertake it, and by the building of the six blocks being carried on simultaneously by the same builder, a great saving of time will be effected. This last is a most important consideration, for if ever there was a matter of urgency, it is this question of the erection of working-class dwellings. These houses cannot be erected fast enough to accommodate those who are in need of them. As Lord Onslow pointed out, the Housing Committee have now to consider not only the question of housing the destitute, but of finding houses for those able to pay a fair rent. We are glad to see that politicians and publicists of all kinds are beginning to recognise the extreme gravity and urgency of this housing question. Sir Henry Campbell-Bannerman, in a recent speech, said that he believed there was no public question of the present day which offered so formidable a problem as this of the housing of the people. The London County Council, in all their efforts, have only touched the fringe of the problem; and they will soon have to face the question whether they should not abandon their rule that all their housing undertakings should be carried out without involving a charge upon the rates, and proceed—in the interest of public health and public morality—to carry out a great scheme of rehousing at the public expense.

Overcrowded London.

If anyone wants to know what this housing problem really is, let him procure a small book, recently issued from the "Daily News" Office, entitled "No Room to Live," being a reprint of a series of articles that appeared in that journal from the pen of Mr. John Haw. Never before has the extent of the overcrowding evil in London been

brought home to us with such force and vividness. These chapters are a fine piece of journalism; but they are more than that. They are a clear summons to Members of Parliament, county councillors, guardians, district councillors, and in a secondary degree to all sorts and conditions of citizens to grapple with this tremendous problem. They supply the basis of facts which must precede any effective reform. Therein lies the great value of Mr. Haw's work. He offers a few hints as to the lines along which reform should proceed, but his great object has been to state the problem. Terribly grim and scarcely credible are many of the facts narrated; but we are assured that they are in no sense exaggerated. Surely never before in the history of the world has a great city made laws regulating its own health and allowed these to be violated by one-fifth of the population. The Public Health Act, 1891, decrees that in a room used both for living and sleeping each adult must have 400 cubic feet of space, two children under the age of twelve to count as one adult; yet in London no less than 900,000 people do not reach even that low standard of comfort, and consequently live in continuous contravention of the law. Surely never before have men in receipt of good wages, able and willing to pay high rents, utterly failed to find house room for themselves and their families, and eventually been compelled to send their wives and children to the workhouse, and themselves find a temporary shelter in a common lodging house. This is what has been happening in London lately. The consequences of this house famine,—the exorbitant rents, the disease, death, drunkenness, immorality, are clearly set forth, and not the less effectively because there is no fine writing or straining after effect. The problem will not soon be better stated; the next thing is to find the remedy. And here is a task worthy of the best energies of the wisest amongst us.

### Another Protest.

AFTER the weighty memorial of the architects, upon which we commented last week, the Dean and Chapter of St. Paul's have just received another, which they may possibly be inclined to regard as even more worthy of attention. It will convince them—if anything can—that the feelings of dissatisfaction aroused by Sir William Richmond's misapplied industry are not confined to architects and artists. The latest memorial includes names of men—some of the highest eminence—belonging to many professions and many parties. It is not an argument, as was the architects' memorial; the signatories confine themselves to one very definite appeal, viz., that the Dean and Chapter should, before proceeding further with the work, take the opinion of a strong representative body of experts as to the desirability of the character of the decorations. There is little doubt what the verdict of such a committee would be; it would be impossible, we think, to get a dozen signatures from men of any weight in the artistic world to a counter memorial in favour of the decorative scheme as it is now being carried out. We hope the Dean and Chapter will comply with this request and see to it that the proposed committee of experts is of so representative a character that all sections of the public may have confidence in its decisions.





Segovia

Cathedral from Alcazar

DRAWN BY F. HAMILTON JACKSON, R.B.A.

## SPAIN:

### Its Picturesque Cities and Monasteries.

#### VIII.—SEGOVIA.

By F. HAMILTON JACKSON, R.B.A.

(Continued from page 84, No. ccxiv.)

ONE may travel to Segovia from the north so as to arrive either at about 5.30 a.m. or 6 p.m. Like most of the Spanish towns, it is served by a railway on which but two trains run each way in the course of the twenty-four hours; these are found sufficient for the small though growing demands of the traffic. The night train is the favourite in the summer, because the heat of the day is insufferable, and for travellers whose time is limited it is convenient to be able sometimes to compress two days into one. We went from Burgos by the evening train to Medina del Campo, at which place we had to change, and kick our heels for two hours in the middle of the night. The train by which we went on was rather full, and the party became a good deal divided, the carriages being already occupied by silent Spaniards redolent of garlic. It was a greater pleasure than usual to see the dawn creep over the sky, and the features of the landscape become visible in that calm, quiet, grey light which seems to suit the landscape of Castile almost better than the brilliant sunshine, to which the traveller is more accustomed. The snow still lay on the Sierra de Guadarrama in large patches, making its beautiful purple blue more noticeable, and the various tributaries of the Douro which we crossed were real rivers and not torrents of stones, while the near foreground was green with springing crops, and became interesting with agricultural operations as the light became stronger and the peasants began to make their way afield.

The station at Segovia lies outside the town, and there is a fine, well graded road which leads to it with sweeping curves, planted with little trees. The conveyances which wait outside are truly wonderful things—something like old ramshackle omnibuses, long in the body, with much dilapidated paint, and with shutters to draw up in place of windows. They are drawn by teams of mules or horses, some of them three abreast, some harnessed one in front of the other, occasionally to the number of five; and when the luggage has been packed on the top of the vehicle with many groans and snorts (for the Spanish porter finds any parcel weighing much over 56lb exceedingly heavy

and calling for many expletives), and two men have climbed to the summit to hold it on, a start is made with much cracking of long whips and shouting and jingling of bells and of metal plaques attached to the harness in all sorts of unlikely places, and with a most imposing and picturesque effect.

At the top of the slope, where another road crosses and goes down to a public garden on the left, is a customs or octroi station, by the side of which is a shapeless mass of stone bearing an equal resemblance to a sea cow and a Lombardic lion or griffin. This is one of the Toros de Guisando, so called from several to be seen at a place of that name between Madrid and Avila. In 1598 Gil de Avila enumerated sixty-three of them in the central regions of Spain; in 1820 Somorrostro numbered only thirty-seven, so many had been destroyed. They are very ancient, but who it was who first set them up is unknown; they have been ascribed to Phoenicians and Carthaginians, and have been supposed to be idols of the aborigines. There were two in Segovia called El Marrano de Piedra and La Marrana, the sow—the word “Marrano” signified “excommunicated” in the eighth century (perhaps from Maranatha, accursed), and as it was used against the Jews, who were called “pigs,” it at last became synonymous with that word.

Beyond this point the road gradually descends, broad and well metalled, and lined with quaint houses, sometimes on the level, sometimes standing on a sort of terrace, or with the upper story resting on pillars, and with many great doors studded with nails and metal plaques, like those at Toledo, and coloured the most delightful reds and greens, or grey from the weathering of the unpainted wood. After a time the road narrows and rises, and again descends a little hill, and shops begin to appear, indicating that the centre of the town is near, while to the right, down a side street, one catches a glimpse of one of the glories of Segovia, the Roman aqueduct.

This aqueduct is called by the people “El Puente del Diavolo,” for all wonderful things in Spain are supposed to have been wrought by occult means, and who built it is uncertain, as neither Segovia nor its aqueduct are mentioned by the ancients; but judging from the resemblance of the masonry to that of Mérida and Alcantara it was probably erected by Trajan. It brings the water of the Rio Frio from the Sierra Fonfria, about nine miles away, and becomes visible opposite the ex-convent of San Gabriel, from which point to its disappearance on the other side of the valley there are no less than 320 arches, the central group of which is 102ft. high. It is constructed of granite without any mortar, and is a most imposing monument. In 1071 the Moors of Toledo sacked Segovia and destroyed thirty-

five arches of the aqueduct, and it remained in ruins until 1483, when Isabella employed a monk of the convent of El Parral named Juan Escovedo to repair it, giving him as his fee the woodwork of the scaffolding employed. He copied the old work so well that it is extremely difficult to tell which is newer and which older now that 400 years have passed.

The main road to Madrid passes under the central arches, and there is a little plaza on the inside, made by clearing away a number of small houses from the foot of the arches, upon the piers of which the stains of smoke still show. On one side of the plaza is a fountain. A market is held here in the morning, when much confusion prevails and many quaintly-garbed countrymen may be seen.

The principal road to the cathedral turns to the left at right angles to the direction of the aqueduct. On the wall may be seen one of those notices so common in Spanish towns in which the streets are narrow, which are intended to prevent wheeled vehicles meeting each other where it is impossible for them to pass—a little slab of marble with a horse and cart incised upon it, and the word “Salida” or “Entrada,” and an arrow pointing in the direction indicated by the words, which mean “exit” and “entrance,” so that the driver who cannot read can understand that he must not go up a “Salida” street, the direction of the arrow and the horse and cart making it plain to him. Not very far up this street is, on the right, a curious example of Spanish Architecture, based upon Florentine work apparently; a palace very solidly built, with the face of each stone cut to a prismatic projection, and with a round-headed door with enormously deep voussairs. The windows are protected by some good iron grilles. Facing this house is a breast high wall overlooking a flight of steps, from which a good view of the city in the direction of San Millan may be had, with the plain stretching beyond to the Guadarrama mountains—blue in the distance, and snow-capped in the spring, a very fine view.

Down a little court to the left is a house covered with a pattern impressed upon a coating of plaster, the design of which shows Moorish influence, and then the church of St. Martin appears on the right, a noble building with an open arcade built cloister-fashion round the south aisle and returned across the west end. Owing to the slope of the ground upon which the church is built this arcade stands on a wall elevated well above the road, and is gained by steps from the plaza with a fountain, into which the street expands at its eastern end. The tower is a very fine twelfth century work, and the carving of the capitals in the arcade is worth observing, but the inside of the church has





CITY BOUNDARY, SEGOVIA.

been modernised. It contains the tombs of Herrera, the architect, and his wife, and of Don Rodrigo, and the west doorway and door are very interesting. Just at this part of the street may be seen many wrought iron knockers, of fine design, and Moorish feeling; but Segovia is full of good ironwork.

Nearer to the cathedral is a little courtyard to the left containing an interesting old well with iron cresting and winding apparatus. This courtyard is picturesque with little Renaissance pillars somewhat like a Roman atrium, and is overlooked by a plastered wall with Moorish pattern upon it. This is the outer wall of the convent to which the church of Corpus Christi, which is just higher in the street, belongs. This church was built for a synagogue and much resembles Santa Maria la Blanca at Toledo, though it is less ornate. It has the same sort of capitals to the columns, arches of the same shape, and the same sort of arcade just below the roof, which also is very similar. At the bottom of the church are gratings through which the nuns may see what passes at the altar without themselves being seen. The east end of this church has been remodelled in the seventeenth or eighteenth century, like so many others in Spain alas! at a time when art feeling had sunk almost to its present low level.

We are now quite near the central plaza, the "Plaza de la Constitucion," which in Ford's time might be described in the words which he uses, "a Prout-like plaza," as is evidenced by the few houses which the march of modern improvement has left. On three sides a round arched granite arcading has been erected, and on two of these sides the houses have been completed on the model of

the modern dwellings one sees in provincial towns of France and in Italy. On the third side, that facing the cathedral, the ruin was not completed before funds gave out, one may suppose, for the old houses still stand forlorn behind the granite arcade, which is all that has been built.

From this plaza may be had a fine view of the eastern end of the cathedral, a mass of yellowish stone, the choir rising above and from among the chapels which cluster around its base, beyond which the transept and a part of the nave are seen. It is difficult to get a general view of the west front, the great height of the tower and the width of the façade, which incloses also the cloisters, requiring a greater distance to embrace in one view than the parvis in front affords. About half-way up the tower, which is still 330ft. high though it has been lowered 22ft., is a window from which projects a sort of crane with a bucket dangling from it. Within this is the abode of the Sacristan, who draws up his provisions &c. by means of this bucket like a bullfinch in a cage, and so lives between heaven and earth when the cathedral is closed. The tower may be ascended for the sake of the view, which is most extensive, the cathedral being perched on the edge of the rock beneath which through a sort of rocky gorge the rivulet Clamores flows to join the Eresma, the river upon which Segovia stands; and the daring who are careless of their lives and possess extra strong heads may go higher than the bellchamber, and by means of iron cramps fixed in the stone forming the roof of the tower may reach the very summit, a giddy height indeed!

The interior of the cathedral is very finely proportioned and most impressive, reminding one of Toledo, though later in style. Like that cathedral it has a central nave, flanked by two aisles on each side, and like it too it still possesses a quantity of fine Flemish glass.

The yellowish tone of the stone used in building it gives great warmth to the interior, and is well suited to give effect to the late Gothic panellings which enrich the walls and vaults, also making the shadows in the side chapels deep and mysterious. It was built by the architects of the cathedral of Salamanca—Juan Gil de Ontañon and his son Rodrigo—and is the last flower of Gothic ecclesiastical architecture in Spain, having been commenced in 1525, to replace that destroyed by the Comuneros in 1520. It is 351ft. long and 177ft. wide, the nave is lofty, rising to the height of 99ft., and appears higher than it really is, owing to the height from which the arches spring. In one of the chapels to the left is a pieta, by Juan de Juni, executed in 1571, which has received much praise; it is carved

and painted and the figures are larger than life. There is a great retablo of coloured marbles, which are also used in the Capilla mayor and in the trascoro.

When this was put up (for Charles III.) the ancient sepulchral slabs were carted out and lumbered up near the entrance—among them was that belonging to the tomb of Rodrigo Gil, the architect, who died in 1577.

The most beautiful thing connected with the cathedral, as at Tarragona, is the cloister. This formed part of the old building, and was taken down, repaired and rebuilt when the new one arose from its ruins.

In the centre is a beautiful garden, rather dishevelled perhaps, but none the less beautiful for that, with a picturesque well, and cypresses, lemons and other trees around it with a tangle of low growing flowering plants below. Over the entrance doorway grows a bushy jessamine, and behind the plants from every view is the warm coloured stone, worked into lacelike traceries of most beautiful design and crowned by a parapet with pinnacles rising from it at intervals, which also is pierced with an elaborate pattern. The light falls into the



RENAISSANCE DOORWAY, SEGOVIA.

cloister walk at a high angle, for the wall beneath the windows is more than the height of a man, and this gives this cloister quite a different effect from most. At the end of one of the walks is a little chapel shut off by a reja of beautiful design. Many of these less pretentious works in iron are really more charming, perhaps because more simple in design, than the masterpieces of the great smiths which excite the wonder and admiration of the instructed beholder, on account of the great difficulties so successfully overcome. (To be continued.)



TWELFTH CENTURY CHURCH, SEGOVIA.

**An Old Well was Discovered** by Mr E. P. Wynne, chemist, of Aberystwith, while excavating in his cellar last week. Two others have also been discovered, but none of them contained much water.

**A Memorial of a Battle.**—The Emperor of Germany intends to lay out a plot of ground at Berlin as a memorial of the Battle of St. Privat. The central figure will be a colossal mailed angel, the designs for which His Majesty himself has prepared. The sculptor is to be Mr. Walter Schott Ford.

**New City Fire Station.**—The Fire Brigade Committee of the London County Council brought up a report, at a meeting of the Council last week, recommending the purchase, for £31,500, of a site in Red-cross Street, E.C., on which to erect a new fire station, to be used in substitution for the existing White-cross Street station. The cost of building the new station will probably be not less than £15,000.



## ROUND TOWERS OF IRELAND.\*

By ANTHONY SCOTT.

*(Continued from page 218, No. ccxviii.)*

MR. GLADSTONE'S Government in 1869 added a clause to the Church Dis-establishment Bill, setting aside a small sum of Church surplus fund to be applied in preserving Irish National Monuments of architectural and historical interest, and about twenty-five monuments were scheduled in connection with this Act. Sir Thomas H. Deane (then Mr. Deane, R.H.A., Architect), was appointed by the Treasury Superintendent of the National Monuments, in conjunction with the Commissioners of Public Works in Ireland, who had control of the funds. Several other monuments have in subsequent years been added to the original list, embracing nearly all the ancient buildings

in the country worth preserving, including the principal round towers. It has been to me one of the most pleasing duties of my life to superintend for a period of twelve years the restoration of these ancient towers and temples of past ages—to trace in the ecclesiastical ruins the rise, development, and transition from the primitive, tiny quadrangular church with its western doorway, having inclined or sloping jambs, to the beautiful groups of Romanesque monastic buildings of more modern times. This was a pleasing study so far as marking the rise, progress, and development of early Christian architecture was concerned, in the same way as we follow Ferguson and other writers of architectural history, who commence with man's primitive efforts to build in stone.

**Stone-build Churches.**

So far as stone-built churches are concerned, there has been no controversy, for all are agreed as to their being the work of the early Christians, but it is not, nor has it been, so with the circumjacent towers, around which so much doubt and uncertainty hangs. It

was these buildings which attracted my attention most in consequence of this uncertainty and doubt. If they were the work of a period much earlier than Christianity, I felt sure they would bear the impress of some distinctive features not to be found in the work of more modern times. I provided myself with Dr. Petrie's exhaustive inquiry into the origin and uses of the Round Towers, Canon Smiddy's, O'Brien's, and Keane's works also on the subject, and in this way I commenced a study of these curious buildings which appear to have puzzled generations of Irish historians and archaeologists, as well as writers and historians of other countries. I may be pardoned, if, after years of close contact with these buildings, I have formed, and now give expression to, very decided opinions as to the period of their erection.

**Reputed Origin of the Round Towers.**

As regards the word "origin," I fear it is and has been a very misleading expression. I would, therefore, rather confine myself to what I consider the period or periods of the

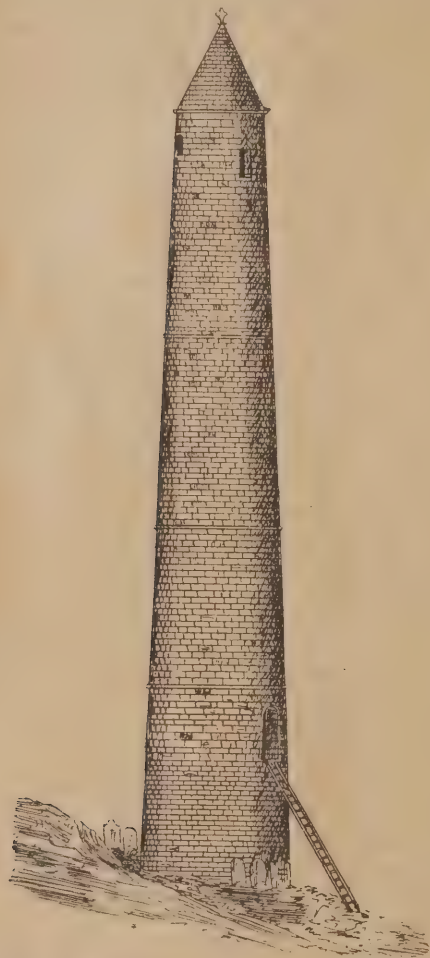


Puerta de  
Sant Andres  
Segovia

DRAWN BY F. HAMILTON JACKSON, R.B.A.



probable erection of the Towers; but, whatever may have been the period at which the first Round Tower was erected in Ireland, there can hardly be a doubt but that they are a type of a structure or structures still older or evolved from some particular idea, so that the word "origin," pure and simple, may possibly date back to the remote ages of prehistoric antiquity. Places appropriated to religious worship are of very early origin. In the Sacred Writings we have evidence of their existence from the remotest periods. Their prototypes are implied in the history of the antediluvian patriarchs, in the altar erected by Noah, in the pillar set up by Jacob which he called "God's House," in the sacrifices of the first diluvian age, as well as in the circles of stone set up by Moses at the foot of Mount Sinai, and by Joshua at Gilgal. They are found in the early temples of Egypt and in



ROUND TOWER AT ARDMORE, CO. WATERFORD.  
DRAWN BY ANTHONY SCOTT.

the gorgeous Tabernacle, raised by Divine command, in which the children of Israel worshipped. The

#### Earthen Rathes and Stone Circles

of Ireland appear to be the first mechanical constructions known to Irish history. Within these circular rathes and stone circles were smaller circular buildings in the shape of caves and what have been termed "beehive cells," hidden beneath the mechanically formed mounds of earth, clay and stones. The outer circles and entrenchments or fosse were the ramparts or the defences. Structures of this kind are to be found all over the country, notably in New Grange, Dowth, and Knowth, in Co. Meath, near Drogheda. They are said to be sepulchral erections, possibly primitive dwellings or inclosures of the Pagan Irish. We go on from these to the dry stone cashels on the South-west coast of Ireland, as at Gallerus in Co. Kerry, and Islands in the Atlantic off the same coast, and in various other parts of the country in mountainous districts. We find the circular cells built of dry stones laid in horizontal

courses sloping inwards towards the top in the shape of a beehive, and covered on top with a single stone.

#### The Cashels

appear to be the earliest stone buildings of Christian times, and they consisted of a number of circular detached beehive cells, in most instances protected by a circular dry stone wall, as at Dun Angus on the Island of Arran, in Galway bay, at Gallerus, in Co. Kerry, and on the Skellig rock in the Atlantic off the same coasts. In the case of the cashel at Gallerus the spaces between the different cells have been filled in with dry stones, and covered passages connect the different cells with the exterior face of the wall which bounds the group of cells, and which appears to have originally stood about 6ft. high. We pass on from these groups of beehive cells to the larger single round or detached circular houses, some of which are still to be found on the South and West coast, for instance in the island of Lough Lee, in Kerry, and Ardilaune, off the coast of Connemara, and elsewhere. There can hardly be a doubt that these circular monastic cells and inclosures were a development of the raths, and earlier cells found in the raths constructed by the Pagans of earlier days. These groups of monastic buildings must also have produced the single isolated round houses or churches already referred to. Now if we examine carefully the remains of all mechanical constructions found in the country in the shape of defences and inclosures, whether of earth or stone, as well as all domestic and sepulchral caves, whether of the early Christians or of their Pagan ancestors, we shall find them all

#### Circular in Plan,

and when we come to Christian times we shall find them all developments of and improvements on the circular beehive cell. It is admitted, and as a matter of fact must be admitted by all who have taken any interest in the subject, that more than half the number of towers which at one time dotted the land have perished. The Round Tower of Annaghdown, co. Galway, built, according to the "Annals of the Four Masters," in 1238, has wholly disappeared, and even tradition cannot point out the site which it once occupied. The first towers built may have been but very insignificant structures, and in confirmation of this I may state that some of those which remain would be no very extraordinary development of the circular stone cells and churches of the early Irish Christians. I consider that there is no need to go to the St. Simon Stylites Towers in India or Persia or to search in eastern or continental countries for prototypes. I have not the slightest doubt as to the original towers having been simple developments of the circular buildings which obtained at the time.

#### A Curious Theory.

Canon Smiddy published in 1873 a book entitled "The Druids' Ancient Churches and Round Towers of Ireland," in which he puts forward a most peculiar theory respecting the origin and uses of the towers. He says the towers are reed houses—that the idea has come from a reed which grows in marshy ground, and terminating with a conical head is the prototype of the Round Towers, and the use to which he assigns them is that of baptisteries. He bases his argument on the pronunciation of the Celtic word *cloic treach* (*cloic* a bell, and *treach* a house), which he says is confounded with and taken for the *caille* a reed, *each* a house—reed house. In support of this theory he wanders off to Florence, Pisa, and other Continental cities which have had baptisteries attached to the episcopal churches, and tries to establish a similarity of construction and uses between the baptisteries referred to and the Round Towers of Ireland, where none whatever exist. So wild and absurd are the theories put forward that it would be waste of time to follow his arguments for the purpose of showing how groundless they are from start to finish.

#### Supposed Pagan Origin.

The late Very Rev. Canon Ulrick J. Bourke, Professor of Languages, St. Yarlath's College,

Tuam, published a work in 1875, entitled, "The Aryan Origin of the Gaelic Race and Language," in which he devotes the greater portion of two chapters to the subject of the Round Towers. He holds that the Round Towers were built in the early Pagan period by those of the Aryan race who had settled in this Island of Destiny, but that, after the Gospel had been preached in Ireland by St. Patrick, he turned the Round Towers, as he did the Pagan foundations, to the service of Christian rites, and hallowed them by Christian practices and religious associations. This fourth opinion, as he calls it, is that which seems to His Grace, The Most Rev. Dr. MacHale, the most convincing and the best supported by reason and authority (p. 352). His Grace of Tuam was an eminent Churchman, and a guiding star in the domain of Irish politics in his day, but I have never heard or known that he took any interest in Irish antiquarian research, and hence it appears to me that Canon Bourke very easily impressed Dr. MacHale with his plausible theory of the Pagan origin of the Round Towers. Besides, His Grace was fast approaching the end of his long, eventful life at the time the work was published. Canon Bourke brushes Dr. Petrie aside to make room for his own Aryan or Pagan origin idea, and tries to prove from the highly artistic work of early Christian times—for instance, the illumination of the Book of Kells, and other artistically illuminated MSS., as well as highly artistic metal works, &c.—that the Pagan Irish, the progenitors of the early Christians, were all so far advanced in arts and sciences.

#### Unwarranted Statements.

No person who has read Dr. Bourke's book will deny that he was a philologist of distinguished merit, but that is not sufficient proof that he was very well qualified to deal with the subject of the Round Towers, which the following quotations from his work will more fully explain. Canon Bourke confined the practical part of his examination to an inspection of the remains of the Round Towers at Kilbannon, near Tuam, Roscane, near Galway, and possibly one or two others in the immediate vicinity of his home. The towers alluded to are but poor specimens of the Round Towers of Ireland. He goes on to state at page 376, "It appears to the writer that the stones of all the Round Towers have been taken from some two or three quarries, just as in Egypt the stones which went to the erection of the pyramids had been all dug from the same quarries in the Lybian Mountains west of the Nile." This is the most reckless statement which could possibly be made by any writer in face of the fact that in every single instance the towers are constructed with materials—stones—found in the immediate neighbourhood of these structures.

#### Building Materials Used.

In Glendalough, Co. Wicklow, the stones used for general walling are the greenish mica slate (which is the general formation of the local hills and mountains), mixed with granite boulders, which are to be found scattered over the adjoining hills and valleys, carried there by icebergs during the glacier period. In Ardmore, in the Co. Waterford, and Clonmacnoise on the Shannon, the Round Towers are wholly composed of sandstone; in Kilmacduagh, in the Co. Galway, the tower is built with local blue limestone; in Devenish, in Co. Fermanagh, the exterior of the tower is composed of sandstone grit, found in boulders along the lake shore. The interior is lined with limestone, which does not stand the weather so well. And so in every district in Ireland the same thing occurs. The towers are in every case constructed with stones similar to those which are to be had in the immediate neighbourhood of these structures. In the neighbourhood of Kilmacduagh, in the Co. Galway, there are hundreds of acres of blue limestone, naked rock, firm and compact, forming an excellent building stone, wholly uncovered by any earth, furrowed and honey-combed by the action of the weather. Similar honey-combed stones are plainly visible in the interior for the tower foundations. Continuing, he says, "the Pillar Towers of



Ireland are a standing proof of the perfect knowledge in the art of building possessed by the people who at first planned and erected those defiant 'conquerors of time.' Like the book of Kells, they are even to the present hour abiding proofs of the consummate art which left to posterity such enduring monuments in architecture as well as in the art of dyeing and painting. The ancients had regard to



ROUND TOWER AT DEVENISH, CO. FERMANAGH.  
DRAWN BY ANTHONY SCOTT.

durability, and in this aim they have certainly surpassed all modern schools of science and art. Nothing at the present day can be executed with pencil or chisel that would, like them and the pyramids of the ancient world, stand the 'test of time.' This is a fallacy which I must strongly contradict, so far as building construction and building materials are concerned. The towers are not at all imperishable, and when I come to consider the question of construction, I shall deal more fully with this point.

Before Dr. Petrie's time the prevailing

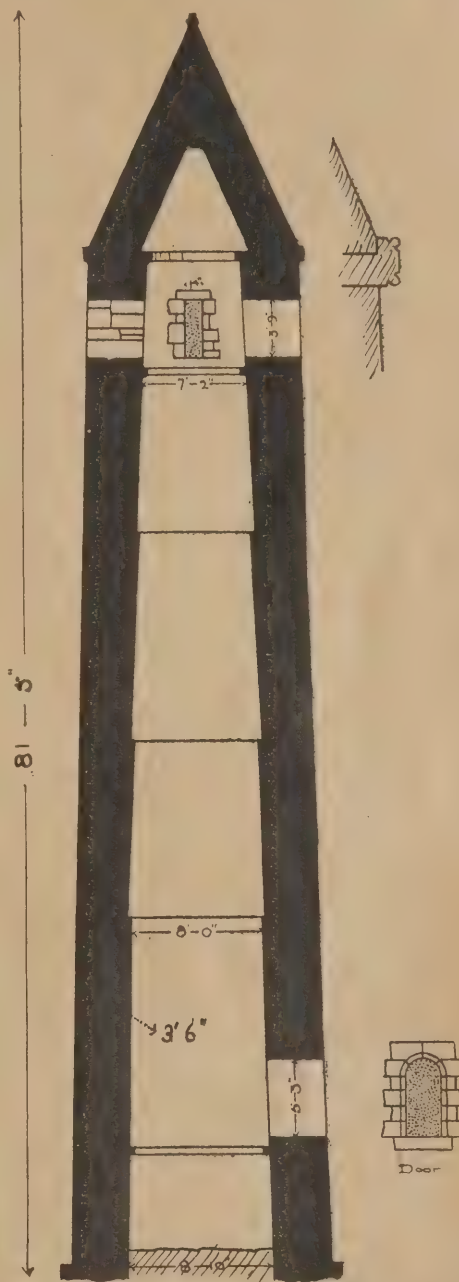
general opinion was that the towers were of Phœnician or Pagan origin, Buddhist temples, fire temples, places of sepulture, &c. Many held that they were of Danish origin, or rather built by the Danes. As regards the Danish origin, it will be admitted that the Danes were never fully established in Ireland, and for the intermittent periods during which they occupied the country, their greater strongholds were Wexford, Waterford, and Limerick. If they were the builders of the towers, it might be naturally expected that in the districts in which they had the strongest foothold most of the towers would be found to exist, whereas the contrary is the case, for there are but very few pillar towers in the counties in which they had their most permanent settlements. If these northmen from Denmark and Scandinavia had built these towers in Ireland, why did they not erect round towers in Normandy, Belgium, Denmark, Jutland, and Scandinavia? It is quite clear that the Danes never had anything to do with the Irish Round Towers, for if they had, structures of a similar or somewhat similar character would be found in other countries invaded by them, but no monuments of the kind are to be found in the countries named. It is therefore manifest that the Danes never built these towers.

We have it on reliable authority of French historians that round towers were built in certain districts of that country in connection with churches, for the protection of church furniture, and in districts only which were subject to the periodical incursions of the heathen northmen. It is quite evident that the building of the towers of Ireland became a necessity during the centuries in which the country was subject to the invasion of these northern hords. Mr. Marcus Kane, M.R.I.A., in a work published by him in 1867, entitled "The Towers and Temples of Ancient Ireland," states that there have been 120 Round Towers in Ireland, and that the remains of sixty can be traced. Mr. Kane has evidently made a close study of the towers, and states that he travelled more than 5,000 miles through Ireland, chiefly on post car, to inspect, measure, and to sketch the then existing remains. His drawings and illustrations are no doubt accurate and well got up, but I fear he has but a poor following as regards his extraordinary theory as to the period and people by whom the towers have been erected. Mr. Kane proposes to show that the Round Towers were built by the Cuthites, as he calls the immediate descendants of Ham or Cham and the progenitors, according to him, of the Scythian race. It would be perfect waste of time to follow Mr. Kane's wild theories, and trace them back step by step to the remote cradle of the Scythian race. As a matter of fact the difference between one theorist and another of the Pagan origin champion writers differs only in detail in ascribing the construction of the Round Towers of Ireland to one branch or other of the human race which had its origin in Asia, and spread itself over the continent of Europe at one period or another. The earliest reference to these bell houses, found in the Irish annals and appended to Lord Dunraven's "Notes on Irish Architecture," occurs in the year 950, and merely refers to the Tower of Slane, as existing at that day, but how long it existed before that date is uncertain. It may be here mentioned that no trace of this tower exists at present, while considerable portions of the monastic buildings and a later Abbey Church with square tower at western end remain standing.

I have always maintained that if we had architects and artisans in pre-Christian times capable of constructing such beautiful cylindrical shafts, progressing from coarse spawled rubble, as at Drumcliffe and several other primitive towers, to coarse hewn ashlar with carved and moulded work, as at Devenish, Ardmore, Kildare, and Timahoe, surely they would not confine their skill to the towers alone; they would in all human probability have left us other traces of their skill and workmanship. But what is the fact? Besides the round towers alone not a single champion of the Pagan origin theory has ever attempted

to point out another single fragment of solid rubble or other masonry work in the whole country which they could say dated from the pre-Christian times.

We have numerous remains of ecclesiastical architecture resembling in every detail the workmanship and material used in the towers, both standing side by side, and presenting the same weather-worn appearance. In many



SECTION OF ROUND TOWER AT DEVENISH, CO. FERMANAGH. DRAWN BY ANTHONY SCOTT.

instances the tower would appear to present later and better-preserved workmanship, as shown by the unerring eye of the camera.

(To be concluded.)

**A powerful Organ** has been placed in St. Bees Priory Church; it has cost £1,400.

**Thirty-two Foundation-stones** were laid at the new Primitive Methodist Schools at Swinton recently by thirty-two scholars. Even this number seems to have been insufficient, as several other stones were laid by local ladies and gentlemen.

**To Develop Walney Island**, Barrow-in-Furness, a new company has been registered, called the Isle of Walney Estates Company, Limited, with a capital of £100,000, all of which has been subscribed to develop the island into a seaside resort.



## THE VICTORIA AND ALBERT MUSEUM.

THE project of extending and completing the South Kensington Museum is not one of yesterday or the day before. It has for many years been recognised by everyone who has given a moment's thought to the matter that the existing buildings at South Kensington are grotesquely inadequate for the preservation and display of the priceless treasures they contain.

As long ago as 1891 the Government of the day inaugurated a limited competition for the completion of the buildings, and Mr. Aston Webb's design was the one accepted. The plans were exhibited to the public in the South Kensington Museum, and many no doubt supposed that the work, already too long delayed, would be put in hand at once. For one reason and another, however, the matter was left in abeyance, and the nation went on buying art treasures for which it had no proper accommodation, and generally allowing affairs at South Kensington to remain in the chaotic condition they had been in for years.

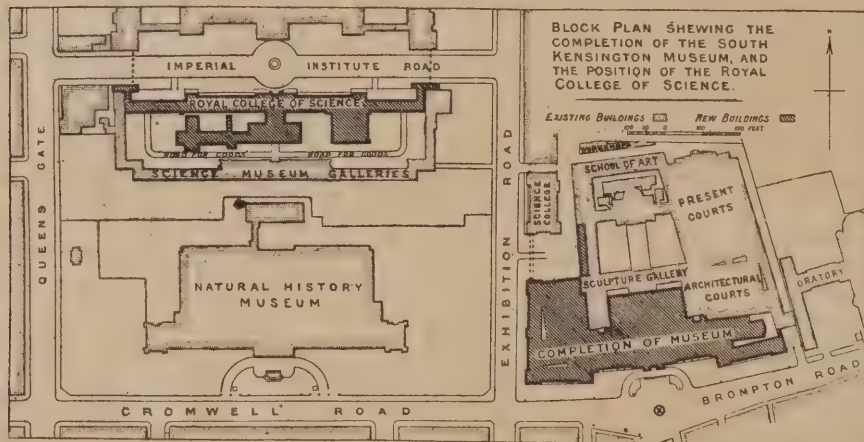
At intervals the Government was plied with questions as to when the work was to be begun, but there was always a reason—or an excuse—for doing nothing. When the year of the Queen's Diamond Jubilee came round there were those who thought that one admir-

able way of celebrating the occasion would be by carrying to completion the scheme in which Her Majesty and the Prince Consort had been deeply interested. This view was put forward in the House of Commons, and some of the members got commendably angry at being again met with a refusal to proceed with the work. The excuse this time was that a Select Committee was engaged in inquiring into the administration of the Museums of the Science and Art Department, and that it would be unwise to do anything till the committee had reported.

It is evident that the new museum has been designed to group with the other important buildings that are its immediate neighbours, so that one shall not dwarf or contrast unpleasantly with another. The block plan on this page clearly shows the relative disposition of the proposed and the existing buildings, and the manner in which Mr. Webb's additions to the museum will combine with the existing galleries.

It may be doubted whether in any other capital in Europe such an example of dilatoriness in respect to urgently needed public improvements could be found. We in this country are notoriously averse from spending money on architecture; the erection of a new public building is always considered to be a matter that may be delayed indefinitely. However, we may congratulate ourselves that at last the long delay is ended. The foundation stone of the new building was laid by the Queen last Wednesday, and we may hope that at last Mr. Aston Webb's noble building, of which a perspective view and the south elevation are given in one of our inset plates, will be completed with reasonable expedition.

The design has been considerably modified since it was first accepted. The central block of the façade has been widened, and the tower which stood there in the original design has been diminished in height, and converted into a pavilion rather than a tower. Generally speaking the modifications have been in the direction of giving the building a more strongly Renaissance character. The frontage of the new museum will be some 700ft. in the Cromwell Road and 300ft. in the Exhibition Road. The whole



of the frontages will be occupied by four floors or galleries. The remainder of the space will be covered by eight top-lighted courts, somewhat similar to those in the existing buildings, opening out of each other, and giving a continuous vista of over 600ft. The main pavilions will be marked at the angles with cupolas, and the great central entrance by an open lantern some 150ft. high. Light will be obtained by long rows of square-headed windows, kept well up to the ceiling, those on the first floor being divided by niches and statues representative of the treasures contained in the museum. The cupolas will blend with the pointed roofs of the Natural History Museum. A space will be reserved, in the centre, opposite the entrance, for a sculptured representation of the Queen and the late Prince Consort.

It will be seen that the erection of the Victoria and Albert Museum and of the Royal College of Science (another of Mr. Webb's works, for illustrations of which see the BUILDERS' JOURNAL and ARCHITECTURAL RECORD for April 12th) will complete a splendid group of public buildings, symmetrically arranged and forming a combination unique in London and not easily to be matched in any city in the world.

## Keystones.

**A new Congregational Chapel at Hollybush** is to be erected at a cost of £380. Mr. W. S. Williams, of Tredegar, is the architect, and Mr. W. Morgan is the builder.

**A large Block of Warehouses** is to be erected in Clifton Street, Finsbury, London, E.C. at a cost of between £21,000 and £26,000. The premises are to be built from designs by Mr. E. Willey, architect, of 33, New Bridge Street, London, E.C.

**Stained-glass Charter Memorial.**—It was decided at a public meeting at Kingston-on-Thames to place a stained-glass window in the Town Hall as a permanent memorial of the seven hundredth anniversary of the granting of King John's Charter to the borough.

**A Livingstone Monument.**—Mr. H. M. Stanley, M.P., has issued a circular asking for subscriptions for the purpose of raising a permanent memorial to the memory of Dr. Livingstone on the spot where the great missionary died. He proposes to raise £5,000 for a large monument in bronze.

**A Northern Approach to the Tower Bridge.**—At last week's meeting of the London County Council it was agreed to contribute £7,000 towards the cost of purchasing 60 to 78, Mansell Street, for the purpose of widening that thoroughfare so as to form a northern approach to the Tower Bridge.

**Proposed Library at Weston-super-Mare.**—The Urban District Council have applied to the Local Government Board for sanction to borrow £2,500, to complete the amount required for the erection of a free library and museum. An inquiry into the application was held last week, at which it was explained that the total cost of the building would be £6,000.

**Discovery of Thirteenth Century Remains.**—The excavations for the chapel wing of the Archi-episcopal Palace at Canterbury, now in course of erection, have revealed some thirteenth century remains of the monastic buildings, including portions of a elaborately arched chamber. The palace is being constructed to the westward of the cathedral, and is of Early English design.

**Hospital Extension at Wallasey.**—The Joint Health and Works Committee of the Wallasey District Council have adopted a scheme for the extension of the infectious disease hospital, and have resolved to apply to the Local Government Board for power to borrow £9,030. They propose to purchase 12,875 square yards of land in Mill Lane, Liscard, for £2,630, which includes contingencies, also to provide a works dépôt, which will cost £6,400.

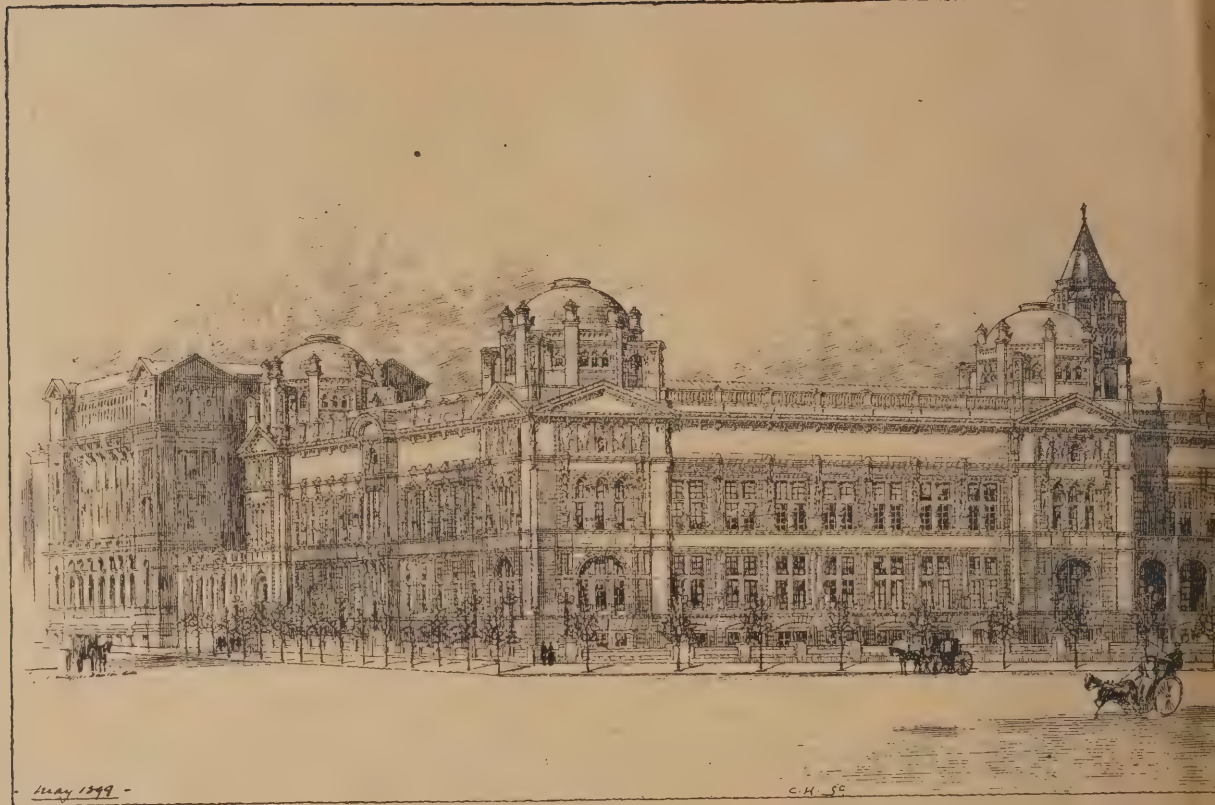
**Smoke Nuisance at Halifax.**—Messrs Fletcher Bros., dyers, of Raglan Street, were summoned before the Halifax Borough Court last week, at the instance of the Corporation, for allowing dense black smoke to be emitted from the chimney at their dyeworks. Mr. Clarkson, for the defence, stated that within the last two years the firm had expended £1,000 in their endeavours to obviate all cause for complaint, and they were now incurring an additional expenditure of £500 a year in purchasing coal of a superior quality. The Bench made an order for the abatement of the nuisance within one month.

**A New Bridge and New Sewers wanted at Keighley.**—A Local Government Board inquiry was held at Keighley last week to hear the application by the Corporation for power to borrow about £17,000 for public works. The Corporation sought £8,260 for a proposed bridge in Queen's Road improvements in Oakworth Road and North Street, and the paving of Bradford Road with granite. They also asked for £4,558 to construct about twenty sewers of various lengths in Moss Carr, Dalton Lane, Skipton Road, &c., and for £4,500 for land in Lawholme Lane adjoining the Midland Railway, purchased from Messrs. W. Summerscales and Sons, Limited. No objection was raised to the application.



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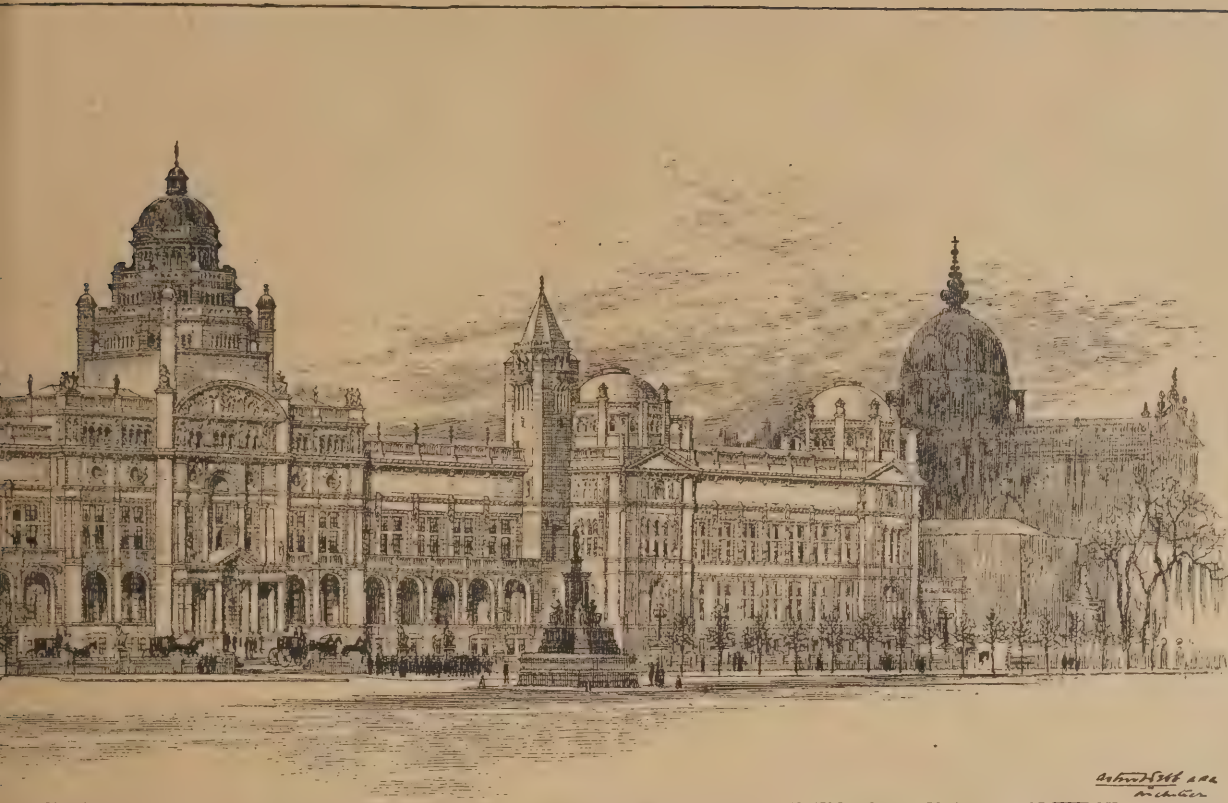


THE VICTORIA AND ALBERT MUSEUM.

SOUTH ELEVATION, TOWARDS CROMWELL

SCALE





MUSEUM —  
THE COMPLETED BUILDINGS —  
1899

J.C. Webb 1899  
Architect

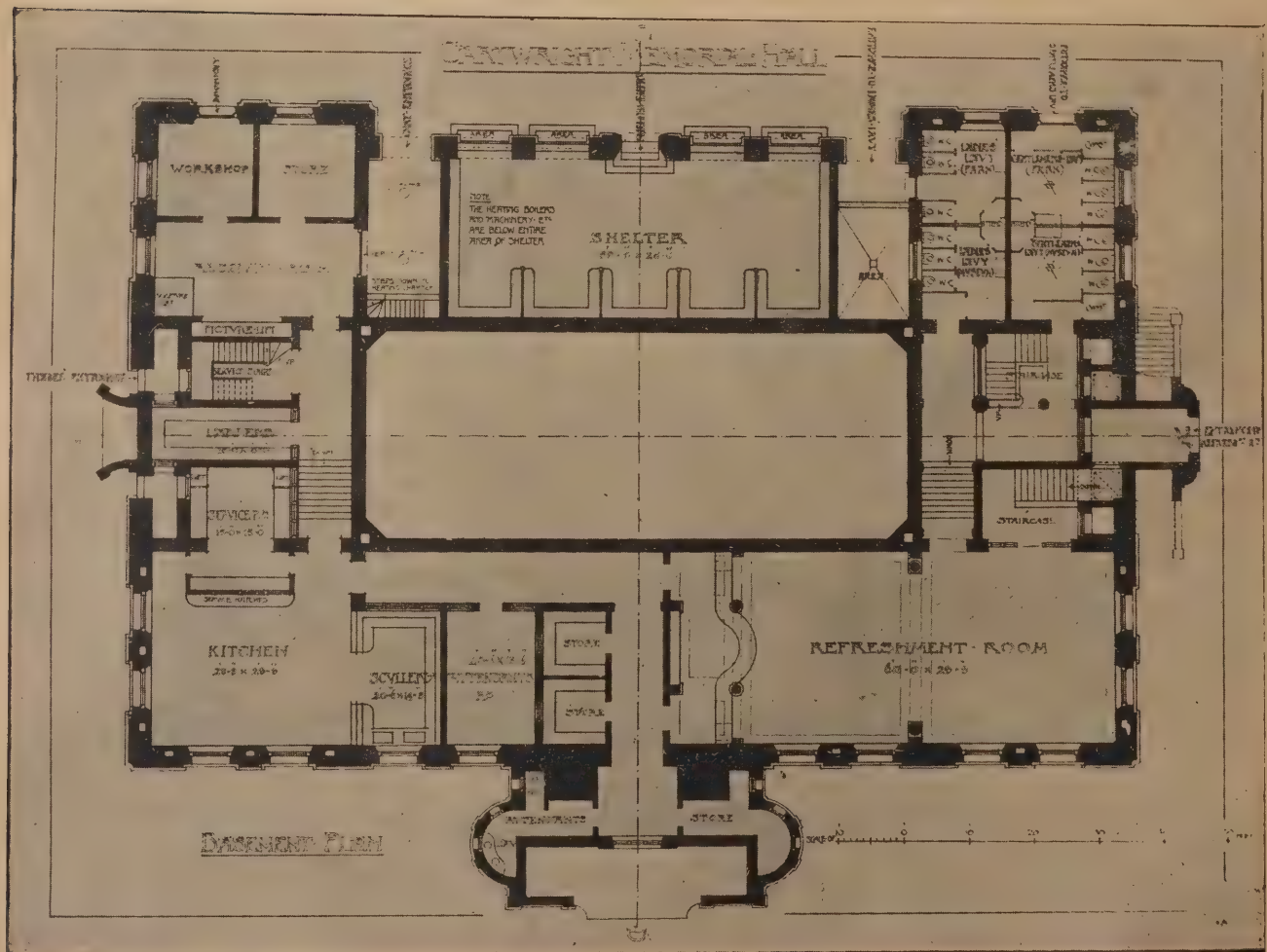
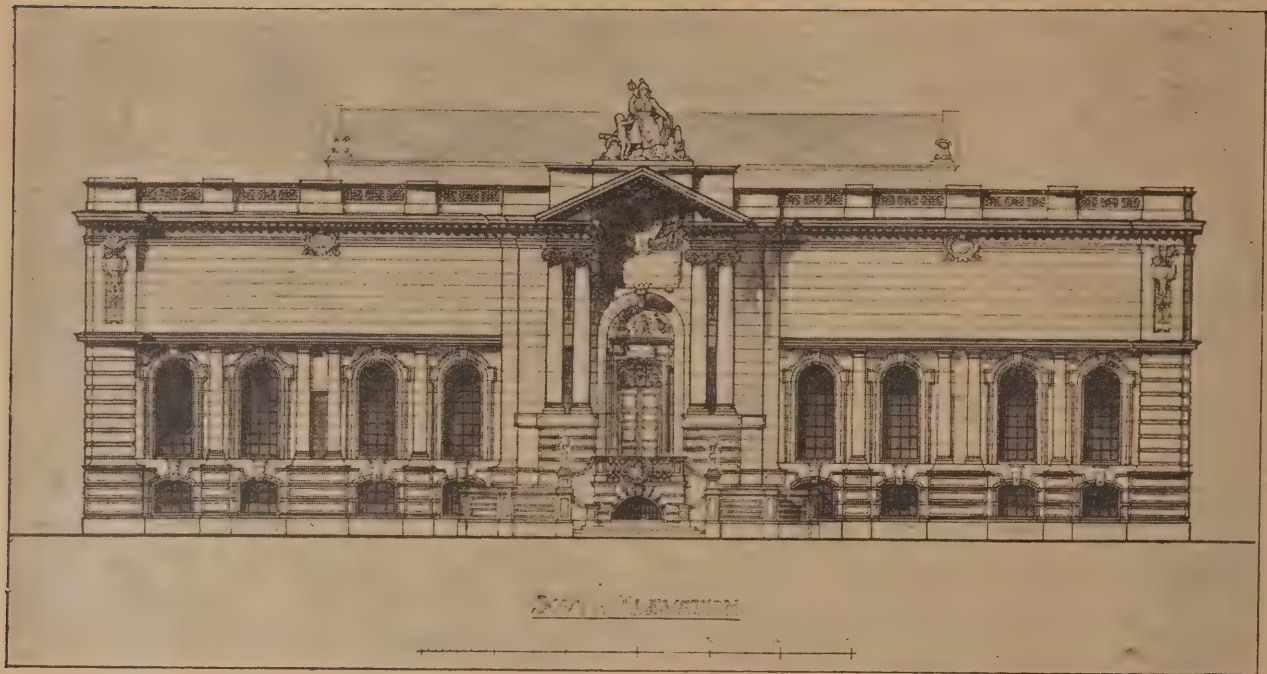


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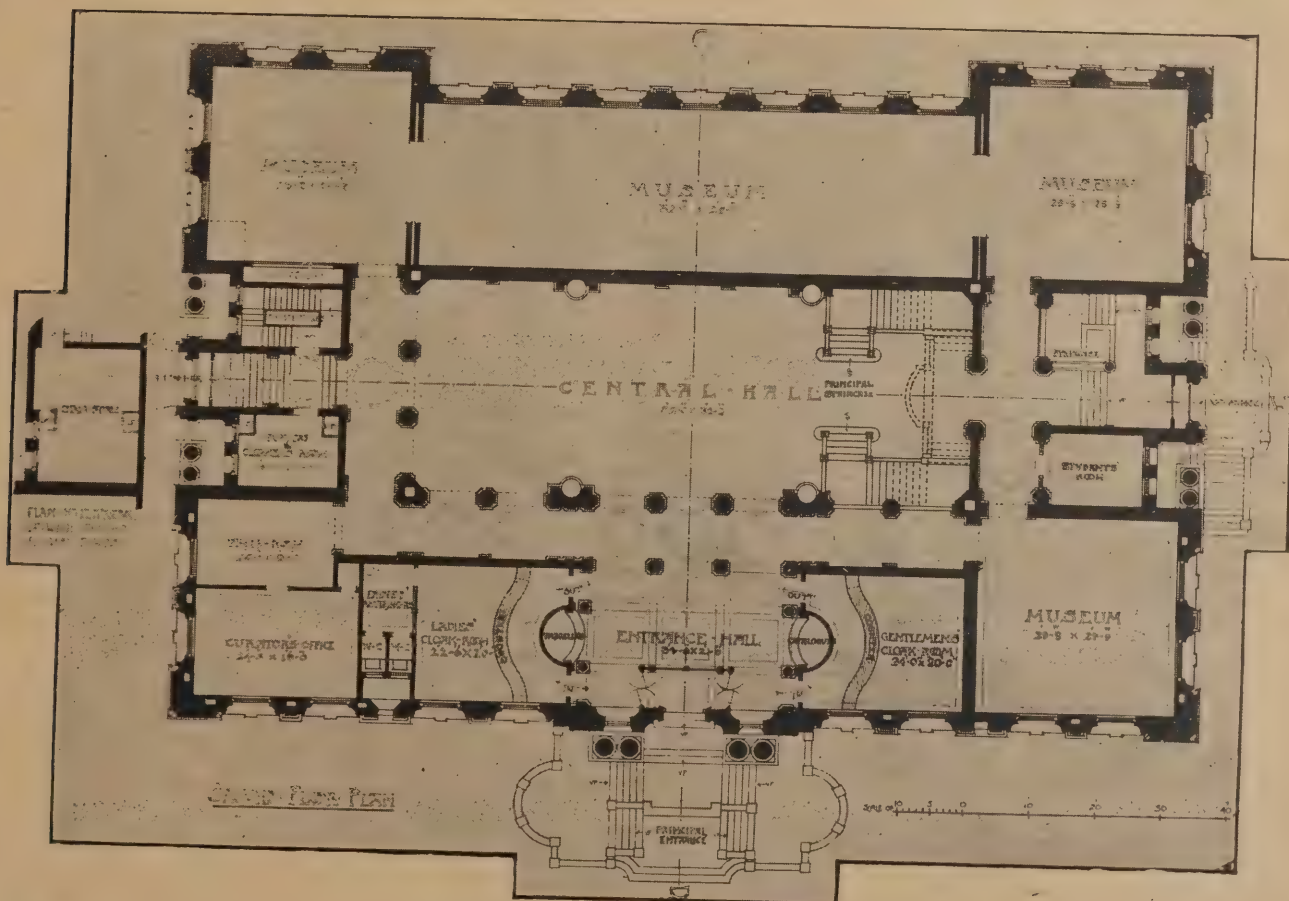
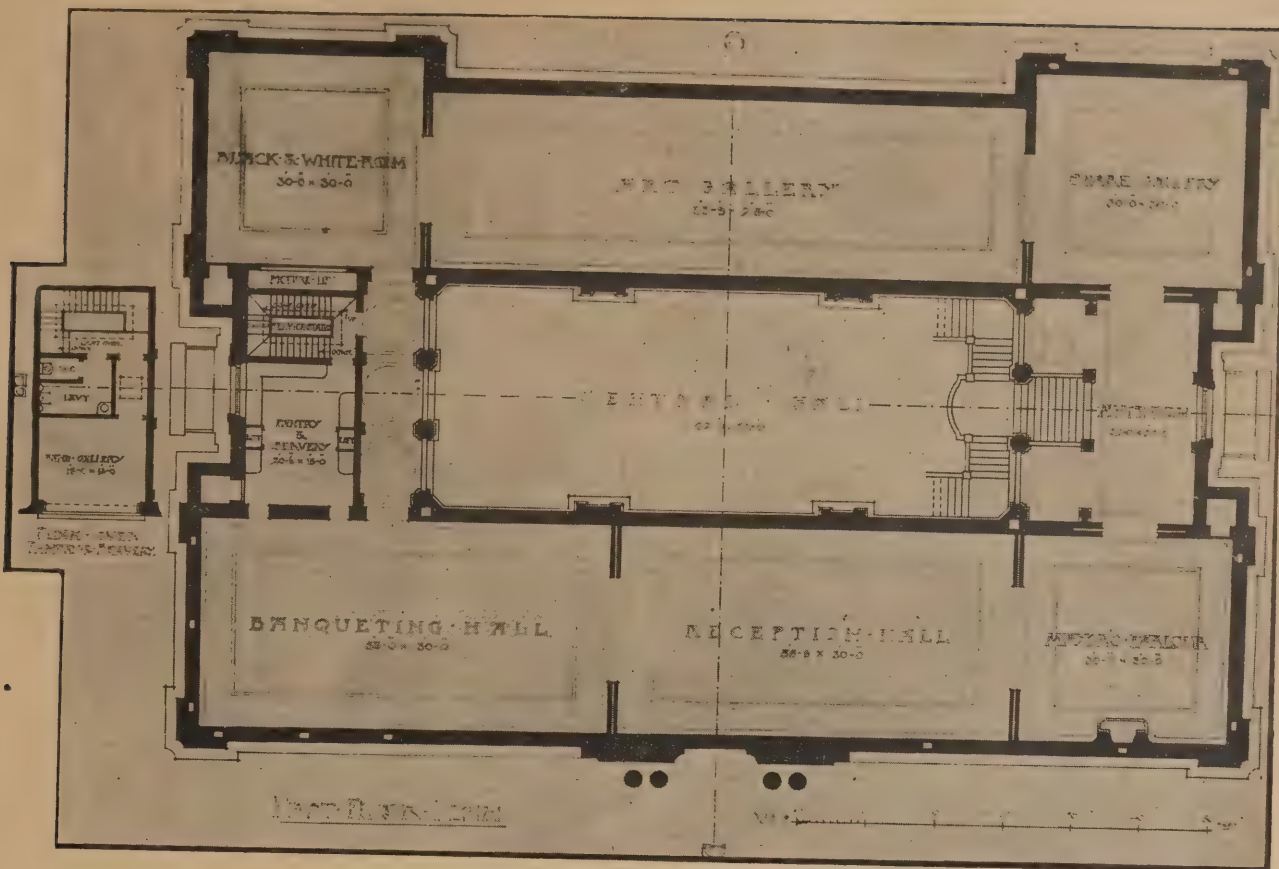


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## Correspondence.

## REGISTRATION OF ARCHITECTS.

*the Editor of THE BUILDERS' JOURNAL.*  
 OGHEDA.

DEAR SIR,—In your issues of the 3rd and 10th inst. you have very kindly given space to two most excellent letters on the above subject. In my mind you are entitled to the thanks not only of your correspondents but also of the whole architectural profession for opening the columns of your valuable and progressive journal for the discussion of the subject. In serving your own opinions for the present on the question of registration you have acted wisely.

Whether the benefits or advantages to be derived from registration be much or little I do not see in what way it can be injurious. I have never heard one solid argument put forward against registration. One of the strongest arguments I have ever heard advanced against it was that in the first instance registration would include a large number of incompetent practitioners and place them on an equality with the best men in the kingdom. I grant that a considerable number of undesirable men would have to be included, but I contend that no human law could possibly place such men on an equality with the leaders of the profession. The distinction would be as great then as it is now, and as it will be in all professions, whether registered or unregistered.

Registration never contemplated including within the ranks of the profession any men who were not wholly engaged in the profession of architecture. It surely never contemplated including such men as your correspondent "architect" refers to. Even if a considerable number of men having but a poor claim on the profession had to be admitted in the first instance (and such a contingency could not possibly be avoided in any scheme of the kind), they would in the natural course of events die out, and then the profession would have a clear future before it.

I can well believe "Architect's" statement when he says that a plumbing job had been tried out on his specification. The writer would quote several instances of the kind, and give names and particulars. I have a local newspaper in my possession, not two weeks old yet, which reports the proceedings of an annual district council, who directed their list of works—an unsuccessful builder—to prepare plans for two houses, although an architect, I.B.A. has his office in the next street, and is well known to the council as a first-class architect.

So far the opposition of the Council of the I.B.A. has been a mystery to me. I can well understand that the members of the Council are far beyond and above the reach of the ordinary man—incompetent architect. This Council could not possibly take a commission from one of these distinguished gentlemen in a hundred years. But it should be borne in mind that the Institute has branches all over the kingdom, and that the members of these branches or affiliated societies are by no means drawn from the inroads which are being made in the profession by incompetent men having no claim whatever to the title "architect."

Reference has been too often made to the inherent social status enjoyed by the professions of law and medicine. I thoroughly agree with "Architect" when he says that notwithstanding the difference between the status of one of these professions and the profession of architecture, the responsibilities of the architect are greater than either. The mistake of a doctor dies with his patient; the mistake of a lawyer can be always attributed to the clinging of the bench or the jury; but the mistake of an architect is always before the public gaze.

The responsibilities of the architect cease with the final certificate. He gives his certificate when to all appearances the work is satisfactorily done. But by-and-by the low sashes rattle just a little; a slate or two and a few ridge tiles are blown off in a gale; a smoke flue fails to act satisfactorily; and a slight settlement may possibly begin to show

itself; timber flooring laid in December shrinks somewhat in the following July, &c. Is the builder blamed for these defects? Nothing of the kind. Did he not carry out the works according to plans and specifications and under the direction of the architect? Neither the client nor the public will blame the builder, but the humblest member of the community will criticise the work of the architect and point out its defects.

The trying and stringent examinations to qualify for membership of the Institute are to be highly commended; but are these examinations calculated to cope with the evils complained of? I say most decidedly they are not. So long as the profession is open to all comers the evil must remain, and in reality it is bound to increase rather than decrease as time advances and technical education progresses. Plans, elevations, sections, details, specifications, bills of quantities of every class of structure in the kingdom, are now published weekly in journals within the reach of all. Drawing and building construction are now taught in various Technical and Art Schools throughout the country, at night as well as in the day time, to help the working classes. What is there, I ask, to prevent any steady, intelligent, ambitious artisan connected with the building trades from becoming an architect under such a condition of things as these? As a matter of fact there is nothing to prevent him, and who could blame him for taking advantage of such favourable facilities?

If then, it is not to be registration, let it be something equally effective. But that some protection of the kind is urgently required, few architects, at least provincial architects, will, I think, deny. A Registration Act has been passed by some of the State Assemblies of America with highly satisfactory results, and it is expected that it will be but a matter of a little time to have it extended to all the States. The Central Society of Architects of Belgium have had before them, at their monthly meeting in Brussels on the 5th inst., a report by a Commission appointed some time ago to inquire into the subject of State recognition and the formation of a "National Professional Union of Architects."

I trust, Mr. Editor, with your kind permission, that we may be favoured with the views of some of the leading lights of the profession now that the subject is open.—Yours obediently,  
 "TRANSITION."

*To the Editor of THE BUILDERS' JOURNAL.*

LEWISHAM, S.E.

SIR,—I am glad that you have opened your valuable columns for the opinions of the members of the profession on this subject, for it is a most important one, both to the architects themselves, and to the public generally; it is a question that must be very shortly definitely answered, and the answer from all *bona-fide* practitioners will be, I am sure, an overwhelming "Yes" in its favour.

The Royal Institute of British Architects (of which body I have been a member for eighteen years) have, for some inscrutable and feeble reasons, always opposed registration. I presume that such opposition was caused in the first place simply because the Institute did not originally suggest it, but left it to a much younger and more vigorous society to do so. When the question came up before a very small meeting of the members of the Institute, it was suggested (apparently much against the Council's wishes) that voting papers be sent to every member of the Institute to obtain opinions on the subject. This was done—but, alas! the voting papers were drawn up in such tangled and confused terms that it was most difficult to understand whether one was voting "Yes" or "No" in answer to them, and I verily believe that numbers of "Yes" votes were lost by this means.

Registration would undoubtedly enhance the status of an architect in the eyes of the public. Take, for instance, the case of the accountants, how vastly they have improved their position since they became "chartered accountants," and what esprit-de-corps this has given them. These gentlemen even sneer at an archi-

tect's position, for as an accountant friend of mine truly but bluntly says, "any bricklayer, undertaker, or house agent, without any training whatever, can label himself 'architect,' but they are prohibited by law from calling themselves 'chartered accountants,' hence the accountant is much more respected by the public than an architect is."

Again a chartered accountant can enforce his statutory charges at law, an architect cannot do so, for we have no statutory scale of charges; it is true the Institute have issued a "Schedule of Professional Charges," but this schedule is merely a suggestion from the Institute, and like most of its other suggestions it is sneered at by the public authorities and not recognised by Her Majesty's judges.

Another strong point in favour of registration is, that architects' pupils would receive a much better training than they obtain now; for if it were known that a pupil *must* undergo some examination, before being admitted to practice, his master would be obliged to give him much more attention than is usually given now, and teach him something at least to fit him for such examination. How many pupils are personally taught by their masters now? The unfortunate pupil at present is, as a rule, a mere drudge in the office. After having paid a (sometimes) heavy premium he is generally employed to save an office boy's expenses, and put on to copy and post letters, keep the 'call and petty cash books, and run errands, and, as he gets older, to make tracings; but if he wants to learn anything of his profession he is compelled to join classes outside the office, instead of learning there what his master had agreed to teach him. In large offices this evil is worse than in smaller ones, as in the former case the unfortunate pupil is not only the drudge of his master, but has to fag for the assistants as well.

In no other profession do masters so much neglect the real professional education of their pupils as they do, generally, in that of architecture. The lawyer's articled clerk is a superior person in the office, and a confidant of his master; the young medical student is in intimate and confidential touch with some skilful and qualified practitioner, who is anxious to help and teach him personally; but then both the lawyer and the doctor belong to "registered" professions, and hence their pupils receive much better training than that of the unfortunate young architect.

If we could galvanise our feeble Institute into active life, and induce it to open its eyes to the signs of the times, and to the earnest endeavours of the younger men in the profession (who also seem to be the more active and clever men) to raise themselves and their art to the position they and it are entitled to; then we should hear of no more opposition to registration from within our own body, but a cheerful alacrity in its acceptance.

The action of the Institute may be summed up as a rule as one of "meddle and muddle." Any suggestion it makes is ignored in nearly all quarters, but there is one most dangerous action that the members of the Council have just arrogated to themselves—viz., the power to select and appoint architects as competitors for important public works. This power, I understand, the Council has just exercised, and has selected six architects to compete for the rebuilding of the Old Bailey in the City of London—a most important undertaking. The Chairman at the last meeting of the Institute stated that it was "public knowledge who these gentlemen were;" but I have not yet found any one of the public who is acquainted with the names of these "chosen ones."

Surely it must be a most unfortunate thing for young, or comparatively unknown, men, that the Council of the Institute should be entrusted with the power of selecting competitors; for it means the shutting out of all but men with well-known names, as only such would be known to the charmed circle of "the Council." Surely, apart from the inevitable favouritism, such powers of selection, if generally exercised, would reduce our already poor Architecture to within still narrower limits of style, and destroy all fresh-



ness and originality of ideas that we do occasionally obtain from outsiders, who are neither "Members of Council" nor "well-known architects." Public competition, when fairly conducted, is wholesome and useful; it has been the means of bringing forward many poor, unknown but gifted men to the front, but if this wholesome trait is to be strangled by the efforts of some publicly unrecognised "Council" or other, then our state is parlous indeed.

Some vigorous action should be taken at once to obtain a really reliable and representative return of the opinions of every practising architect throughout the Empire on the important subject of registration, and if its great advantages were properly set out, again I say the answer would be unanimous in its favour.—Your obedient Servant,

HORACE T. BONNER, A.R.I.B.A.

## Enquiries Answered.

*The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.*

### PREPARATION OF WALL FOR PAPERING.

To the Editor of THE BUILDERS' JOURNAL.  
LEEDS.

DEAR SIR,—I should be glad if your correspondents could suggest a remedy to improve a new plaster wall.

It has been injured by wet driving through from outside; this has been remedied, and plaster is dry, but is covered with a precipitate of lime or soda. The wall was built with sea sand.—Yours truly,

"T. C. G."

The efflorescence on the surface of plaster wall is doubtless due to the sea sand used for building the wall. Allow the wall to stand bare as long as possible before papering it. While bare clear off daily any efflorescence which may arise on the surface. In time the amount of efflorescence will decrease, and, when scarcely perceptible, well scrub the wall with a dry brush or a coarse cloth, and then brush the surface with a solution of Parian cement. After this is dry you may proceed with the papering without fear of further injury or discolouration of the surface. If time will not permit of waiting for daily dusting, &c., free the surface from all existing efflorescence, then give the surface a coat of thin patent knotting, and then paper the wall.

W. MILLAR.

### MEASURING-UP CHURCHES.

To the Editor of THE BUILDERS' JOURNAL.  
LONDON, E.

SIR,—I have lately made various studies of one of the historic churches of Kent, one of them being a measured plan. This is the first time I have taken in hand a building of this class, therefore I have had a number of difficulties. For instance, when I have taken the position of the nave pillars and then the buttresses I have found that they do not come directly opposite one another. No doubt this is because I have not gone about my measuring in a professional kind of way. Another difficulty is how to get the thickness of the various walls when there is no opening by which I can get a through dimension. Can you give me directions how to go about the measuring-up of these buildings?—Yours faithfully,

"NESWOR."

It is by no means uncommon, when measuring Gothic work, to find that piers and buttresses do not come exactly opposite each other. It is not an easy task to measure the plan of an old church, as usually from various causes, walls, &c., which appear to be at right angles to one another, are not so. Supposing the church you are measuring to consist of nave, aisles, and chancel, we should suggest first accurately plotting the nave piers, then taking a centre

axial line right down the centre and from certain points, marked on the floor in chalk, taking cross diagonal measurements to the principal features of the side walls as piers, windows, &c. If possible continue your centre axial line through church wall into churchyard, and thus form a connecting link with the second operation, namely, setting out the exterior. To do this stake out a rectangular figure outside the church and measure the offsets to buttresses, porch, &c. You can, of course, only accurately take the thickness of a wall wherever a window or doorway occurs, and it is rare indeed when no opportunity whatever occurs; to make an absolutely accurate plan you will have to get the thickness at a great many points, in fact, it is better to do so at every possible position. If there is any stone vaulting or roof work to be planned, procure a lead pointer and, having chalked the point, suspend it from the centre of the boss (stove rib or whatever part of the roof you desire to plot) until it touches the floor of the church, when you will be able to accurately plot the chalk mark on your plan. In measuring stone vaulting it is best to thus draw out in chalk a plan of the vault above on the pavement below.

H. I. T.

## ASPECT AND SOIL

IN RELATION TO

### THE DWELLING-HOUSE.\*

BY V. G. POORE, F.R.C.P.

(Concluded from page 221, No. ccxviii.)

I NEED hardly say that even the isolated cottage must be under control as regards cesspools or any underground sanitary abominations, which may be an unseen danger to the neighbours, but I am very strongly of opinion that, on the grounds of the health and safety of the public, builders of isolated dwellings ought not to be harassed by by-laws, which are in their case merely a source of delay and increased expense.

In these days of railways, trams, motor cars, telegraphs, telephones, and bicycles, machines which have practically multiplied time, and, to a great extent, annihilated space, it ought to be possible for populations to spread out and to live more decently and wholesomely than is the case in crowded cities.

It ought to be possible to build detached houses in increasing numbers, and as a consequence to give to the chief rooms of the house any aspect which may be desired.

The question of Soil in relation to the dwelling is necessarily one of great importance.

Assuming, in the first instance, that the soil selected is a pure soil, I may as well say that I have no evidence to bring before you that in the matter of wholesomeness there is any difference between rocks, sand, gravel, or chalk, and I am not aware that there is any evidence that either of these soils gives rise to unwholesome emanations.

The interstices of all porous soils are filled with air and a certain excess of carbonic acid, which may be considerable if there be much organic matter in the soil, and a house with lighted fires necessarily tends to aspirate the gases from the earth upon which it is built. Now I am not aware that there is any real evidence to show that damage has ever resulted to persons from the gases emanating from a pure soil.

In cities, where organic filth has been buried in the soil for ages, it seems likely that the gases of putrefaction may gain access to the house. In London we know that when the soil is opened up there is always a stink of illuminating gas, and obviously, it is desirable to keep that out of our dwellings. Further, we know that impurities from sewers and cesspools are sure, under the existing order of things, to leak into the soils of populous places. Therefore, the model by-laws insist that the ground upon which a house is built shall

be covered with a regulation thickness of concrete. This is a reasonable provision in a populous place, but I would remark that, so soon as a crack or pinhole is accidentally made in the concrete, the alleged security given by it vanishes. In country places which have adopted the model by-laws, the covering of pure chalk or sand or gravel with concrete is equally insisted upon before a cottage can be built. This has the effect of increasing the cost and rent of the cottage, unless it be thought advisable to make the floor of concrete finished with cement. It goes without saying that for houses built in low-lying damp situations, an impermeable layer of concrete is necessary. The above remarks are intended to apply to concrete as a barrier against the gases in dry soils.

The soil upon which a house is built influences the comfort and therefore the health of the dwellers. On a dry soil it is possible to take exercise in comfort, while on stiff clay soils walking or any other exercise in the winter months is a disagreeable and dirty proceeding.

It is quite possible to build a house upon clay which shall be perfectly dry, and through clay unwholesome gases find it difficult to travel, which is a theoretical advantage. Fogs are frequent on clay lands, but it is not clear that an occasional pure fog does any harm to a healthy person. I say nothing of the foul irritating fogs of London, which are dangerous to many and deadly to not a few.

The nature of the soil upon which a house is built has great influence on the ease with which the waste drainage waters are got rid of. On porous soils, such as sand, gravel, and many chalks—they soak away, and hence there has been a great temptation on such soils to construct soak-away cesspools, which in the days of our ancestors, before the use of water-closets and fixed baths, or even daily "tubs" became general, were little likely to contain infective matter, and continued to act efficiently for years. Modern sanitation has raised the amount of waste water enormously, and the invention of the water-closet has greatly increased the danger and foulness of the waste waters. It is probable that the amount of sewage to be dealt with in country houses, has, in modern times, as compared with the last century, been multiplied by ten, and it is now quite common for the owner of a biggish country house with stables to have to grapple with 1000 gallons of sewage per diem, or 160 cubic ft., an amount which will stand about an inch high on an area measuring 50ft. in length and 40ft. wide, or which, in a month, will fill a water-tight cesspool measuring 24ft. by 20ft. and 10ft. deep—the dimensions of a fine dining-room—and containing, when full, more than 130 tons of foul liquid, which will all have to be raised and distributed. On a porous soil such an amount of fluid if delivered on the surface of the ground, may be got rid of with ease and without offence, if the few pounds weight of excreta (12lbs. at the outside) of the twenty-five people living in one country house be dealt with separately.

On a clay soil, especially in winter, a very much larger area of ground must be used for the waste water.

The foulness of the River Brent, of which we have heard so much, is probably due to the fact that the foul liquids on the clay soil through which it flows, tend to run off the surface instead of percolating through the soil and thereby becoming purified.

I must not pursue this subject further, as it is not my intention to discuss the question of slop-drainage and sewage treatment, which I have dealt with at length in my little book, "The Dwelling House." I will merely add that, whether a house be on a permeable or impermeable soil:—

1. All waste fluids should be dealt with before putrefaction sets in.

2. They should be delivered on to the surface and not beneath the surface of the ground.

3. They should never be allowed to collect in cesspools which encourage putrefaction, and merely postpone the inevitable work of distributing them over the ground.

\* A paper read before the Architectural Society on May 12th.



## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,  
May 24th, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

**St. Paul's Churchyard.** A FEW weeks ago we pointed out the undesirability, from an aesthetic point of view, of rebuilding the premises that have been pulled down at the Cheapside corner of St. Paul's Churchyard, and advocated a still further demolition of the houses by which the



CARVED OAK PANEL. BY A. CLAYENDEN MOTTE.

Cathedral is so closely hemmed in on the north side. The same idea is being put forward in other quarters. To the aesthetic argument is added the important one of public convenience. "The roadway, now barred and useless for the passage of vehicles, is," says Mr. Deacon, in a recent letter to the "Times," "the natural continuation of Cheapside and Ludgate Hill, and I cannot help regarding it as extremely discreditable to the Corporation that they should have discouraged every effort and ignored every representation to widen and throw it open for traffic." The writer further states that the continuation of the great main artery of London traffic along the north side of St. Paul's Cathedral was a part of the scheme formulated by Sir Christopher Wren for laying out the thoroughfares of London after its destruction by the Great Fire of 1666. It is rarely, indeed, that the chance of carrying out so splendid an improvement in the City presents itself; the Corporation will win the gratitude of all who care for the dignity and beauty of the Metropolis if they decide to avail themselves of this golden opportunity.

**A Shocking Example.** THE other evening, in the House of Lords, the Marquis of Lothian asked Her Majesty's Government whether they would cause a model of the proposed new buildings for the War Office to be made and placed in the precincts of the House for the inspection of the members of both Houses. The necessity

of having such a model, he said, was shown by what happened in the case of the new Admiralty buildings. When a model was produced of the plan first accepted, it was found that the proposed buildings would be such monstrosities that an entirely new plan had to be resorted to. He said that the present Admiralty buildings were absolutely unworthy of the office they had to house. The architecture was weak where it ought to be strong, and there was at the top of the building a sort of trimming, which appeared to be taken out of a child's box of bricks. When the new Admiralty was finished, it would not be large enough for its purpose, and it would be necessary either to add another storey, or to provide a fresh building elsewhere.

**The Reply.** In reply to this plain-spoken criticism, the Earl of Pembroke said he was afraid he could not give much comfort to his noble friend. The First Commissioner of Works did not see his way to grant the request with respect to a model of the new buildings. At the same time, as, perhaps, the noble lord was aware, the plans and elevation of these proposed new buildings had been in the tea-room of the House of Commons for some time, and he was quite sure that his right hon. friend would be glad to show them to any noble lord who took an interest in the matter. With respect to the present new Admiralty, one must remind his noble friend that that magnificent edifice was the result of a committee of the House of Commons. This did not encourage his right hon. friend to carry on the same procedure with respect to the further buildings to be erected as was done in the case of the Admiralty.—The Marquis of Lothian said that the plans and elevations were absolutely of no use for the purpose.

**Two Panels.** THE two panels in carved Italian Walnut, here illustrated, are for an important work by a leading firm of West End cabinet-makers. They have been carried out by Mr. A. Clayenden Motte, of 14, Glynfield Road, Craven Park, N.W. This work is now in one of the finest collections in this country, and is one out of many high class works executed by Mr. Motte, who has had an extensive connection with the Furnishing and Decorative trade. Judging from the specimens of "artistic" furniture one sometimes sees, there would seem to be abundant scope for architects with a taste for this kind of work to devote their abilities to the beautifying of our homes.

**Dr. Syntax Inn.** ANOTHER interesting link with the past is about to be lost. The old-fashioned hostelry at Prudhoe, called Dr. Syntax Inn, is to be demolished to make way for the erection of an inn of the modern type. The house was one of the oldest on Tyneside, and formed one of the most picturesque objects in the locality. It was formerly one of a row of thatched buildings, and about one hundred years ago it was rebuilt. The work of demolition has revealed that scarcely any iron was used in its construction, the woodwork of the roof, doors, and windows having been put together with bone or oak pins and wooden couplings. Prudhoe is a prosperous village, rapidly growing in population and wealth, and its development is shown by the numerous modern buildings which have been erected.

**The Alfred Memorial.** A PETITION, signed by Lord Ashcombe, Mr. Melville Portal, Mr. W. W. Portal, Mr. Montague G. Knight, Mr. F. Willan, and Admiral Field, M.P., has been sent to the Ecclesiastical Commissioners, relative to the proposal to erect a museum in the grounds of Wolvesey Castle, Winchester. The petition asks that the Ecclesiastical Commissioners will decline to alienate any portion of the Wolvesey grounds for the purpose of erecting a hall or museum as a memorial to King Alfred, as in the possible event of the palace being at a future date required for the Episcopal residence, the alienation would be a grave inconvenience. They think that the erection

of a hall or museum to contain a non-existent collection of Anglo-Saxon antiquities is in itself an anomaly, and if such collection should be forthcoming, it is in London and not in a small provincial town, however historically famous, that the student and the antiquarian would prefer to locate it. To place any such edifice among the venerable walls of Wolvesey is, they say, both incongruous and inappropriate. In answer to this petition, the Ecclesiastical Commissioners have assured the petitioners that they have no intention of taking any steps for alienating any part of the Wolvesey Palace grounds.

### Tudor House.

THE fate of this historic building is not yet finally settled, but there seems to be a very good chance of its being rescued from demolition. At the meeting of the London County Council last week the recommendation to pull it down gave rise to considerable discussion. Mr. R. Seager said that professional men and members of antiquarian societies who had seen this house were unanimously of opinion that to pull the building down would be a loss not only to the neighbourhood but to London. In answer to this Mr. Torrance said it was nothing less than a crime to attempt in this crowded neighbourhood to rob the people of part of an open space by retaining a ramshackle house which contained nothing really of historic interest. Colonel Rotton said the only thing of interest about the



CARVED OAK PANEL. BY A. CLAYENDEN MOTTE.

house was the staircase, and it would be a sin for that only to retain a house occupying so much ground which could be used by the public. It would cost at least £500 to put in decent repair, and that sum of money would be better spent in laying out the ground. In the end it was decided to refer the recommendation back to the committee, and the house is saved—for a time.

### Rival Building Stones.

WE mentioned, some time back, that the architect of the Colchester Town Council had suggested the use of Owen stone, in the place of Portland stone, in the construction of the Victoria Tower of the new Town Hall, as by doing so about £300 would be saved. A sub-committee was appointed to visit the works of the Owen Stone Company, at Worplesden. This visit does not seem to have impressed them favourably with the value of the stone, as on their return they stated they were unanimously of opinion that they could not undertake the responsibility of recommending the use of the Company's material in the tower of the new Town Hall. The Town Council were then between two stools; they did not know whether to decide to use Portland stone and spend £300 more than they desired, or use Owen stone and risk the consequences. At last they came to the conclusion that by a little alteration in the method of construction, a great reduction may be made in the total cost, which will enable them to use Portland stone.



## Professional Practice.

**Dundee.**—The foundation stone of St. Roque's Church was laid recently. The cost is estimated at about £2,000. The plans have been prepared by Mr T. Martin Cappon, F.R.I.B.A., and the following are the contractors for the building:—Mr. William Anderson, mason; Mr T. C. Stocks, joiner; Mr William Brand, slater; Mr Michael Lawless, plasterer; and Mr John Crichton, plumber.

**Fraserburgh.**—The parish church has been undergoing extensive alterations during the past year, and was re-opened recently. The work has been carried out under the supervision of Mr. M. Mackenzie, architect, of Aberdeen. The church has been lengthened to the extent of 14ft. by the taking in of the old vestry and session house. The organ has been redecorated, and the pulpit has been removed to the apse. A large session house and vestry has been placed under the pulpit gallery. Furnaces for the new air heating apparatus have been placed underground. The decorations and stained glass work were executed by Mr. E. Copland, of 85, Rosemount Viaduct, Aberdeen. The contractors for the other portions of the work were:—Mason, Mr. Corbett, of New Pitsligo; joiner, Messrs. Brehner and Jenkins; slater, Mr. Thomson; plasterer, Mr. Wiseman; plumber, Mr. Ferguson; heating engineer, Mr. J. Grundy, of London.

**Ipswich.**—A new workhouse was opened recently, which had been built from designs by Messrs. Salter and Adams, of 28, Woburn Place, London. Mr. W. Lister Newcombe, of 89, Pilgrim Street, Newcastle-on-Tyne, working in conjunction. Messrs. G. Grimwood and Sons, of Ipswich, were the contractors, and their tender amounted to £25,773. The main buildings are recessed 200ft. from the Woodbridge Road. They consist of a central administrative block and two pavilions. There is a spacious dining hall behind the central block, and rooms are set apart for the boilers, gas engine, and coal stores. The whole of the buildings will accommodate some 369 paupers, and are entirely lighted by electricity.

**Llanely.**—A new school was opened at Llanely last week, providing accommodation for 770 children. It has been built from plans prepared by J. B. Morgan, M.S.A., of Llanely.

**Keighley.**—The proprietors of the Queen's Theatre have let the main contract for the reconstruction and enlargement of the theatre to Messrs. Greenhow and Murgatroyd, of Keighley. The elevation of the new premises to Queen Street will be 83ft. in width, the auditorium will be 56ft. by 60ft., and the stage will be 65ft. by 45ft., with a height of 60ft. The work will be done from plans prepared by Mr. F. Matcham, architect, of London, and it is claimed that the new premises will form one of the handsomest theatres in the provinces. The work will not be completed before November. In land and buildings the promoters of the new theatre are expecting to lay out nearly £20,000.

**London, E.C.**—At the meeting of the London County Council held last week, on the recommendation of the Building Act Committee, consent was given to the rebuilding of 116, Fore Street, Cripplegate, with a projecting oriel window as shown on the plan submitted by Messrs. N. S. Joseph, Son, and Smitham, on behalf of the trustees of the Cripplegate Bank. It was also agreed to give consent to the erection of two angle turrets to a proposed building on the site of Vulcan Wharf, on the south side of Upper Thames Street, such consent, however, being subject to certain conditions. The Council has given permission for the erection of a building on the south side of Tallis Street, Victoria Embankment, between the premises of the "Daily Mail" and the National Telephone Co., to the height shown on the plans submitted on behalf of Messrs. Harmsworth Bros.

## Views and Reviews.

### FRENCH ART AND ARCHITECTURE.

Miss Kingsley has essayed to compress the whole of the history of French art during a period of 799 years into a volume of 509 pages. The task is a considerable one, and we were astonished to see it accomplished. But when the book is examined, one's astonishment grows less. For it may be divided into two sections: French Art from the period 1100 to 1475; and French art from 1475 to 1899. When we find that the first period of 375 years is given the happy despatch in twenty-one pages, we can only surmise that the authoress is either indifferent to or contemptuous of early French art. That is the first point about the book. It is a history of French art not from 1100 but from 1475 to the present day; the title is a misnomer.

After this grievous disappointment we turned to see how architecture was treated. Miss Kingsley promised well. On page 8 is a magnificent programme. Architecture is not to be a Cinderella any longer, thrust aside by painting and sculpture. The book is to describe "the Romanesque of the South and the North; the Gothic; the Flamboyant; the effect of the Italian Renaissance on the French architects; the gradual development of the purely French style"—how could it be purely French if there was Italian influence?—"the magnificences of Louis XIV.; and the later classical revival." Alas! the programme was but a snare and a delusion. To put it arithmetically, the importance of French painting and sculpture, as compared with that of French architecture, is as five to one; for more than 400 pages are devoted to the former, only eighty pages to the latter. Architecture is a Cinderella after all. Yet the most glorious manifestation of French intellect is to be seen in its great architecture—its thirteenth century cathedrals, its sixteenth century chateaux. French pictures and French statuary are rivalled or surpassed elsewhere; its architecture is the supreme achievement of French genius.

What little there is of architecture we have read. French Romanesque and French Gothic did not detain us long; eight pages contain all that Miss Kingsley knows about them—some things, too, that she does not know. She is unhappy in her very first quotation, which tells us that what distinguishes French from all other European Architecture is that it has been cultivated in various original and distinct schools, working in different provinces—a remark which is far truer of Italy than it is of France. We are told that in the early Romanesque churches the pillars were thick and round. If Miss Kingsley travels through Normandy and England, she will find that these cylinders are work of the twelfth, not of the eleventh century. Romanesque in France, we are told, is of two styles, those of Southern Gaul and Normandy; which is as if one should divide Great Britain into England and Caithness. Anthyme St. Paul hesitates between a classification of six groups and eighteen schools. Without subdividing so far as that, we would suggest that the Romanesque churches cannot be reduced to less than three types; those covered with barrel vaults; those covered with domes; those covered with groined or ribbed vaults. Of course, too, the old Byzantine fallacy is trotted out once more, and is supposed to account for the abbeys of Vezelay, Charlieu, and Cluny. The Byzantine crops up periodically in the literature of Perigordian architecture, but what is he doing in Burgundy? But it is when we get to Perigieux itself that the fogs most thicken. St. Front, Perigieux, is stated to have been copied from St. Mark's, Venice, before St. Mark's, Venice, was built. And St. Front itself in the eleventh century, i.e., before it was built, is said to have had great influence on the churches of Aquitaine. We hear, too, that at St. Etienne de Nevers, "all the thrusts are thoroughly maintained"—a very remarkable phrase indeed. As for the construction of this and suchlike churches, nothing can be more risky and unsafe; the barrel-vault of the nave rises from a lofty clerestory wall,

which is without any buttresses, and, moreover, is pierced with windows. The result is that the vault is cracked in all directions. But Miss Kingsley's highest architectural flight is in describing the churches of Auvergne "with demi-vaults resting upon the walls of the clerestory and supporting the central vault;" the natural interpretation of which would seem to be that the barrel-vault of the nave rests on a demi-berceau, and the demi-berceau on the top of the clerestory wall—an internal elevation without parallel.

But let us hasten from the eight pages of Romanesque and Gothic to the twenty-one pages of nineteenth-century architecture. There we have twenty-one pages given to the architects as against 231 to the painters and sculptors. Miss Kingsley is of opinion that in the present century French painting and sculpture are exactly eleven times as important as French architecture. Rather rough on the French architects; still we are not sure that she is, not right. The twenty-one pages are padded with quotations and biographies; we are told to admire Garnier's meretricious Opera-house, mother of all gin-palaces. We are not told how abominable was the church-work of M. Viollet-le-Duc; beside his parish church at St. Denis, Scott's works are genuine original inspirations. The commission des Monuments Historiques is eulogised, its object being, "to oppose the destruction of a national monument by the owner." The real object is to keep the work and wages of destruction in the hands of what in France answers to our South Kensington gang; the select band of architects who get their wages for ruining the ancient monuments in France; among whom not the least noteworthy were M. Viollet-le-Duc—witness his treatment of Poissy—and M. Beswillard, who has been restoring Laon Cathedral for some forty years—so drastically that the vaulting of the whole south aisle of the choir and the whole of the south transept are shored up against imminent collapse. Or look at another of these vandals, French Wyatts, M. Abadie, who was set to restore St. Front, Perigieux; and restored it with pointed arches, pendentives, and dome all destroyed in favour of a new and more normal design by M. Abadie. Of all the churches in France, the one with the oldest and most authentic pedigree was that of Germigny-des-Prés. It was built in the reign of Charlemagne in the year 806. Of this most precious monument not one stone has been left on another, two capitals excepted. English restorations are child's play to what is done in France. Only in out-of-the-way churches like Auxerre and St. Quentin may we hope to find anything ancient and veritable left. But year by year the area of ancient art diminishes. Miss Kingsley would do well to quote no more panegyrics on the Commission for the Destruction of Historical Buildings. The rest of the book—the great bulk of it—consists of chapters on painting and sculpture. Of these chapters more than half are occupied with detached biographies of various artists, compiled from various dictionaries of biography. As may be imagined, there is much "confused feeding" in them, as in a Scotch haggis; and as the man complained who was working through Johnson's dictionary, it is somewhat disconnected reading. Of the rest of the book, Renaissance art has been treated better by Lady Dilke, from whom Miss Kingsley borrows copiously, and by others. The really interesting part of the book is the detailed account of modern painting and sculpture in France. Most of us, when we see the Salon or the Luxembourg, do not know what it is all about. Miss Kingsley discourses pleasantly about the Classicists, the Romanticists, the Landscape Painters, the Peasant Painters, the Military Painters, the Genre Painters, the Orientalists, the Decoratists, the Idealists, and the Impressionists. This is the really valuable part of the book. In her next edition Miss Kingsley would do well to confine herself to nineteenth century work which she knows at first hand; to say nothing about the Romanesque, Gothic and Renaissance periods; and, above all, to let architecture alone.—F. B.

"A History of French Art, 1100—1899," by Rose G. Kingsley. 12s. 6d. net. London: Longmans, Green and Company, 1899.



**THE ORIGINS OF DECORATION.**

This is one of the popular issues for which the name of Messrs. Cassell is well known. The volume is presumably a reprint from "Work," a paper which has deservedly a wide circulation, and holds a high place as a popular educator. This little book, in some 150 pages, interspersed with nearly three hundred cuts illustrative of the text, gives a summary of the chief characteristics of the earliest impulses in design of the various races. To attempt such a task in so small a space implies of necessity a superficial treatment; but though the text is not from the pen of one who is a master of his subject, and the illustrations are too rough to give a just rendering of the subtlety of Greek, Pompeian, Japanese, and other refined arts, it yet affords such a general sketch and summary of the subject as would be of use to one who should desire to make a tentative first acquaintance with the origins of decorative design. Perhaps the extremely low price of the book constitutes its chief recommendation.

"Decorative Designs of all Ages for all Purposes." Cassell and Co., La Belle Sauvage, London, E.C. 1s.

**JAPANESE WOOD-CARVING.**

It is well for the public that the Editor of the "Studio" has leisure for writing occasionally, for probably no one is better acquainted with Japanese life and art. To the neat little series of "Unicorn Quartos" he has lately contributed a volume on Hokusai, painter-engraver, and now offers this eminently practical book to the student.

It is certainly true that the history and manners of a nation that produces such marvels deserve to be very attentively studied, and we of these hasty days who depend so much on the labours of others for what little knowledge we have are grateful indeed—not for all that is written, but for as much as is briefly stated and thorough.

The "Japanese craze," as it is called, and as the contemptuous expression implies, was indiscriminate in its beginnings as crazes in general. It originated in the wholesale importation of wonders, the like whereof had not theretofore been seen in this country, but only lately have we had time to take stock of new possessions: to select and reflect, in short.

That this little book has helped us to understand what we only admired before might be proved by extracting a passage from the introduction, but the writer's chief aim is to teach, and the book is really what it claims to be, a practical manual, and its most admirable illustrations are quite indispensable. We are shown first the wood-carver's tools, and then, step by step, what is done with them. Let no one hereafter despise the Japanese hewer of wood, for wood is his all in all, and has been from the beginning of time, according to his way of reckoning. "The physical characteristics of Japan—the prevalence of earthquakes and earth-tremors—which prohibited the use of heavy material for building purposes have ordained the employment of wood as best adapted to resist these disturbances, . . . and temples of wood exist in Japan, built as far back as the ninth and tenth centuries of our era, which . . . exhibit in a far less degree the ravages of time than the stone buildings of the same age in Europe. . . . As much respect is probably paid in Japan to the memory of their most eminent wood-carvers as is bestowed in Europe upon the achievements of Phidias." There is that which should give us pause in this sentence, and in conclusion it may be asked whether familiarity with the Japanese method may not result in the "Sloyd" schools being gradually emptied.—E. R.

A course of instruction in wood-carving according to the Japanese method. A "Studio" handbook. By Charles Holme.

**Under Discussion.****EDINBURGH ARCHITECTURAL SOCIETY.**

On Wednesday, May 10th, the closing meeting of the Edinburgh Architectural Society for the session took place, when Mr. John Ednie read a paper on "Furniture." After reviewing the styles of furniture from the Renaissance to the present day with the aid of choice and characteristic specimens thrown on the screen, Mr. Ednie discussed the modern adverse conditions, of which commercialism was the chief. With regard to the study of furniture Mr. Ednie had a good deal to say, advising thorough and careful full sizing of really good examples of the various styles purely as study and not with a view to reproduction. His concluding remarks constituted a strong plea for what he termed the "Arts and Crafts" style, examples of which, emanating from Glasgow and Germany, were shown. In the discussion which followed the new style was freely criticised, and the personal qualities of style as opposed to mannerism and affectation were put forward. Mr. A. Lorne Campbell occupied the chair.

**ST. MICHAEL'S, BASSISHAW.**

During the destruction of the Church of St. Michael, Bassishaw, members of the London and Middlesex Archaeological Society have watched the removal of the masonry with keen interest. The work of demolition has not reached the outer walls yet, but it has already led to some notable discoveries. On Monday evening last week Mr. C. Welch read to a meeting of the Society a paper by himself and Mr. F. C. Eeles on what had been found, and prefaced his remarks on this head with an interesting epitome of the history of the parish ward of Bassishaw. The church was extensively repaired in 1630, but was reduced to ashes in the great fire of 1666. The repairs so impoverished the parish that for ten years the people were unable to attempt the task of re-building, and it was not until 1676 that the work was taken in hand by Wren, being completed three years later. Its length was 70ft.; width, 50ft.; height, 42ft.; and height of the tower, 75ft. One remarkable reference to Wren was made in the portion of the paper written by Mr. Eeles, who said that Wren built large brick arches to support his new west end walls. That on the north side stretched right across the aisle, but after its erection it gave way, owing to a large buttress for the tower being built upon it. The consequence was that it had to be shored up. It was sad, pursued the writer, to find such an instance of gross carelessness on Wren's part, but it was only of a piece with the rest of the church, which was a regular case of seventeenth century jerry building. A number of curious steps were found leading from one floor to another, and there were many indications of fourteenth and fifteenth century work, whilst a very curious find was that of an empty vault, in which two skulls had been built into the brickwork. A large number of tobacco pipes, probably belonging to Wren's workmen, were found, together with a fine "cross slab" from the early part of the thirteenth century. A sketch of the church appeared in a recent number of the BUILDERS' JOURNAL AND ARCHITECTURAL RECORD.

**THE USE OF HEAT FROM DESTRUCTORS.**

At a meeting of the Incorporated Association of Municipal and County Engineers, held recently at Ipswich, Mr. A. H. Campbell, of Canterbury, read a paper on the use of heat from destructors to assist in steam generation. He said that the utilisation of the waste heat from the cremation of the refuse of a town was a question of a thoroughly economic kind, and of prime importance, therefore, to our municipal economists. That there was much latent heat and power contained in the cremation of town refuse went without saying; that there was not so much in it as some of its enthusiasts aver, was evident from the

very few joint stations which had as yet been erected. Town refuse, like sewage, he said, was always with them, and there was a sufficiency of power contained in the cremation of refuse to justify full inquiry and careful research and investigation by those having the requisite facilities of test and observation of the matter. And at the very lowest estimate, it was the turning to the profitable use of a measure of power hitherto unappreciated or left undeveloped. The leading principles or ideas which governed the design of the buildings and the disposition of the plant therein contained were: (1) That there should be no possibility of dust from the refuse entering the engine-house, and so doing damage to the electric plant; (2) that the dust destructor should work either alone or in combination with the electric plant; (3) that the capacity of the destructor cells should be such that each day's refuse collection should be effectually cremated within the space of ten hours, beginning at noon of each day and going on till ten at night; (4) that the power developed during the day hours of light load should go to charge the accumulators (a process which he was advised would take from four to six hours); (5) that by the time the accumulators were stored the night load would be coming on, and this would more than absorb the power given off from the destructor. With these five principles, a very convenient arrangement of buildings has been adopted, the boiler attached to the refuse destructor being in very close proximity to the cells, and so taking up the maximum amount of heat as the same was given off from the cells. Mr. Campbell gave particulars of the results obtained at a number of refuse destroying works, and at the conclusion of his paper a lengthy discussion took place.

**New Companies.****Clifton Drive (St. Anne's-on-Sea) Land and Building Co., Limited.**

This company was registered on May 9th by Pitman and Sons, of 14, Clements Lane, London, E.C., with a capital of £10,000 in £5 shares. The object of the company is to acquire certain leasehold property in Clifton Drive, St. Anne's-on-Sea, Lancashire, to enter into an agreement with Thomas Marsden, Harwood Robinson, Joseph Nightingale, John Forrest, Frank Oldham, John Morris, William Ward, Henry Worthington, and John Sudall, and to carry on the business of builders, contractors, builders' merchants, &c. The first directors (to number not less than three or more than seven) are to be nominated by the subscribers. Qualification, £250. Remuneration as the company may decide.

**Measures Brothers (1899), Limited.**

This firm was registered on May 5th by A. E. Warner and Co., of 10, Finsbury Circus, London, E.C., with a capital of £285,000 in £1 shares. Object, to acquire the business carried on at 57, Southwark Street, S.E., by Measures Brothers, Limited, to enter into an agreement with Measures Brothers, Limited, R. J. Measures, R. H. Measures, R. T. Measures, and H. T. J. Measures, and to carry on the business of ironmasters and contractors, smelters, fitters, &c.; to acquire any mines, mining and other rights, metalliferous lands, alluvial ground, &c., in any part of the world, and to carry on the business of a mining company in all its branches; to develop the resources of land by clearing, &c.; as stock raisers, &c.; to establish gasworks, telegraph and telephone systems; as bankers, company promoters, stock and share dealers, builders and contractors; to acquire and turn to account any patents, patent rights and inventions, real and personal property, &c. The first subscribers (each with one share) are:—R. J. Measures, R. H. Measures, R. T. Measures, H. T. J. Measures, W. W. Measures, J. Barrow, and H. E. Warner. The number of directors is to be not less than three nor more than seven;

A Statue of Mr. Kruger, ordered by Transvaal patriots from Aberdeen contractors, has been despatched to Pretoria. It is upwards of 60ft. in height, and the granite base covers over 40 square yards. A colossal bronze of the President will surmount the structure.



the first are the first four subscribers. Qualification, £5,000. Remuneration as fixed by the company or by agreement.

#### Horsfall Destructor Company, Limited.

This company has been registered with a capital of £100,000 in £1 shares, to acquire the business carried on by the Horsfall Furnace Syndicate Limited, to enter into an agreement with the said syndicate, to erect and maintain furnaces, machinery, and apparatus for the destruction of town and other refuse, to construct, maintain, and work any machinery or plant for the generation or distribution of electricity, and to carry on the business of electrical and mechanical engineers, machine makers, boiler-makers, iron and brass foundries, millwrights, iron and steel converters, &c. The subscribers are:—Mr. Arthur Greenwood, 16, Great George Street, Westminster; Mr. G. Watson, 21, Springfield Mount, Leeds; Mr. C. E. A. F. S. Butler, 4, Princes Mansions, Victoria Street, S.W.; Mr. F. L. Watson, 21, Springfield Mount, Leeds; Mr. W. Hillman, 7, Tolson Street, Leeds; Mr. C. F. Dent, 5, St. John's Terrace, Leeds; and Mr. J. Williams, 38, Springfield Place, Leeds. The number of directors is not to be less than three nor more than seven. The first are—Arthur Greenwood, Philip A. V. Robinson, Arthur P. James, George H. Denison, Major Morgan Lindsay, and George Watson; qualification, 500 shares; remuneration, £700 per annum divisible.

#### South Beckenham Land Company, Limited.

This company was registered on May 10th, with a capital of £20,000 in £5 shares, to enter into an agreement with Ivor Price, to purchase and traffic in land, and house and other property, and to carry on the business of builders, contractors, decorators, merchants, dealers in stone, sand, lime, bricks, timber, and hardware, house agents, brick, tile, and terra-cotta makers, &c. The first subscribers (each with one share) are: Eustace M. Ford, 82, Bedford Circus, solicitor; E. J. W. Lowell, 30, Bedford Row, W.C., clerk; John Cox, Public Hall, Beckenham, architect; Francis Sandford, 33, Hertford Street, W., gentleman; Ivor S. Price, 201, Piccadilly, W., gentleman; John Newman, Effingham House, Arundel Street, W.C., clerk; Harry Pierce, 62, Carter Lane, E.C., clerk. The first directors (to number not less than three, nor more than seven) are to be nominated by the subscribers. Qualification £100. Remuneration £100 each per annum.



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#### South Derbyshire Land and Building Company, Limited.

This company was registered on May 8th, with a capital of £10,000 in £10 shares, to acquire any lands and prepare the same for building purposes, and to carry on the business of builders, contractors, decorators, dealers in stone, sand, lime, bricks, timber, hardware, and other building materials, brick, tile, and terra-cotta makers, house agents, &c. The first subscribers (each with one share) are:—H. Trafford Nadin, 20, Ashby Road, Burton-on-Trent, colliery owner; H. G. Nadin, Stapenhill, Burton-on-Trent, colliery owner; William Hay, Stanton, Burton-on-Trent, colliery manager; Tom P. Hewitt, Castle Gresley, Burton-on-Trent, colliery manager; R. R. Lishman, Bretby, Burton-on-Trent, colliery manager; Alfred H. Timmis, Swadlincote, near Burton-on-Trent, solicitor; Mrs. William Hay, Stanton, Burton-on-Trent. The first directors (to number not less than three or more than five) are:—Henry G. Nadin, H. Trafford Nadin, William Hay, and Tom P. Hewitt. Qualification, £100. Remuneration, as the company may decide. Registered office, Stevens Chambers, Market Place, Swadlincote.

### CURRENT PRICES.

#### OILS AND PAINTS.

		£ s. d.	£ s. d.
Castor, French	per cwt.	1 4 6	1 5 8
Colza, English	per cwt.	1 2 9	—
Copperas	per ton	2 0 0	—
Kerosine, water white	per cwt.	1 5 0	1 15 0
Lard	per cwt.	1 9 0	—
Linseed	per gal.	0 19 0	—
Neatsfoot	per cwt.	0 2 6	0 4 0
Paraffin	per cwt.	0 10 2	0 19 0
Pitch	per barrel	0 8 6	0 8 6
Tallow, Town	per cwt.	1 3 0	1 3 9
Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 13 6	—
Glue	per cwt.	1 19 6	2 13 6
Lead, white, ground, carbonate	per cwt.	0 19 0	—
Do. red	per cwt.	0 17 0	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	3 12 0	—
Do. sticklac	do.	2 2 6	2 15 0
Pumice stone	do.	0 8 9	—

#### METALS.

Copper, sheet, strong	per ton	87 0 0	—
Iron, bar, Staffs. in London	do.	6 15 0	8 10 0
Do. Galvanised Corrugated sheet	do.	12 5 0	12 10 0
Lead, pig, Spanish	do.	14 5 0	—
Do. English common brands	do.	14 10 0	—
Do. sheet, English, 6lb.	do.	16 10 0	—
Do. per sq. ft. and upwards	do.	17 5 0	—
Do. pipe	do.	9 0 0	10 0 0
Nails, cut clasp, 6in. to 6in.	do.	8 15 0	9 15 0
Tin, Straits	do.	116 16 3	117 6 3
Do. English ingots	do.	116 0 0	117 0 0
Zinc, sheets, English	do.	27 10 0	28 10 0
Do. Vieille Montaigne	do.	31 0 0	—
Do. Spelter	do.	28 10 0	28 16 3

#### TIMBER.

##### Soft Woods.

		£ s. d.	£ s. d.
Fir, Dantzic and Memel	per load.	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Laths, log, Dantzic	per fath.	4 10 0	5 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Deals, Archangel and 1st per P. Std.	do.	10 15 0	18 10 0
Do. do. 4th & 3rd.	do.	12 0 0	12 5 0
Do. do. unsorted	do.	7 5 0	8 5 0
Do. Riga	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow	do.	14 15 0	—
Do. do. 2nd	do.	12 0 0	—
Do. do. Unsorted	do.	8 0 0	10 10 0
Do. do. White	do.	7 15 0	9 15 0
Do. Swedish	do.	11 5 0	12 0 0
Do. White Sea	do.	12 5 0	—
Do. Quebec Pine, 1st.	do.	16 10 0	22 0 0
Do. do. 2nd	do.	12 0 0	—
Do. do. 3rd & 4th	do.	7 0 0	7 15 0
Do. Canadian Spruce, 1st	do.	9 0 0	10 5 6
Do. do. 3rd & 2nd	do.	5 0 0	8 0 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	per P. Std.	7 10 0	8 12 6
Flooring Boards, 1 in.	per square	0 11 6	—
Do. prepared, 1st	do.	0 10 6	0 11 0
Do. 2nd	do.	0 9 0	—
Do. 3rd & 4th	do.	—	—

##### Hard Woods.

Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 12 6	3 17 6
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, lin. Cuba	per ft. sup.	0 0 4	0 0 4
Do. Honduras	do.	0 0 3 7/8	—
Do. Tobasco	do.	0 0 4 21/22	—
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 5 1/2	—
Do. African	do.	0 0 3 1/16	—
Do. St. Domingo	do.	0 0 4 23/32	6 23/32
Do. Tobasco	do.	0 0 4 23/32	5 21/32
Oak, Dantzic and Memel	per load	3 5 0	3 5 0
Do. Quebec	do.	4 12 6	5 0 0
Teak, Rangoon, planks	do.	9 15 0	14 5 0
Walnut, Riga (Bauk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub. ft.	0 2 3	0 5 6

### COMING EVENTS.

Wednesday, May 24.

SOCIETY OF ARTS.—Ordinary Meeting at 8 p.m.

Thursday, May 25.

SOCIETY OF ARCHITECTS.—Meeting at 8 p.m.

SOCIETY OF ARTS.—(Indian Section).—Meeting at 4.30 p.m.

CARPENTERS' HALL, LONDON WALL (Lectures on Carpentry and Joinery).—Mr. James Bartlett on "Staircases, and Joists in Joinery." 7.30 p.m.

Friday, May 26.

ARCHITECTURAL ASSOCIATION (Discussion Section).—Mr. J. Leonard Williams, on "Houses of the Speculative Type."

Monday, May 29.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Business Meeting at 8 p.m.

Tuesday, May 30.

SOCIETY OF ARTS (Applied Art Section).—Meeting at 8 p.m.

Wednesday, May 31.

SOCIETY OF ARTS.—Ordinary meeting at 8 p.m.

Thursday, June 1.

SOCIETY OF ARTS.—Dr. J. S. Phené, on "The School of Painting on Sicily and Ephesus."

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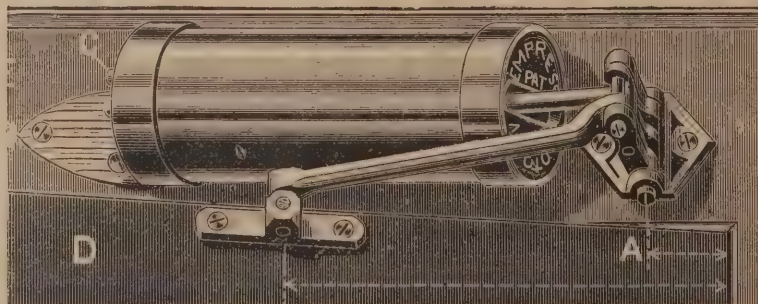
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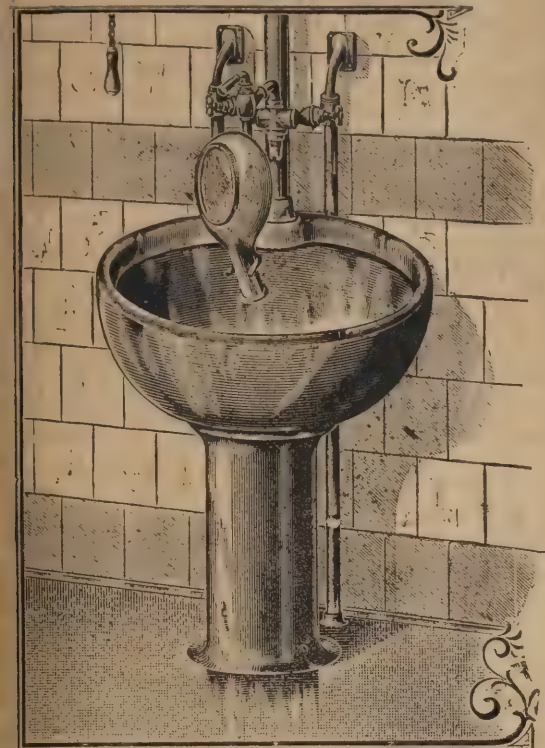
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BELFAST: R. Patterson & CO., 57 & 59, High Street.

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AND PEDESTAL FLUSHING RIM SLOP HOPPER.

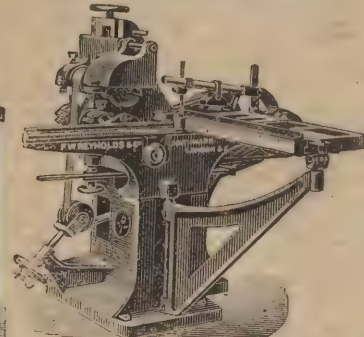
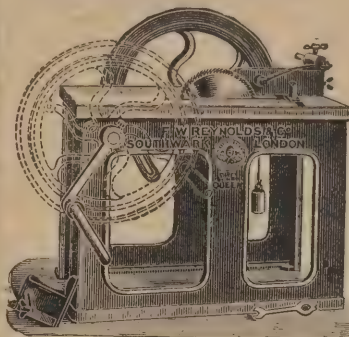
This system of washing bedpans, &c., is very simple, cleanly, and inoffensive. In the act of washing, the hands need not touch the pan, it is only necessary to turn round the swivel arm to see that pan is perfectly clean before lifting it off spray hook.

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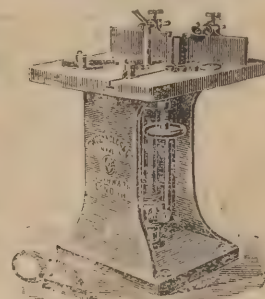
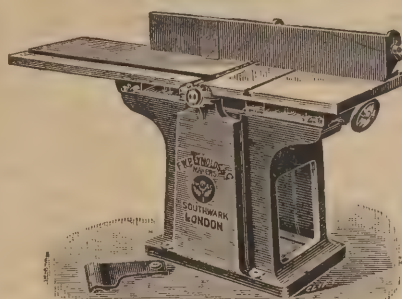
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NEW PATTERN VERTICAL  
SPINDLE MACHINE.



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## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

**BUCKNALL.**—For Abbey Hulton section of the Bucknall Sewerage scheme. Lerner Sugden, F.R.I.B.A., engineer and surveyor to the Council, 20, Cheapside, Hanley, and at Leek:—  
Bagnall ... .. £1,181 0 Cornes ... .. £1,050  
Barke ... .. 1,125 16 Williams, Etruria\* ... 940  
\* Accepted.

**CLACTON-ON-SEA.**—For the erection and completion of a detached residence, proposed to be erected on the Marine Parade, Clacton-on-Sea, for Mr. G. W. Thomson. Mr. James W. Martin, architect, Station Chambers, Clacton-on-Sea. Quantities by Mr. Alfred Boxall, 8, Adam-street, Adelphi, W.C.:—  
Shillitoe and Sons ... £5,700 Merredew and Wort ... £4,790  
Everett and Son ... 5,670 Dupont ... .. 4,567  
Lyle Manufacturing ... Linzell ... .. 4,444  
Co. ... .. 5,400 McKay ... .. 4,100

**EDMONTON.**—For new schools, Silver-street, for the School Board for Edmonton. Mr. Henry W. Dobb, architect, 110, London Wall, E.C. Quantities by Messrs. Young and Brown, 7, Southampton-street, W.C.:—  
Hill ... .. £25,350 Hookley ... .. £24,040  
Chessum ... .. 24,300 Lawrence ... .. 23,399  
Stimpson ... .. 24,170 Monk\* ... .. 21,910

[Architect's estimate, £23,839.]

\* Accepted subject to the sanction of the Educational Department.

**EDGWARE.**—For the erection of Nos. 5 and 6, Canons-park, Edgware. Mr. J. H. May, architect, 249, High Holborn:—

Lovell ... ..	£3,278	J. Christie ... ..	£2,968
Britten ... ..	3,200	Dupont ... ..	2,850
Selarcy ... ..	3,189	Tongue ... ..	2,900
Wall and Co. ...	3,069	Judge* ... ..	2,750

\* Accepted.

**FELIXSTOWE.**—For the erection of a Presbyterian Church. Mr. George William Leighton, architect, 6, Prince's-street, Ipswich, and Orwell-road, Felixstowe:—  
Cornish & Gaymer £4,325 0 Thos. Ward ... £3,045 0  
Ernest West ... 3,300 0 Wm. Waxman ... 2,979 0  
R. W. Pratt ... 3,240 0 H. J. Linzell ... 2,895 0  
Wm. Parmenter ... 3,236 0 F. C. Thurman\* ... 2,879 18  
\* Accepted.

**GLOUCESTER.**—For the erection of mixed and infants' schools, caretaker's house, &c. Alfred J. Dunn, A.R.I.B.A., architect. Quantities by the architect:—  
J. W. Smith ... £14,998 0 Stephens & Bastow £13,478 0  
Parnell and Son ... 14,376 0 Smith and Pitts ... 12,487 0  
Forse and Son ... 14,332 0 Gurney and Sons, Gloucester\* ... 11,548 10  
Sapote and Sons ... 14,276 0 Gurney Brothers ... 8,700 0  
T. Broad ... .. 13,878 0  
W. Jones ... .. 13,730 0  
\* Accepted.

**GREAT YARMOUTH.**—For a Mission Church and Institute, for "The Missions to Seamen." Quantities by the architects, Messrs. Bottle and Olley, 5, Queen-street, Great Yarmouth:—

Jas. Rand ... ..	£1,750 0	A. E. Bond ... ..	£1,615 0
F. Grimble ... ..	1,685 0	Carter and Wright	1,619 0
J. Ward ... ..	1,669 15	W. Cork, Great Yarmouth* ...	1,235 0
J. S. Read ... ..	1,650 0		

\* Accepted.

Plumbers' Work.

R. A. Eastoe (accepted) ... .. £137

Whole Tender.

G. E. Hawes, Norwich ... .. £1,375

**HUDDERSFIELD.**—For the erection of five houses, Linthwaite, for Mr. G. Haigh. Mr. J. Berry, architect, Queen-street, Huddersfield:—

Masonry.—Alfred Hirst, Linthwaite ...  
Joinery.—White and Brerley, Golcar ...  
Plumbing.—F. Goodall, Slaithwaite ...  
Plastering and Painting.—James Walker, Slaithwaite ... £1,500  
Slaithwaite ...  
Stating.—Pickles Bros., Fountain-street, Huddersfield ...

**ILFORD.**—For erecting the Town Hall, Ilford. Mr. B. Woollard, architect, Finsbury-circus, E.C. Quantities by Mr. Geo. T. G. Wright, Great Winchester-street, E.C.:—  
Symes ... .. £27,969 Stephens, Bastow, & Co., Ltd. ... £24,000  
Mitchell ... .. 27,100 Sharpe ... .. 24,000  
Pattman and Fotheringham ... 26,500 Pridmore ... .. 23,000  
Chessum and Sons ... 25,469

**LONDON.**—For alterations and decorations at "Victory" public-house, Clarence-road, N.W. Messrs. Thorpe and Furness, architects:—  
Marchant and Hirst £1,385 Mitchell ... .. £1,200  
Bloomfield and Evans 1,299 Fuller ... .. 1,100

**LONDON.**—For alterations and repairs at No. 19, Rupert-street, W., for Mr. G. W. Pauley. Messrs. Shaw and Gale, architects, 49, Finsbury-pavement, E.C.:—

Beer and Cash ... ..	£2,100 0 0	With-out shop front.
Patman & Fotheringham	1,969 0 0	£1,910 0 0
Marchant and Hirst ...	1,822 0 0	1,735 0 0
Kilby and Gayford ...	1,683 0 0	1,674 0 0
Woolley and Co. ... ..	1,630 0 0	1,506 0 0
Lee ... ..	1,587 0 0	1,500 0 0
Lole and Lightfoot ...	1,461 0 0	1,449 0 0
Cordell ... ..	1,442 0 0	1,339 0 0
Hocking Bros. ... ..	1,420 0 0	1,302 2 0
		1,290 0 0

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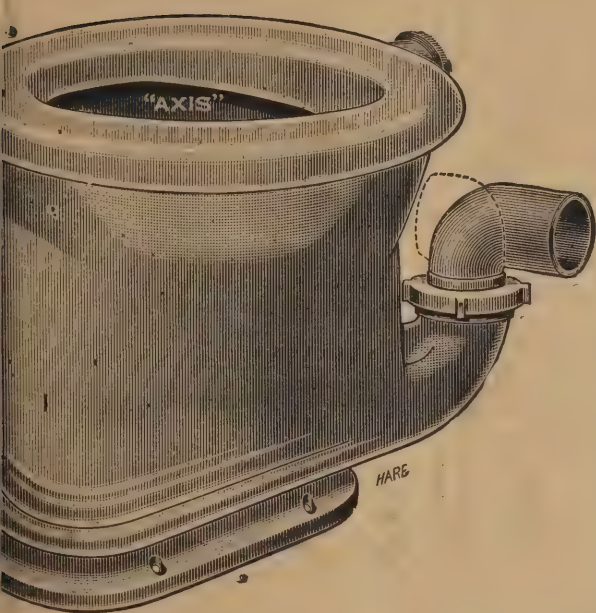
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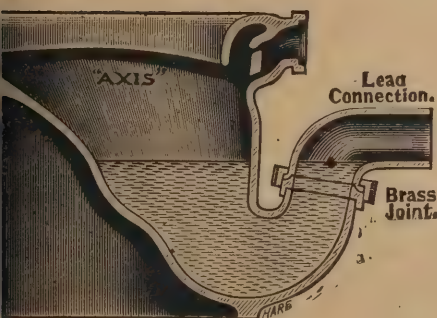


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LONDON, E.—For proposed new premises for Mansfield House University Settlement Boys' Club and Passmore Edwards Hall, Canning Town, E. Mr. H. Clapham Lander, A.R.I.B.A., architect, Effingham House, Arundel-street, Strand, W.C. Quantities by Mr. C. A. Jaques, 29, Dartmouth-park-avenue, N.W.—

John Shillitoe and Son	£9,200	Patman and Fother-	
Williams and Son	9,147	ingham	£8,529
Mattock Brothers	8,700	W. J. Maddison	8,430
John Greenwood	8,695	James Smith & Sons	
H. Wall and Co.	8,632	S. Norwood	8,353

\* Accepted subject to certain reductions.

LONDON.—For alterations and additions to the "Prince Albert" public-house, Weedington-road, N.W., for Messrs. Keates and Arnold. Messrs. Crickmay and Zimmermann, architects, Mincing-lane, E.C.—

	In Mahogany.	In Walnut.
Ransome	£2,065	£2,090
Marchant and Hirst	1,868	1,918
Edwards and Medway	1,790	1,785
Spencer	1,757	1,757
Bloomfield and Evans	1,595	1,610
Green	1,454	1,504

\* Accepted.

SOUTHEAST-ON-SEA.—For alterations and additions to the "Cliff Hotel," Southeast-on-Sea. Messrs. Thompson and Greenhaigh, architects, Bank-chambers, Southeast-on-Sea—

Simpson and Cove	£3,400	J. Whuir	£2,985
Edwards and Medway	3,300	A. E. Symes	2,920
Wm. Lancaster	3,180	Davis and Leaney	2,902
The Lyle Co., Ltd.	3,150	Shelbourne and Co.*	2,895
F. Dupont	2,999		

\* Accepted.

TAMWORTH.—For the erection of a new engine house, engine beds, &c., at Alders Mill, Tamworth, for Messrs. C. Marsden and Sons. Mr. J. W. Godderidge, architect and surveyor, Tamworth:—

E. Williams†	£1,350	Clarson and Son†	£1,332
--------------	--------	------------------	--------

† Completed in three months. † Completed in four months.

WATFORD.—For alteration and addition to coach-house, Harewood-road, Watford. Mr. C. P. Ayres, architect, Watford:—

Waterman	£1,219	0	0	Tyler	£1,147	18	0
Weggs	1,208	0	0	Clarke	1,090	3	11
J. Christie	1,197	0	0	Tom	1,089	0	0
King	1,180	0	0	Watkins	1,085	0	0
Richardson	1,168	0	0	Gorte	1,060	0	0
Webster & Cannon	1,150	0	0				

## CONTRACTS OPEN.

### TRICHINOPOLY WATER WORKS EXTENSION.

The Sanitary Engineer to the Government of Madras is prepared to receive TENDERS for the supply of (1) Pipes and specials, (2) Fittings for the above works. About 762 tons of pipes and specials are required.

2. Specifications, schedules, tender forms, and drawings can be obtained of the undersigned.

3. Sealed tenders, endorsed "Tenders for pipes, &c., for Trichinopoly Water Works Extension," must be delivered at the Office of the undersigned not later than WEDNESDAY, JUNE 7th next.

4. The successful tenderers will be required to enter into a contract and deposit a security for the due performance of the terms of specification.

5. Tenders will be sent by the undersigned to Madras for disposal, and the result will be intimated by wire shortly after date of receipt there of the tenders.

6. The Sanitary Engineer does not bind himself to accept the lowest or any tender.

HENRY S. KING and Co.

65, Cornhill, London,  
May 16th, 1899.

### COUNTY BOROUGH of WOLVERHAMPTON. PUBLIC BATHS.

The Parks and Baths Committee of the Corporation of Wolverhampton invite TENDERS for the SUPPLY, ERECTION, and FIXING of a FEED-WATER SOFTENER in the Public Baths, situate in Bath-place, Wolverhampton.

Specification and Form of Tender may be obtained on application at the offices of the undersigned.

Sealed Tenders, endorsed "Tender for Water Softener," and addressed to the Chairman of the Parks and Baths Committee, must be delivered at the

Town Clerk's Office not later than TEN o'clock a.m. on JUNE 17th, 1899.

The Contractor will be required to enter into an undertaking to pay not less than the minimum standard rate of wages of the district, and to observe certain hours of labour in accordance with the resolution of the Town Council.

The lowest or any Tender will not necessarily be accepted.

J. W. BRADLEY, A.M.Inst.C.E., M.I.Mech.E.,  
Borough Engineer and Surveyor.

Town Hall,  
Wolverhampton,  
May, 1899.

### LEYTON URBAN DISTRICT COUNCIL. TO BUILDERS, CONTRACTORS, AND OTHERS.

The Leyton Urban District Council are desirous of receiving TENDERS for the CONSTRUCTION of CHIMNEY SHAFT at their Electric Light Station, about 156ft. in height and 8ft. in diameter.

Plans and specifications may be seen, and form of Tender and other particulars obtained of Mr. WILLIAM DAWSON, M.Inst.C.E., at the Offices of the Council, Town Hall, Leyton, between the hours of TEN and FOUR (Saturdays, TEN and TWELVE).

Sealed Tenders, in special endorsed envelope supplied with the forms, accompanied by a £10 Bank of England note, to be inclosed with the Tender (to be forfeited if the Tender is withdrawn before the contract is signed), must be delivered at the Offices of the Council, Town Hall, Leyton, before NOON on the JUNE 6th, 1899.

The Council does not bind itself to accept the lowest or any Tender.

R. VINCENT,  
Clerk to the Council.

Town Hall,  
Leyton,  
May 8th, 1899.

Makers of FARRAR'S Registered

"Climax" and "Eclipse" Steel

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Fanlight Gearing.

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ART METAL  
WORK.

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*See Large Advertisement, Back Page, Monthly.*

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who have recently introduced into Europe the process now being so largely used in America, have erected large works in this country, and are now taking Orders for the supply of their

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... and ...  
THE R. G. DUNN BUILDING.

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Quotations on receipt of Requirements, Address, &c.

## THE BRITISH NON-FLAMMABLE WOOD COMPANY Limited,

2, Army and Navy Mansions, Victoria Street, London, S.W.



## WROUGHT IRON BEAMS.

WITH regard to wrought iron beams, it may be mentioned in the first place, that the weight required to break a 1" x 1" x 12" bar is 2250 lbs.; but for a flanged girder, another formula is required. This, according to Hurst, is  $W = C \frac{ad}{l}$ , and although it is much wiser to work by equating stress and bending moments, yet for simple cases the employment of this formula will suffice.

$W$  = breaking weight in tons in the middle.

$C$  = a constant found by experiment.

$a$  = area of bottom flange in square inches.

$d$  = depth in inches.

$l$  = span in feet.

Wrought iron girders, also, may be made in three forms, viz., rolled, plate, or box.  $C$ , the constant, differs slightly in each case.

VALUES OF  $C$ .

For rolled girders the value of  $C$  is 7.0

" plate do. do. " 6.0

" box do. do. " 6.5

$A$ , the area of the lower flange is a little more difficult of calculation than in the case of a cast iron girder. In the sketches, Fig. 1, the parts shaded show the portions to be calculated as the area of the lower flange. Of course, in the case of plate and box girders, the rivet-holes must be deducted.

Now the ultimate strength of wrought iron per square inch is usually taken under compression at 16 to 20 tons, and under tension at 20 to 25 tons. This gives working stresses of 4 tons compression and 5 tons tension. Thus, the working stresses under both conditions being so much alike, shows the reason why wrought iron girders are always made with both flanges the same size, especially as the shanks of rivets may be included in the area of flanges under compression, while rivet-holes must be deducted from tensional flanges.

One or two examples of the application of the formula will now be given:—

What distributed load will a 10" x 5" rolled iron joist safely carry over a 12ft. span?

In a question of this sort the thickness of the flanges must be assumed. In a girder 10" deep, a fair thickness for the web would be  $\frac{3}{8}$ ", and for the flanges  $\frac{1}{2}$ ".

$$W = C \frac{ad}{l}$$

$A = 5" \times \frac{1}{2}" = 2.5$  sq. in.  $C$  for rolled girders is 7.0.

$$\text{Then } W = 7 \frac{2.5 \times 10}{12} = \frac{175}{12} = 14.58 \text{ tons.}$$

This being a concentrated load, then  $14.58 \times 2 = 29.16$  tons distributed load. This being the breaking weight, taking 5 as a factor of safety, the answer is  $29.16 \div 5 = 5.83$  tons.

Here is the form of the question reversed, taken from one actually set: A rolled iron joist, 7" deep, is required to carry the joists of a single floor, 20ft. span, over an 8ft. window opening. Taking the total load on the floor at 2cwts. per foot super., determine the section of the joist.

In the first place, it is necessary to find the total weight carried by the girder.

Area of floor supported by girder = 8ft. x 10ft. (half-span of joists) and weight =  $8 \times 10 \times 2 = 160$  cwts., or 8 tons distributed load.

8 tons distributed = 4 tons, concentrated safe load.

Taking 4 as a factor of safety =  $4 \times 4$ , or 16 tons, breaking weight in the centre.

$$\text{By the formula } W = C \frac{ad}{l}; 16 = 7 \frac{a \cdot 7}{8};$$

$$16 = \frac{49a}{8}; 49a = 16 \times 8;$$

$$A = \frac{16 \times 8}{49} = \frac{128}{49} = 2.61 \text{ sq. in.}$$

This would give a  $\frac{1}{2}$ " flange just over 5" wide. From this the section of the joist could easily be drawn.

It will be observed that these formulae are worked out very much on the lines of those applying to cast iron girders. To conclude, a more elaborate example will be given:

Required, the size of a wrought iron box girder, to carry an 18" wall, 12ft. high, over a 20ft. opening.

Firstly, as usual, find the weight on the girder.

$20 \times 12 \times 1.5 = 360$  cube feet at brickwork. This may fairly be reckoned at 10wt. per cube foot. A total weight of 18 tons is thus arrived at.

18 tons distributed = 9 tons concentrated; and, with 4 as a factor of safety, gives a breaking weight of 36 tons.

$$\text{Then } 36 = C \frac{a \cdot d}{l}$$

$C$  in a box girder is 6.5

Assuming the depth to be 18"

$$\text{Then } 36 = 6.5 \frac{a \cdot 18}{20}$$

$$36 \times 20 = 6.5 \times a \times 18$$

$$a = \frac{36 \times 20}{6.5 \times 18} = \frac{40}{6.5} = 6.15 \text{ sq. in., area of bottom flange}$$

To carry an 18" wall, the flanges must at least be 15" wide.

Assume a 15" x  $\frac{3}{8}$ " plate and angle irons 3" x 3" x  $\frac{3}{8}$ ". As rivet holes must be deducted, let the rivets be  $\frac{3}{8}$ " diam.

Then  $a$  would be

Plate  $15" - 2 \times \frac{3}{8}"$  (two rivet holes) x  $\frac{3}{8}" =$

$(15" - 1\frac{1}{2}") \times \frac{3}{8}" = 13.5 \times .375 = 5.06$  sq. in.

Angle irons  $(3" + 3") - (2" \times \frac{3}{8}") \times \frac{3}{8}" = (6" - 1\frac{1}{2}")$

$\times \frac{3}{8}" = 4.5 \times .375 = 1.68$

$5.06$  (plate) +  $1.68$  (angle irons) =  $6.74$  sq. in.

This is scarcely strong enough, and as in this class of question, it is always well to

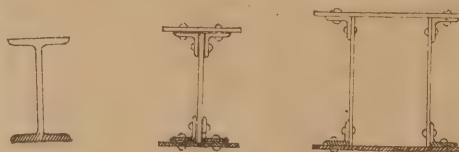


FIG. 1.

15in.

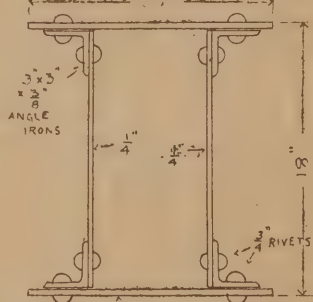


FIG. 2.

work the calculations out to a nicety, the amount of metal in the angle irons must be increased a little.

If they be made  $\frac{1}{2}$ " thick, then

$$\text{Angle irons } (3" + 3") - (2" \times \frac{3}{8}") \times \frac{1}{2}" = 4.5" \times .5 = 2.25"$$

And  $4.06$  (plate) +  $2.25$  (angle irons) =  $6.31$  sq. in., which is slightly in excess of the required  $6.15$  sq. in.

It is well to bear in mind, however, that neither cast nor wrought iron are much used now for girders. Cast iron is unreliable, and has so been acknowledged for many years, while steel can now be produced so cheaply and has so many advantages over wrought iron as to have almost entirely taken its place for structural work, rolled iron being difficult to obtain.

The formulae given in these articles are only applicable to the simple cases of single centre or uniformly distributed loads. More complex cases of unevenly placed loads are of common occurrence, and in such cases resource must be had to the system of equation of moments or to the use of the stress diagram.

NOTE.—In calculating the area of the flange, Hurst says include one-sixth the area of the web, but as the difference made is so extremely small, this has been intentionally omitted in the text.

A Technical School for Barrow is to be erected from plans by Messrs. Woodhouse and Willoughby at a cost of about £15,000. The building will be of a very handsome character.

## Engineering Notes.

**Extension of Waterworks.**—A scheme, which will provide for the erection of two new reservoirs, one at Little Denny and the other at Earlsburn, at a cost of £43,500, has been passed by the Falkirk and Larbert Water Trust.

**The New Isolation Hospital, Aldershot,** is being warmed and ventilated by means of Shorland's patent Manchester stoves, with ornamental tiled sides and with descending smoke flues, supplied by Messrs. E. H. Shorland and Brother, of Manchester.

**Tramways in the Potteries.**—Electricity on the overhead system has superseded steam as the motive power for tramcars throughout the Staffordshire Potteries. The exchange has cost approximately £80,000, and when the extensions now in progress are completed the mileage will be one of the most extensive, if not the largest, owned by any private company.

**Proposed Graving Dock at Belfast.**—A deputation from the Belfast Harbour Commissioners waited on Mr. Goschen last week to ask for the construction of a graving dock of sufficiently large dimensions to enable Belfast to construct warships of the first-class. The First Lord of the Admiralty replied that however much Her Majesty's Government might desire to grant the request, he could not hold out to the commissioners any prospect for the near future.

## Masters and Men.

**Leeds French Polishers** have obtained an advance of  $\frac{1}{2}$ d. per hour. This brings the standard rate up to 8d. per hour.

**Formation of a Painters' Union at Perth.**—At a meeting of Perth painters the advisability of forming a branch of the Scottish Amalgamation in Perth was considered. After some discussion it was decided to take the necessary steps for the formation of a branch.

**A Meeting of Edinburgh Plumbers** was held last week, when it was ascertained that about 380 men were on strike. It was anticipated that a favourable reply would be received from the Master Plumbers' Association, as twenty-two masters have already signed the new bye-laws and granted the increase of wages. The men are anxious to settle the matter by arbitration, but the masters will not accept any of the gentlemen suggested as arbiters.

**State of Trade Abroad.**—In New Zealand the building and engineering trades have been busy, and all workmen fully employed.—A satisfactory state of affairs prevails in the Transvaal, the number of unemployed having considerably decreased.—A strike of 3000 building trade operatives took place at Carlsbad, in Austria, which lasted over a week, and is said to have been due to the proposed introduction of new working rules by the employers. A settlement was obtained by the employers and workpeople agreeing to draw up a new set of rules conjointly.

**Edinburgh and Leith Joiners' Strike.**—A meeting of the joiners on strike was held in Edinburgh last week. It was resolved that in view of misunderstandings regarding the by-laws, a copy should be issued to masters, and that, on their signing the same, their workman would be allowed to resume work. The signing of the bye-laws meant that the agreement would remain in force for a year, and that the rate of wages for that period would be 9 $\frac{1}{2}$ d. per hour. At a previous meeting it was resolved that none of the men be allowed to resume work until the Masters' Association had signed the bye-laws conceding the increase of wages. Seven masters have signed the new by-laws.



# THE DISPUTE IN THE BUILDING TRADE.

THE trouble in the Building Trade is practically at an end. There will be no general lock-out, such as has been looked forward to, and it is to be hoped that the conference, which has been arranged, will result in a happy ending of all the trouble.

In Sheffield the building trade has been in a very satisfactory condition, and it was hoped that the dispute would not be taken part in in that city; but unfortunately for their hopes the Sheffield Association of Master Builders decided to follow in the steps of other Yorkshire firms and lock out 25 per cent. of the men. It was feared that a large number of the small firms, who are financed by property owners, would not fall in with the movement, but they have agreed to do so. The number of men employed in the building trade in Sheffield is about 1,000.

The position of the masters at Hull at the

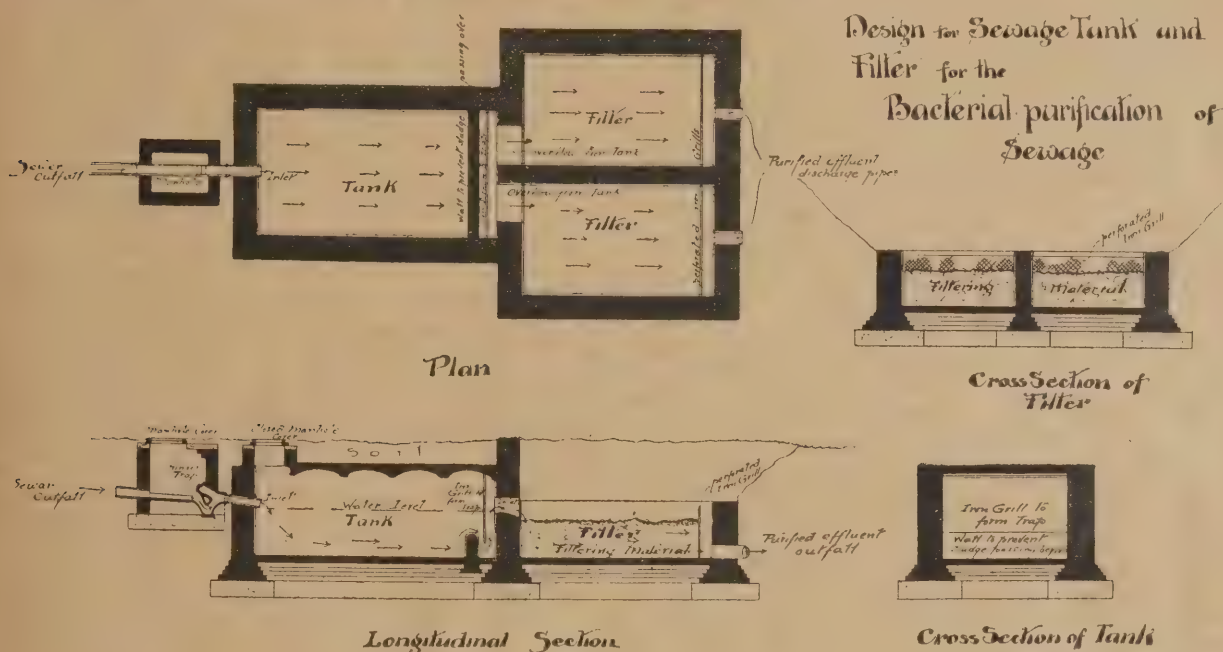
for a building where society men were employed has led to the temporary abandonment of a contract. The men are trying to overcome this "boycott" by smuggling sand into the city, and the fact that twenty-three plasterers with eleven labourers are still engaged, is satisfactory to them.

A conference of the representatives of practically the whole of the trades unions in the building trade of the United Kingdom was held in Manchester at the beginning of last week. Over 230,000 operatives were represented. A resolution was passed condemning in the strongest possible terms the "untrue and misleading" statements contained in the manifesto issued by the Yorkshire Master Builders' Federation. The meeting further expressed the opinion that the points raised by the master builders are not of sufficient importance to justify a lock-out in the building trades, and that they were prepared to meet the National Association of Master Builders in open conference.

At a meeting of the executive of the Yorkshire Master Builders' Association, held on Tuesday, last week, a reference was made to

left to local committees of employers and workmen, who will settle the question in each district. On the vexed question of demarcation, it is recommended that a committee of employers and workmen in equal numbers should settle the question whenever it arises. Each union affected is to have an equal number of representatives on these committees, so that if, for instance, the bricklayers and the plasterers are affected, each would have three representatives to the employers' six.

The vexed question of the employment of non-unionists is, perhaps, the greatest difficulty to contend with in coming to a basis of settlement. The plasterers resolutely refuse to pledge themselves to work harmously with non-unionists. The settlement on this is somewhat on the lines of Rule 10 of 1896. There is to be no stoppage of work until six days have elapsed after a written notice from the workmen has been sent to the employers as to the matter in dispute. But in no case are workmen to be bound to continue at work for any employer who pays any man in his employ less than the standard rate of wages of the district. All



BY ALBERT C. FREEMAN.

beginning of last week was weak. A report was made by the men's organisation of an application by a member of the Masters' Federation for thirty men, bricklayers, joiners, and labourers, to commence work. The men looked upon this as a very important secession. Later on in the week the masters employed several non-union men, and anticipated being strong enough to hold out until the end.

The Halifax masters are now all in the Federation. One by one districts in which the lock-out has been delayed are falling into line with the general body. A well-attended meeting of the members of the Cardiff Master Builders' Association received a communication from the Operative Stone Masons' Society stating their willingness to meet their committee to discuss the various matters in dispute, with a view to settlement. It was decided to fix a date for this purpose.

Leicester builders have been able to treat the dispute with equanimity, as they have been able to obtain good plasterers from Dublin and other parts of Ireland.

The example set by the plasterers at Leeds is likely to be followed by the bricklayers. They fully recognise that if they compete with the masters and obtain sufficient jobs to keep them going they can hold out indefinitely. The only way by which the masters can prevent this is by stopping supplies of materials. That this has been done is apparent from the fact that the originators of the co-operative scheme have had some difficulty in obtaining sand; and inability to procure pressed bricks

the conference of trade union representatives at Manchester. An emphatic denial was given to the assertion that the manifesto of the Yorkshire Federation was "untrue and misleading."

A representative meeting of the master builders of North Staffordshire, held last week, decided unanimously not to lock out the trades' unionists in the district who supported the plasterers' dispute, as they considered such a course was unnecessary and unjust. In their opinion the dispute could be settled by arbitration.

The result of the important meeting of master builders in Birmingham last Thursday was that a resolution was passed agreeing to receive favourably any proposal for a conference, with the view of an amicable adjustment of all matters in dispute, and that such a conference should be held before the end of this month. The decision of the Standing Committee of the National Association of Master Builders to accept the proposals of the Plasterers' Union, brings matters to a very satisfactory condition. These proposals practically amount to a return to the status quo which existed before the present lock-out of plasterers began, and the new working rules will be very similar (should they be accepted) to those which were agreed to on July 1, 1896. The employers offer to accept the assurance as shown by the last vote of the members of the Plasterers' Union, that there is no desire to force managing foremen to take up a union ticket. The question of apprentices will be

contractors are also bound to pay the rate of wages current in the district.

As we have before remarked this settlement might have been arrived at long ago. Nothing has been gained by prolonging the dispute. The men go back to work practically as they came out.

## NEW SEWAGE TANK AND FILTER.

THE design by Mr. Albert C. Freeman, here reproduced, for a sewage tank and filter bed for the bacterial purification of sewage, illustrates a method of horizontal filtration. The sewage enters a manhole and passes through a "Winner trap" into the sewage tank, and at the end of the tank is constructed a dwarf wall to prevent paper and sludge passing beyond into the trap. The height of this wall would be arranged as thought fit to suit the required arrangement. Behind the wall is an open space divided with an iron screen which forms a trap. After passing the screen, the sewage flows horizontally through the filter beds, and, having passed to the end of the filtering material, runs through the outlets at the end of the tank which are placed at the bottom. The filtering material is kept clear from the purified effluent outfalls by means of perforated iron screens, thus leaving the outlets perfectly clear and in no way obstructed.



## Builders' Notes.

**Large Consignment of Jarrah Wood.**—The Adèle has arrived in London with about 750 loads of Jarrahdale Jarrah on board to the order of the Jarrahdale Jarrah Forests and Railways, Limited, 1, Fenchurch Avenue, London, E.C.

**New Buildings Made from Old.**—James Tozer was summoned, at a special sitting of the Southend Borough Bench, last week, for erecting a building of combustible material and not sending in plans. It was mutually agreed that the "building" was a wooden shed in the back garden which had been there six years, but a few months ago Mr. Tozer bodily moved it a yard or two. Thereupon it became a new building. Defendant was fined 10s. and 12s. 6d. costs. After this conviction the corporation have power to pull the building down.

**A Mistake in a Tender.**—At a recent meeting of the members of the Gloucester School Board tenders were received for the erection of a new school. The lowest tender, that of Messrs. Gurney Bros., for £8,700, which was £5,676 below the highest tender sent in, was accepted. After the acceptance of this tender a communication was received from Messrs. Gurney Bros. to the effect that they had made an error in their estimate, and asked to be allowed to send in an amended tender. The Board did not think such a course would be fair, and accepted the next lowest tender—that of Messrs. John Gurney and Sons, of Gloucester, for £11,548.

**Aberdeen Building Trades' Federation.**—The fourth annual report states that the year just closed has been one of the most uneventful the organisation has ever experienced. An effort had been made to induce two trades which had never been connected with the Federation, viz. the masons and plasterers, to join, the result of which was that the plasterers had affiliated with them, but the masons declined to do so, and there appeared very little probability of their becoming part of the Federation so long as the existing arrangements between their Union and the employers continued. During the year two conferences of building trade workers had been held under the auspices of the Federation. The first one went off very satisfactorily. At the second, the question of Federation was fully dealt with. A variety of views were expressed as to what was the best form of Federation, and while some would be content with nothing short of an ideal scheme, others were prepared to accept any form, however feeble, so long as a beginning was made with what all agreed was desirable.

**Liabilities of Builders and Contractors.**—A case was heard at the Aberdeen Sheriff Court by Sheriff Burnett, in which James Leask, slater, of Magdalen Place, Aberdeen, sued Robert Mitchell, builder, of 3, Elmfield Place, Aberdeen, for £19 2s. 8d., the balance due for slating work done by him on a house at West Cults, which the defendant had built for a Mrs. Davidson. The plaintiff alleged that he tendered for the work on plans and measurements submitted by defendant; that the plans submitted were not the true plans of the house, and the measurements were greatly understated; that he was not bound by his offer to do the work for a lump sum, but was entitled to be paid at contract rates for the work actually done. The defendant pleaded that in making the contract he was acting only as Mrs. Davidson's servant, and was therefore not liable; that plaintiff had contracted to do the whole slating work of the house for a lump sum; that the contract had not been completed, and that, taking into account the cost of completing the work, nothing was due to plaintiff. The sheriff found that the plaintiff duly performed the work set forth in the account sued for, and that the charges made in the account were fair and reasonable; that the work was per-

formed by the plaintiff on the employment and instructions of the defendant; that in employing and instructing the plaintiff to perform the work the defendant did not name a third party as the person to be responsible for payment of the same. The defendant was the person responsible for such payment, and he, therefore, ordered him to pay the amount claimed, with costs.

**A Smoke Nuisance Prosecution.**—At Dewsbury last week Messrs. Howroyd and Oldroyd, Drysalters, of Fall Lane, were charged with permitting the issue of smoke from the chimney of their works, so as to be a nuisance. It was denied that black smoke had been emitted, and the firm declared that waste logwood and other dyewoods had been mixed with the coal, the result being that the smoke was grey and not of the colour described. The Bench thought otherwise, and made an order for an abatement within three months.

**Worcester Improvements.**—A special meeting of the Hop Market Guardians was held last week to receive the recommendations of the joint committee of the Guardians of the City Council, with reference to the widening of the Foregate by setting back the Hop Market Hotel. The Guardians had already agreed to set the hotel back 8ft. on receipt of £3,000 from the Council, and the joint committee now recommended that an additional 62 square yards be sold to the Council for £4,250, which will give a width of 42ft. to the roadway, on condition that the Council undertake to acquire what further property is necessary to provide a width of 42ft., the whole length of the Foregate, within five years of their obtaining a provisional order for compulsory purchase. The Guardians agreed to this recommendation, and at a special meeting of the City Council subsequently held, the Council also unanimously agreed to the terms of the recommendation.

### Are Altered Buildings New Buildings?

—At Thorpe Police Court, last week, Edward Charles Ward, a lawyer's clerk, residing in London, was summoned for committing a breach of the Clacton Urban District Council's bye-laws, by not providing sufficient air space at the rear of new buildings, of which he was the owner. Mr. Glen, for the Urban Council, explained that defendant was the owner of two dwelling houses at the corner of Rosemary Road, Clacton. In 1897 defendant proposed to make some alterations, and submitted plans to the council, which were not approved by that body as the buildings would encroach too far upon the roadway. In February 1898 fresh plans were deposited, and these being satisfactory were passed. The plans showed that a proper air space, 20ft. had been allowed at the back of the buildings. In December, last year, the local authority found that the proper air space had not been allowed, and the defendant was given notice of this discovery. Defendant replied by stating that the provisions in the bye-laws as to air space only applied to new houses, and therefore did not affect his works, which were in connection with old buildings. The question then arose whether these works constituted an addition to an old building, or whether they converted the whole into a new building. Mr. Glen contended that the alterations had made them into new buildings within the meaning of the bye-laws. Mr. Pritchard, for the defendant, argued that the premises in question were not new buildings, but merely consisted of additions to old buildings, which were erected before the District Council was constituted; therefore, he said, the authority's bye-laws did not affect the premises. He pointed out that in all the correspondence on the subject, the Council's officers referred to the premises as "alterations and additions." The Bench retired to consider their decision, and on returning to the court, the chairman announced that they had come to the conclusion that the premises in question were new buildings, and that a breach of the bye-laws had been committed by the defendant, who was fined 20s. and costs.

## Surveying and Sanitary Notes.

**Newcastle's Street Improvement Expenses.**—The annual report of the City Engineer (Mr. W. G. Laws) for Newcastle was issued recently. The report states the Town Improvement Committee is 'underspent by' £514, to which must be added a credit amount of monies received for flushing drains, &c., £84; leaving a total credit balance of £598. From this has to be deducted items not carried out, as follows:—Alterations of De Grey Street, £420; making the total £178. So that everything included, the result of the year's work is a small margin of £178 not spent. The expenditure of the Sanitary Committee has also been fairly close to the estimates, or £551 underspent, on paper; but from this there fails to be deducted unexecuted items to the amount of £601, thus leaving a net excess of £50 over the estimated cost of the work actually done. This difference being scarcely more than 0.1 per cent. on the gross estimate, needs no special explanation. The amount paid out of the rates for the repair and maintenance of streets and highways came to a total of £24,372; the macadam roads cost £11,650.

**A Road-making Case.**—The objections to the making of the Heathfield Road at Hayward's Heath were heard by Major Borrer and other magistrates recently at the Hayward's Heath Petty Sessions. It seems that the initial difficulty was whether the road could be considered a street within the meaning of the Act. The rapid rise of new buildings enabled counsel to state that it was a street. In making the plans and specifications a great deal of work was found to be required to form a road out of a very rough track. The Urban Council decided upon granite as the material, and debated the question of paved or unpaved paths, the majority being in favour of the kerbed path only. The rise of wages demanded in the local labour market had added to the estimated cost, and at the hearing Mr. Prince, for the Council, said that the estimated cost of making, sewerage, and kerbing and channelling the road was £1,412. The point raised by the objectors was that the estimated expenses were excessive. Particular stress was laid on the fact that the use of flints instead of granite would save £135. The magistrates retired to consider the case, and on their return the Chairman said they agreed to the plans and specifications, but with regard to the apportionments they would amend them, so that the difference between the cost of granite and flints, about £135, should be deducted from the £1,412, and paid for out of the rates. The balance should be primarily borne by the frontagers, but those frontagers who had made provision for their drainage should be required to pay one-half, and the remainder charged to the rates, and, similarly, the proportionment of those owners whose properties had frontages to other roads should be reduced one-half, and the balance charged to the rates.

**Alleged Extravagance at Southend.**—At a special sitting of the Southend Borough Bench, last week, before Mr. G. F. Jones (in the chair), and Messrs. H. Wood and C. Woosnam, several owners, in Osborne and Windsor roads respectively, objected to the specification and apportionment of the Corporation in respect to the making up of those roads, alleging that the Council's requirements were unreasonable and extravagant. The requirements of the Town Council were that the owners should pay for a new sewer, artificial stone paving, granite kerbing, and the expense of the lighting plant.—Mr. Powell, for the objectors, said there was already a sewer in the street; no question of lighting was mentioned in the notice (so that it could not be charged), and asphalt and brick channelling (about half the cost of the other) were all that was necessary in this side street. Mr. Snow, for the Corporation, replied that the existing sewer



was defective, but under all the circumstances the corporation would not press their claim for the expense of the laying of a new one. Since the borough had been incorporated the corporation had been saddled with an expense of £800, because some of the streets which had been taken over were not properly channelled. He urged that there was no need to enumerate all the works (such as lighting) in the notice. —Mr. Fidler, the borough surveyor, considered that the Local Government Board would readily allow a loan for twenty years if artificial stone paving was used, but only for ten years if asphalt. —Alderman Ingram and other owners thought the requirements of the Town Council unreasonable in these side streets. —The court decided that the expenses of the sewer and the provision and means of lighting, and all expenses connected therewith, should be eliminated from the apportionment; but they held that the provision of artificial stone and granite kerbing and channelling was reasonable, and the cost not excessive.

**Market Drayton Sewage Scheme.**—A Local Government Board inquiry into an application by the Rural District Council for power to borrow £2,400, for sewerage and sewage disposal works was held last week. There was no opposition.

**Newcastle-under-Lyme Sewerage.**—There was no opposition at the Local Government Board inquiry with reference to an application by the Town Council, for power to borrow £865 for new sewerage works in Keele Road. It was explained that the new works were required in consequence of the opening up of a district known as Pool Fields. The length of sewer would be 1110yds.

**The Gold Medal of the Surveyor's Institution,** given to the winner of the highest place in the Fellowship examinations, has this year been awarded to Mr. Sydney Arthur

Smith. Mr. Smith was also the winner of the Pentfold Silver Medal and the Driver prize at the Professional Associates' Examination in 1897. He has, therefore, gained unusual distinction in his course through the various stages to full membership. He is at present engaged with Messrs. Weatherall and Green, surveyors and auctioneers, 22, Chancery Lane, having served his articles with Mr. Thornton, Westminster, and also had experience in the office of Messrs. Ernest George and Yeates.

**Liverpool Improvements.**—Mr. Vigers, arbitrator, who sat recently at Liverpool to determine the amount to be paid by the Corporation to the Mersey Dock Board, as the purchase price of the site of George's Dock, has delivered his award. The dock is to be acquired for an extensive scheme of city improvement. It will be filled up, and the site utilised for new streets, &c., the Dock Board reserving a portion for their new pile of offices. Mr. Vigers awards total £305,224.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—</b>			
May 26	Artemore, Scotland—Villa	W. C. Slingsby	D. Croft, Clunie, Newtonmore.
" 26	Carlton—Six Cottages		J. Hartley, Architect, Exchange-buildings, Skipton.
" 26	Colchester—Kiln and other Works		The Owners of the Maltings, The Hythe, near Colchester.
" 26	Disblair, Scotland—Alterations, &c., to Offices		G. Reid, Bellfield, Disblair.
" 26	Elgin—Additions and Alterations to House		C. C. Doig, Architect, Elgin.
" 26	Harwarden—Six Cottages		R. J. Kendrick, Solicitor, Wrexham.
" 26	Skipton—Infirmary	Guardians	J. Hartley, Architect, Exchange-buildings, Skipton.
" 26	York—Slatting Asylum Buildings	Committee of York Lunatic Asylum	W. Hepper, 4, Spurrigergate, York.
" 27	Workington—Two Cottages, Stable, &c.	N. Bird	W. G. Scott & Co., Architects, Victoria-bldgs., Workington.
" 27	York—Four Dwelling-houses, &c.		T. Robinson, Fox Inn, Holgate.
" 27	Stonehaven—Cottages		Captain Moir, Harbour Master, Stonehaven.
" 27	Henley-in-Arden—Erection of Schoolroom	Oddfellows' Lodge	F. B. Endell, Architect, Solihull.
" 27	Haydon Bridge—Villa		W. Bedlington, 23, Eldon-square, Newcastle.
" 27	Brydekirk, Annan, Scotland—Hall		W. Thornburn, Schoolhouse, Brydekirk.
" 27	Bedale, Yorks.—Manse and Pair of Cottages		W. Peachey, 3, Amber-street, Saltburn.
" 27	Hampton—Works at Volunteer Drill Hall	Trustees of Parochial Charities	F. G. Hughes, Surveyor, Estates Office, Hampton-on-Thames.
" 29	Birtley—Literary Institute		Liddle & Browne, Architects, Prudential-bldgs., Newcastle.
" 29	Bristol—School	School Board	H. C. M. Hirst, 30, Broad-street, Bristol.
" 29	Bristol—School	School Board	H. D. Bryan, 38, College-green, Bristol.
" 29	Westend, near Southampton—Room	Stoneham Union Guardians	Mitchell, Son, & Gutteridge, 9, Portland-st., Southampton.
" 30	Boston Spa—Residence		W. H. and A. Sugden, Architects, Keighley.
" 30	Keighley—Masonry for Bridge	Corporation	W. H. Hopkinson, Borough Engineer, Keighley.
" 30	Newton Heath, Lancs.—Culvert	Lancs. and Yorks. Railway Company	Engineer's Office, Hunt's Bank, Manchester.
" 30	Wakefield—Roofing, Loading Stage, &c.	Lancs. and Yorks. and G.R. Railways	Engineer's Office, Hunt's Bank, Manchester.
" 30	Cheltenham—Reconstruction of Baths		J. Hale, Borough Surveyor, Municipal Offices, Cheltenham.
" 30	Talgarth, Wales—Asylum		Giles, Gough, & Trollope, 28, Craven-st., Charing Cross, W.C.
" 30	Darlington—Electric Light Buildings	Corporation	Borough Surveyor, Town Hall, Darlington.
" 31	Evesham—Shops and Residences	W. and H. Smith, Ltd.	G. H. Hunt, Architect, Evesham.
" 31	Gravesend—Engine House and Boiler House	Gravesend and Milton Water Co.	J. Mansergh, 5, Victoria-street, S.W.
" 31	Sutton, Surrey—Offices, &c.	Urban District Council	C. C. Smith, Surveyor, Public Offices, Sutton.
" 31	Bradford-on-Avon—Alterations, &c. to Brewery	W. B. Harding and Co., Ltd.	W. H. Stanley, Architect, Market House-chbrs., Trowbridge.
" 31	Cambsore, Cornwall—Post Office and Residence		O. Coldwell, Architect, Penzance.
June 1	Gateshead—Isolation Hospital, &c.	Health Committee	J. C. Bower, Borough Engineer, Town Hall, Gateshead.
" 1	Halifax—Liberal Club Premises	Baptist Connection	M. Hall, 29, Northgate, Halifax.
" 2	Merthyr Tydfil—Altering, &c. Chapel		J. Morgan, Accountant, Waterloo-chbrs., Merthyr, Tydfil.
" 3	Leith, Scotland—Roof	North British Railway Co.	Blyth and Westland, 135, George-street, Edinburgh.
" 3	Lisnakea, Ireland—12 Labourers' Cottages, &c.	Rural District Council	J. O'R. Hoey, Clerk, Lisnakea.
" 3	Pontypridd—Alterations, &c. to County School		A. O. Evans, Architect, Post Office-chambers, Pontypridd.
" 5	London, N.—Workmen's Dwellings	Hornsey Urban District Council	E. J. Lovegrove, Surveyor, Offices, Southwood-lane, Highgate, N.
" 5	Morley—School	School Board	T. A. Buttery and S. B. Birds, Architects, Queen-st. Morley.
" 5	Barking, Essex—83 Cottages	Urban District Council	C. J. Dawson, Surveyor, Public Offices, Barking.
" 5	Cefn Mawr, Wales—Alterations, &c., to Chapel	Ebenezer English Baptist Chapel	J. W. Jones, Architect, Brooklea, Acrefair, Ruabon.
" 6	Brierley Hill, Staffs.—Hot-water Apparatus	Kingswinford U.D. School Board	T. Robinson, Architect, Victoria-chambers, Stourbridge.
" 6	Cardiff—Carriage Shed and Covering over Steps	Great Western Railway Co.	Resident Engineer, Theatre Royal-chambers, Cardiff.
" 6	Leyton, Essex—Chimney Shaft	Urban District Council	W. Dawson, Council Offices, Town Hall, Leyton.
" 6	London, W.—Station	Great Western Railway Co.	Engineer, Paddington Station, W.
" 9	Porthcstock, Cornwall—Coastguard Buildings	Admiralty	Director of Works Department, 21, Northumberland-avenue, London, W.C.
" 12	Brothertoft, Lincs.—School Enlargement	School Board	J. H. Tooley, 6, Bridge-street, Boston.
" 15	Warrington—Police Buildings and Offices	Watch Committee	Borough Engineer, Town Hall, Warrington.
July 27	Brighton—Alterations, &c. to Library, Museum, &c.		F. J. C. May, Town Hall, Brighton.
<b>ENGINEERING—</b>			
May 26	Birkenhead—Electric Meters	Corporation	W. Bates, Corporation Electricity Supply Station, Bentinck-street, Birkenhead.
" 26	Greenwich, S.E.—Sinking Well	Union Guardians	T. Dinwiddy, 12, Croom's-hill, Greenwich.
" 26	Forres, Scotland—Waterworks		G. Gordon and Co., Civil Engineers, Inverness.
" 27	Llandudno—Boat Jetty	Urban District Council	E. P. Stephenson, Engineer to Council, Church-walks, Llandudno.
" 29	Brighton—Switchboards, &c., at Electricity Works	Town Council	F. J. Tillstone, Town Clerk, Town Hall, Brighton.
" 29	Irvinestown and Pomeroy, Ireland—Station Roofs	Great Northern Railway Co. (Ireland)	Company's Engineer-in-Chief, Amiens-st. Terminus, Dublin.
" 29	Winwick, near Warrington—Railway Siding Extension	Lancs. Asylums Board	R. Curran, Engineer, Horsemarket-chambers, Warrington.
" 29	Blue Anchor, near Watchet—Sea Wall, Road, &c.	Somerset County Council	C. A. Brereton, 21, Delahay-street, Westminster.
" 30	Kilkenny—Waterworks	Corporation	J. F. Reade, Engineer, Town Hall, Kilkenny.
" 30	London, E.C.—Iron or Steel Winches	James' Syndicate, Ltd.	Office, 18, Billiter-street, London.
" 31	Clacton-on-Sea—Sea Defences	Commissioners	T. A. Cressy, Surveyor, Clacton-on-Sea.
" 31	London—Telephones, Fire Alarms, &c.	London County Council	R. W. Partridge, 6, Waterloo-place, S.W.
" 31	Bexley, Kent—Installation of Telephones, Fire Alarms, &c.	L.C.C. Asylums Committee	R. W. Partridge, 6, Waterloo-place, S.W.
June 1	Crewe—Electric Lighting Plant	Corporation	Hopkinson and Talbot, 26, Victoria-street, London, S.W.
" 1	London, N.—Electric Light Installation	Islington Guardians	W. Smith, 65, Chancery-lane, W.C.
" 1	Ashton-under-Lyne—Watercourse	District Waterworks Co.	G. H. Hill & Sons, Albert-chambers, Albert-sq., Manchester.
" 1	Cowes—Retorts, Firebricks, &c.	Urban District Council	W. Halliday, 40, High-street, Cowes, Isle of Wight.
" 2	Tonbridge, Kent—Opening Ground for Gas Mains	Gas Company	J. Donaldson, Secretary & Manager, Gasworks, Tonbridge.
" 5	Sheffield—Engines, Electric Lighting Plant, &c.	Health Committee	C. F. Wike, City Surveyor, Town Hall, Sheffield.
" 6	Acton, Middlesex—Station	Great Western Railway Co.	Engineer, Paddington Station, W.
" 6	Newbridge, Mon.—Subway	Great Western Railway Co.	Resident Engineer, Theatre Royal-chambers, Cardiff.
" 6	Romiley—Bridge Works	Urban District Council	J. W. Bain, Clerk, School Brow, Bredbury.
" 6	Patricroft, Lancs.—Wiring, Lamps, and Fittings	Urban Guardians	G. B. Peers, 96, Deansgate, Manchester.
" 7	London, S.W.—Electric Lighting Works	St. Mary's Vestry, Battersea	Vestry Clerk, Municipal Buildings, Lavender Hill, S.W.
" 8	Halifax—Electric Lighting	Guardians	Shepherd and Watney, Greek-street-chambers, Leeds.
" 10	Naples—Harbour and Docks		Public Works Department, Rome.
" 13	London, N.E.—Electricity Supply Mains	Hackney Vestry	R. Hammond, 64, Victoria-street, Westminster.
" 13	London, S.W.—Fire Float	London County Council	Clerk's Department, County Hall, Spring-gardens, S.W.
" 13	Manchester—Widening Line	Lancs. and Yorks. Railway Co.	Engineer's Office, Hunt's Bank, Manchester.
" 14	Shotley Bridge—Gasholder Tank	District Gas Company	T. Newbigging and Son, 5, Norfolk-street, Manchester



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—Continued.</b>			
June 17	Wolverhampton—Water Softener .....	Corporation .....	J. W. Bradley, Borough Engineer, Town Hall, Wolverhampton.
" 19	Toronto, Canada—Tower Clock, Bells, & System of Clocks .....	Board of Control .....	Street and Co., 30, Cornhill, London, E.C.
" 19	Horton, Christiania—Two Centrifugal Pumps, &c. ....	Government Dockyard Authorities .....	Commercial Department, Foreign Office, S.W.
" 30	Shanghai—Tramway Concession .....	Municipal Council .....	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
<b>ROADS AND CARTING—</b>			
May 26	London, W.—Stone Slabs .....	Acton Urban District Council .....	D. J. Ebbetts, 242, High-street, Acton.
" 27	Copford, near Colchester—Materials, &c. ....	Lexden and Winstree B. D. C. ....	J. Ennals, Surveyor's Office, Copford, near Colchester.
" 27	Uttoxeter, Staffs.—Carting .....	Rural District Council .....	J. Preston, Surveyor, Woodlands, Uttoxeter.
" 27	Trowbridge—Kerbing, Channelling, &c. ....	Urban District Council .....	F. E. G. Bradshaw, Surveyor, Town Hall, Trowbridge.
" 29	East Grinstead—Materials and Steam Rolling .....	Urban District Council .....	R. Wilds, Surveyor, Council Offices, East Grinstead.
" 29	Eccles, Lancs.—Sewering, Paving, &c. ....	Highways Committee .....	A. C. Turley, Borough Surveyor, Town Hall, Eccles.
" 29	Ardee, Ireland—Road Maintenance .....	Rural District Council .....	T. B. Dromgoole, Clerk, Board Room, Workhouse, Ardee.
" 29	Waterloo, Lancs.—Granite Cubes .....	Urban District Council .....	F. S. Yates, Surveyor, Town Hall, Waterloo.
" 30	Maidstone—Road Materials, &c. ....	Urban District Council .....	T. F. Bunting, Borough Surveyor, The Fair Meadow, Maidstone.
" 30	Barnet—Kerbing, Making-up, &c. ....	Urban District Council .....	W. H. Mansbridge, 40, High-street, Barnet.
" 30	London—Laying Wood Paving .....	Willesden District Council .....	O. C. Robson, Office, Dyne-road, Kilburn.
" 31	Kingston-on-Thames—Tarpaving, &c. ....	Corporation .....	Clerk, Clattern House, Kingston-on-Thames.
" 31	Liverpool—Reconstructing Road .....	Sefton Rural District Council .....	H. P. Cleaver, Clerk, Brougham-terrace, Liverpool.
" 31	Wolverhampton—Materials .....	Tramways Committee .....	W. Bradley, Borough Surveyor, Town Hall, Wolverhampton.
" 31	Desborough—Granite .....	Urban District Council .....	D. J. Diver, Surveyor, Council Offices, Desborough.
" 31	Burgess Hill, Sussex—Flints .....	Urban District Council .....	Clerk to Council, Burgess Hill.
" 31	Hertford—Road Repair .....	Rural District Council .....	T. J. Swarder, Clerk, Council Offices, Hertford.
" 31	Oswaldtwistle, Lancs.—Street Works .....	Highways and Drainage Committee .....	R. M. Hunter, Surveyor, Town Hall, Oswaldtwistle.
" 31	Rochdale—Paving, &c. ....	Paving, &c., Committee .....	S. S. Platt, Borough Surveyor, Town Hall, Rochdale.
" 31	Woodbridge—Materials .....	Rural District Council .....	J. B. Davison, Surveyor to Council, Woodbridge.
June 3	Slough—Setts and Paving .....	Urban District Council .....	W. W. Cooper, 1, Mackenzie-street, Slough.
" 5	Wimborne, Dorset—Road Works .....	Urban District Council .....	C. Munton, Surveyor, Wimborne.
" 5	London, N.—Works .....	Hornsey Urban District Council .....	E. J. Lovegrove, Council's Engineer, Southwood-lane, Highgate, N.
" 6	Branksome, Dorset—Street-paving Works .....	Urban District Council .....	S. J. Newman, 3, Tennyson-bldgs., Ashley-road, Branksome.
" 7	Cardiff—Kerbing .....	Glamorgan County Council .....	County Surveyor, Town Hall, Bridgend.
" 7	Kettering—Street Works .....	Urban District Council .....	I. E. Smith, Surveyor, Market Hill, Kettering.
" 7	Old Hill, Staffs.—Forming, &c., Road .....	Rowley Regis Urban District Council .....	D. Wright, Clerk, Council Offices, Old Hill.
" 8	Reading—Improvement Works .....	Sanitary Authority .....	J. Bowen, Borough Surveyor, Town Hall, Reading.
" 9	Shrewsbury—Hire of Steam Roller, &c. ....	Atham Rural District Council .....	J. Everest, Clerk, St. John's-hill, Shrewsbury.
" 30	Wolverhampton—Granite Setts .....	Streets Committee .....	J. W. Bradley, Borough Surveyor, Town Hall, Wolverhampton.
<b>IRON AND STEEL—</b>			
May 27	Copenhagen—Rails and Fastenings .....	Danish State Railways .....	Engineer-in-Chief, 11, Colbjornsensgade, Copenhagen V.
" 29	Wimbledon—Tram Lines, &c. ....	Urban District Council .....	C. H. Cooper, Engineer, Council Offices, Wimbledon.
" 29	Genoa—Nails and Bolts .....	Spezia Dockyard Authorities .....	Commercial Department, Foreign Office, S.W.
" 30	London, S.W.—Permanent Way Materials .....	Uganda Railway Committee .....	Crown Agents for the Colonies, Downing-street, S.W.
" 30	London, E.—500 Galvanised Iron Pails .....	Limehouse Board of Works .....	S. G. Ratcliff, Clerk, District Board Offices, Whitehorse-st., E.
" 31	Salford—270 Tons of Steel Rails, &c. ....	River Conservancy Committee .....	Borough Engineer, Town Hall, Salford.
" 31	London, E.C.—Galvanised Ironwork, Steel Plates, &c. ....	East Indian Railway Company .....	A. P. Dunstan, Secretary, Nicholas-lane, E.C.
June 2	Tonbridge—Cast-iron Pipes, &c. ....	Gas Company .....	J. Donaldson, Secretary and Engineer, Tonbridge.
" 5	Exeter—Cast-iron Pipes .....	Corporation .....	D. Cameron, 18, Bedford-circus, Exeter.
" 7	Trichinopoly—Water Pipes and Fittings .....	Government of Madras .....	H. S. King and Co., 65, Cornhill, London, E.C.
<b>PAINTING AND PLUMBING—</b>			
May 26	Darwen, Lancs.—Oils and Paints, Lead Pipe, &c. ....	Gas Committee .....	A. H. Smith, Engineer and Manager, Gasworks, Darwen.
" 27	Warrington—Painting Fire-engine House .....	Fire-engine Committee .....	T. Longdin, Borough Surveyor, Town Hall, Warrington.
" 27	Wingate—Painting Church and Schools .....	Primitive Methodists .....	T. Greenwell, Front-street, Wingate.
" 29	Wombwell, Yorks.—Paints, Oils, Lead, &c. ....	Urban District Council .....	J. Robinson, Clerk, Wombwell.
" 29	Bristol—Plumbing .....	School Board .....	H. D. Bryan, 38, College-green, Bristol.
" 29	Bristol—Plumbing .....	School Board .....	H. C. M. Hirst, 30, Broad-street, Bristol.
" 30	Barnet—Painting and Distemping .....	Workhouse Guardians .....	Master at Workhouse, Barnet.
" 30	Datchet—Cleaning and Painting Iron Bridge .....	Berks and Bucks County Councils .....	J. Morris, County Surveyor, Reading.
" 30	Heywood—Painting School .....	.....	W. H. Meadowcroft, Town Clerk's Office, Municipal-buildings, Heywood.
" 30	Hull—Painting Eleven Schools .....	Kingston-upon-Hull School Board .....	D. J. O'Donoghue, Clerk, School Board Offices, Albion-street, Hull.
" 31	Exmouth—Painting, &c., Public Lamps, &c. ....	Urban District Council .....	W. G. Harding, Surveyor, Exmouth.
" 31	Richmond, Surrey—Painting Workmen's Dwelling .....	Town Council .....	Borough Surveyor, Town Hall, Richmond.
June 2	London, W.—Painting, &c., Schools .....	St. Marylebone Guardians .....	Superintendent, St. Marylebone Schools, Southall.
" 5	London, W.—Painting, Cleaning, &c. ....	St. Marylebone Union Guardians .....	Superintendent at Schools, Southall.
" 27	Macclesfield—Painting Two Gasholders .....	Gas Committee .....	— Newbigging, Engineer, Gasworks, Macclesfield.
<b>SANITARY—</b>			
May 26	Salcombe Regis, near Sidmouth—Sewerage Works .....	Honiton Rural District Council .....	C. G. Warren, Surveyor, Commercial-chambers, Exeter.
" 26	St. Annes-on-Sea, Lancs.—Sewer .....	Urban District Council .....	H. Bancroft, 88, Mosley-street, Manchester.
" 27	Tanfield, Durham—Laying Sanitary Pipes .....	Urban District Council .....	E. Heslop, Surveyor, Burnopfield.
" 29	Tong, Yorks.—Sewer, &c. ....	Urban District Council .....	J. Drake and Son, Engineers, Queensbury, near Bradford.
" 30	Chingford, Essex—Sewer, &c. ....	Urban District Council .....	W. Stair, Surveyor, Chingford.
" 30	Barnet—Sewers .....	Rural District Council .....	W. H. Mansbridge, 40, High-street, Barnet.
" 30	Guisley—Sewers .....	Urban District Council .....	H. A. Johnson, 14, The Exchange, Bradford.
" 30	London, N.W.—Rebuilding Sewer .....	Willesden District Council .....	O. C. Robson, Public Offices, Dyne-road, Kilburn, N.W.
" 30	Leeds—Lime for Sewage Works .....	City Council .....	City Engineer, Municipal Buildings, Leeds.
" 31	Halifax—Sewage Works .....	Highways Committee .....	E. R. S. Escott, Borough Engineer, Town Hall, Halifax.
June 1	Alnwick—Sewers, &c. ....	Urban District Council .....	G. Wilson, Engineer, Council Offices, Alnwick.
" 1	Lymington—Drainage Works .....	Town Council .....	J. D. Rawlins, 38, High-street, Lymington, Hants.
" 2	Newburn-on-Tyne—Extension of Sewer Outfall .....	Urban District Council .....	T. Gregory, Surveyor, Newburn.
" 3	Slough—Sewer, &c. ....	Urban District Council .....	W. W. Cooper, 1, Mackenzie-street, Slough.
" 3	Pembroke Dock, Wales—Sewerage Works .....	Town Council .....	Beesley, Son and Nichols, 11, Victoria-street, Westminster.
" 8	Valetta, Malta—Stoneware Pipes .....	Crown Agents .....	Crown Agents for the Colonies, Downing-street, S.W.
" 13	Market Harborough—Sewers, &c. ....	Rural District Council .....	J. B. Everard, 6, Millstone-lane, Leicester.
<b>TIMBER—</b>			
May 26	London, N.—Oak Fencing and Gates .....	Wood Green Urban District Council .....	C. J. Gunyon, Engineer, Town Hall, Wood Green.
June 5	London, E.C.—Timber, Bricks, Lead, &c. ....	Corporation .....	Surveyor, Guildhall, E.C.
" 10	South Hetton—Colliery Timber .....	Coal Company, Ltd. ....	J. R. Lambert, South Hetton, Sunderland.

## COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
June 1	Leeds—Market Hall and Shops .....	£150, £100, £50 .....	Corporation.
" 6	Salford—Laying-out Site of Barracks .....	£30, £20, £10 .....	Corporation.
" 20	Tending, Essex—Sewerage Scheme .....	£21 .....	District Council.
" 27	Edinburgh—County Buildings .....	£200, £100, £50 .....	Midlothian County Council.
" 30	Wakefield—Central Buildings .....	£50, £30, £20 .....	Wakefield Industrial Society, Ltd., Bank-street, Wakefield.
" 30	Buckie, Scotland—Bridge over Burn .....	£26 5s. ....	Commissioners.
July 3	Harrogate—Kursaal .....	£150, £100, £75 .....	Corporation.
" 27	Plumstead—Municipal Buildings and Public Library .....	£100, £75, £50... ..	Edwin Hughes, Clerk, Vestry Hall, Maxey-road, Plumstead.



Property and Land Sales.

LOCAL SALE of PLOTS on MAY 31st.—ILFORD.—Uphall Estate, First Portion.—Free conveyances; payment by instalments: roads made; tithe and land tax free.—The special attention of Plot Buyers, Builders, and Creators of Ground-rents is directed to the sale of this Land, which is ripe for immediate building.—ONE HUNDRED and THIRTY-NINE PLOTS of ripe FREEHOLD BUILDING LAND, having frontages to the following thoroughfares, viz., Ilford-lane (a road 50ft. wide, leading from Ilford Broadway to Barking), Wingate-road, Natal-road, and Uphall-road. The plots vary in frontage from 16ft. to 37ft., and in depth from 90ft. to 125ft., and are ripe for the erection of small houses and shops, and the immediate creation of ground-rents.

MESSRS. DOUGLAS YOUNG and CO. will SELL the Above by AUCTION at the Angel Hotel, High-road, Ilford, on WEDNESDAY, MAY 31st, 1899, at SEVEN o'clock in the evening. Particulars and conditions of sale may be obtained at the Mart, E.C.; of the Solicitor, J. HOWARD SMITH, Esq., 7, Finsbury-circus, E.C.; or of the AUCTIONEER, 51, Coleman-street, E.C., Clapham and Ilford.

LAND SALE in a MARQUEE on the ESTATE on THURSDAY JUNE 8th.

CLAPHAM PARK.—An unequalled opportunity for securing FREEHOLD VILLA SITES, so rarely to be obtained in this neighbourhood. About half a mile from Clapham-road Railway Station and the City Electric at Clapham Cross, and the Cable Tramway, Brixton-road; and close to the lovely Commons of Clapham and Tooting Bec. Free conveyances; payments by instalments.

LINCOLN HOUSE ESTATE.—TWENTY-EIGHT choice FREEHOLD SITES in Clarence-road and Poynders-road, each having a frontage of 60ft. and an average depth of 340ft., secluded from the road by a beautiful belt of shrubs and trees.

SIXTY PLOTS of BUILDING LAND, with frontages of 30ft.; depths varying from 125ft. to 165ft. Situate in Rodenhurst-road, a new thoroughfare, 50ft. wide, leading from Poynders-road to Elms-road and Clapham Common.

MESSRS. DOUGLAS YOUNG and CO. will SELL the above by AUCTION in a Marquee on the Estate, on THURSDAY, JUNE 8th, 1899.—Particulars and conditions of sale may be obtained of the Solicitors, Messrs. PHELPS, SEDGWICK, and BIDDLE, 22, Aldermanbury; Messrs. LINKLATER and Co., 2, Bond-cour, Walbrook, E.C.; JOHN ANNAN, EDWARD DEXTER, Joint Managers, United Realisation Co., 32, Old Jewry, E.C.; or of the AUCTIONEERS, 51, Coleman-street, E.C.; 213, Clapham-road, S.W.; and Ilford, E.

FLEET STREET, CITY.—By order of the Governors of St. Bartholomew's Hospital.—A fine commanding Building Site, occupying an area of about 2342 sq. ft. on the south side and newly widened part of this great main thoroughfare, within about 40 yards of Ludgate-circus, having frontages of about 55ft. 6in. to Fleet-street and 51ft. 5in. to St. Bride's-avenue in the rear (facing St. Bride's Church); remarkably well lighted back and front, and suitable for the erection of first-class shops and business premises—a bank, newspaper or publishing offices, or other important buildings adapted to the position.

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ANSELL and MALLOWS, Architectural Draughtsmen and Quantity Surveyors, 21, Buckingham-street, Strand, W.C.

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The next Free Lecture to candidates and others will be given at the Hall on THURSDAY, MAY 25th, at 7.30 p.m., by JAMES BARTLETT, M.S.A., on "Staircases" and "Joints in Joinery."

For full particulars of the Examination, apply to S. W. PRESTON, Esq., at the Hall.

THE SOCIETY OF ARCHITECTS.  
Founded, 1884: Incorporated, 1893.

The SEVENTH ORDINARY MEETING of the Society of Architects for the Session 1898-99 will be held at the Rooms of the Society, at St. James's Hall, Piccadilly, W., on THURSDAY, MAY 25th, 1899, at 8 p.m., when a Paper will be read by G. GARD PYE, Esq. (Member), on "SOME ESSEX CHURCHES," illustrated with lantern views. Ladies are invited to be present at this Meeting.

ELLIS MARSLAND, Hon. Sec.  
C. McARTHUR BUTLER, Sec.

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FRANK MILES DAY AND BROTHER  
ARCHITECTS  
925 CHESTNUT STREET, PHILADA.  
F. M. DAY H. KENT DAY

March 1, 1899.

Mr. George Wragge,  
Salford,  
Manchester, England.

Dear Sir:

Noting your full page advertisement in the "Specification" this morning reminds us that we have been intending for some time to write to you to tell you how admirably your casements in Mr. Newbold's house behaved during the recent blizzard. The storm was one of unprecedented severity, the snow being thirty inches on a level and it was accompanied by winds of great velocity. The snow being very fine and dry, found its way in generally through the slightest cranny. The blizzard was promptly followed by a rapid thaw that set everything afloat and caused quite serious damage through leaks. The conditions were probably the most trying that we remember during the course of our practice. Your casement frames perfectly resisted every force of that storm and the subsequent thaw. No snow whatever entered Mr. Newbold's house either through the doors or windows, nor did any water get in when the thaw came.

This, we think, shows not only the excellence of the goods of your manufacture but the fact that they were well installed by the men under our direction. We are glad to be able to write you this, not only on our own account, but because the Owner of the house particularly wished us to express to you his satisfaction with your work.

Yours very truly,

*Frank Miles Day & Bro.*

The above *UNSOLICITED* Testimonial refers to a very important order for upwards of 250 BRONZE CASEMENTS supplied to Mr. Newbold's Mansion, Philada. U.S.A. The sections used were Nos. 20, 22 and 24, illustrated in our NEW CATALOGUE, pages Nos. 10, 14 and 18 respectively.

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March 15th, 1899.





MAY 31, 1899.

No. CCXXV.

## An Architectural Causerie.

### A Lesson from Sir W. Richmond's Failure.

THE recent outcry over the "desecration" of St.

Paul's brings home to us in a very forcible manner the absence of, and the need for, an English School of Decoration. Had such a school been in existence these doings would have been impossible. It is to be hoped that those in whose custody our public monuments are placed, will learn from this fiasco the lesson that a painter, however eminent as a painter—even though he be Academician, professor, and knight—is not necessarily a decorator, and is not the proper person to whom independent control should be given over such a scheme as this. It is needless to point out how little decoration is understood, or how little study is given to the subject. The Royal Exchange is being "decorated," that is to say, certain pictures of historical subjects, to a large scale, are being placed upon its walls by certain eminent painters. One cannot, therefore, altogether blame the Chapter of St. Paul's for not understanding the principles of decoration, and for not knowing where to turn for advice and assistance. Why, then, have we no school? and why is the subject not studied and taught at the Royal Academy, the Slade, and elsewhere? The R.A. gives a prize, but it does not teach. Fortunately there is now growing up a genuine love and appreciation of pure decoration, and many of our younger men are individually doing good work, but there is not yet any general consensus of opinion and sympathy, sufficient to make itself heard on matters of public interest. The decoration of such buildings as St. Paul's is one of those things that are best left undone; the only excuse for doing it, is to do it superlatively well; to do it badly, or even indifferently, is unpardonable. Enough has, perhaps, been said on the demerits of the present scheme; it seems to have evoked an unanimous chorus of condemnation. There must be many of us, however, who, much as we condemn it, have hitherto held our peace out of respect for the artist's genuine reputation, and because there is no need to hit a man when he is down. His painful letter to the "Times," however, will, it is to be feared, alienate the sympathy of many who had a certain pity for a man in a false position, and who would wish to deal tenderly with a brother artist. But it has now become a distinct issue between the interests of St. Paul's and the interests of an individual painter; indeed, we might say, between the interests of art and those of one particular

artist, and we have now no choice left to us. It has already been said that these decorations are bad, it only remains to be said that they must come down, and that at once. The painter appeals to the judgment of posterity. Is this quite fair to posterity? We—not posterity—have allowed this thing to be done, it is for us to undertake the thankless and unpleasant task of setting it right; and from another point of view—are we willing that this work should be handed down as an example of our knowledge and taste? The latter part of the century has sins enough on its conscience, many curious things for which to answer at the bar of history—Shaftesbury Avenue, the Tower Bridge, St. Alban's Abbey. But while most of the things we do are necessary things, the fault being that we do them badly, these "decorations" are quite unnecessary, and a perfectly gratuitous insult to the memory of a great man. A contemporary has complained that the artist has been treated as an ignoramus and an apprentice. What chance, one may ask, has anyone to become other than an apprentice at work of this description? Where can one get the practice that makes the perfect

from Petersfield to Bishop's Waltham, by way of Meon Stoke, at which last-named place the other branched off for Alresford; but these proposed railways were never put in hand. The present scheme is for a route by way of Wickham, following the south-eastern border of Waltham Chase, and continuing by way of Soberton, and near Drox-ford to Meon Stoke, whence it proceeds through Warnford and West Meon and between the remote villages of East and West Meon, to its junction with the existing Alton and Winchester branch at Alton station. The line will be laid in double track, and is intended to form an express route to Portsmouth. Two short tunnels and some heavy earthworks will be necessary, and it was in the excavations in progress for these that the fatal accident, in which several navvies were entombed, occurred two months ago. An unwelcome feature of this undertaking will be the cutting up of the picturesque village of Wickham into two portions. Wickham was the birthplace, in the early years of the fourteenth century, of that great churchman and statesman of Mediæval England, William of Wykeham, the cele-



THE VILLAGE OF WICKHAM. DRAWN BY C. G. HARPER.

artist? The most accomplished painter is but an apprentice, when he starts at decoration and the employment of mosaics, and cannot approach his work in too humble a frame of mind. The present disaster is sufficiently accounted for by the colossal self assurance, verging on insanity, which distinguishes the letter to the "Times." Such utterances as this provoke the question—where is the Society for Checking the Abuses of Public Advertising? A. R. J.

### The Ruin of a Picturesque Village.

A NEW branch railway in Hampshire, planned by the London and South Western Railway, has been authorised by Parliament, and is now under construction. Some twenty miles in length, it will begin at Fareham, in the neighbourhood of Portsmouth, and will run to Alton, chiefly along the valley of the little brook known as the River Meon. The Meonware county—as this district of Hampshire is called—has always lacked railway facilities, and many years ago the South Western made surveys for two branch lines to supply this want. One was to run

brated Bishop of Winchester. After the fashion of the times, he took his name from the place of his birth, but the name of his parents is said to have been Long. They were quite humble peasants, and it is therefore not surprising to learn that all trace of his birthplace has vanished, although local traditions still point out the site. The old parish church has been largely remodelled. The view of the village given here shows its lower part, and the large building to the left hand is Wickham Mill, a structure commonplace enough on the outside, but interesting within, as the floorings and joists are made from the pitch pine timbers of the American frigate *Chesapeake*, captured by H.M.S. *Shannon*, after a desperate fight, in the British-American War of over eighty years ago. Shot holes are readily to be seen in these timbers, and even now a bullet is occasionally found. The railway will quite spoil this view, coming, as it will, on a high embankment across the road. The houses seen here between the mill and the church, stand directly in the course of the new line, and will have to come down. Thus, solely for the sake of modern commercial uses, one of the prettiest villages in Hampshire will be spoiled C. G. H.



## On Reflection.

**"For this Relief  
Much Thanks."**

THE protesters have not protested in vain. An announcement was made last week which will be received with satisfaction by all—or nearly all—who admire the masterpiece of Sir Christopher Wren, and who do not wish to see it mutilated. The Decoration Committee of St. Paul's decided at their last meeting that the stencilling should be removed. No one—not even its author—has had a good word for the stencilling, and most of us agree with Lady Colin Campbell that it is "unutterably indefensible," though we might not all express ourselves just in that way. The committee have further agreed "that the panels in the fourth quarter dome shall not be proceeded with until the committee have seen the effect of the whole of the south-west section being so treated." We are pleased to see that the committee are manifesting a more reasonable spirit than at one time seemed likely, and we sympathise with Canon Scott Holland's suggestion that they shall be left for a while in peace to sift and weigh the protests they have received. These are not lacking in variety and suggestiveness, and probably there is very little left to say that has not already been said. We would suggest that for the present, therefore, the most reasonable attitude will be one of hopeful expectancy. The protests have been justified by the degree of success they have already obtained. We hope the committee will now act so wisely and sanely that it will not be necessary to renew them. Meanwhile our readers will be interested in the reproduction of Wren's design for the decorations which we present as a supplement with this week's issue.

### An Architectural Exhibition.

THE April number of the American "Architectural Review" contains a lengthy and well-illustrated account of an exhibition recently held by the New York Architectural League. A perusal of these pages suggests the inquiry why such an exhibition is not held in London. It is a commonplace lament that in England the average man cares very little about architecture, which he regards as the least important of all the arts. Yet how should it be otherwise, when architects themselves take so little pains to demonstrate the dignity of their calling? Why, for instance, have they not long ago revolted against the ignominious position accorded to their exhibits at the Royal Academy exhibitions? More than sixty years ago there was incorporated by Royal Charter an Institution—to wit, the Royal Institute of British Architects—"for the general advancement of civil architecture, and for promoting and facilitating the acquirement of the knowledge of the various arts and sciences connected therewith." It would be difficult to devise a more effective means of attaining those objects than the holding of an annual exhibition similar to that of the New York Architectural League. This exhibition included, in addition to architectural drawings, examples of sculpture, glass work, wall papers, iron and bronze work, pottery, embossed leather, &c. A similar exhibition in London, if organised on a broad and popular basis, could hardly fail to prove interesting and attractive to a large section of the general public as well as to members of the profession. It is possible that from the mere pounds-shillings-and-pence point of view, such an exhibition might not prove an immediate success; but it would be a fine object lesson to the general public, and would do more than many papers and speeches to raise Architecture from the ignoble position it at present occupies in this country. After

all, the R.I.B.A. is not merely a Mutual Improvement Society; *usui civium, decori urbium* is its motto. As the representative architectural institution in Great Britain, it has a duty to the public as well as to its own members.

### Fire Geography.

THE British Fire Prevention Committee, to whose useful work we have often had occasion to refer, has recently called attention to an important but little known aspect of the subject of fire prevention, viz., what may be described as "Fire Geography." In the insurance world, this special aspect of the subject is carefully studied, and maps are prepared showing the extent and characteristics of the conflagrations as they occur; but, hitherto, architects and engineers have paid but little attention to these matters. A recent publication of the committee, entitled "Conflagrations during the Last Ten Years," should do much to demonstrate to the architect, builder, and engineer the close relationship that exists between their work and the safety or otherwise of a locality in the event of an outbreak of fire. By means of twenty-three coloured maps, which have been carefully reproduced by lithography, the author, Mr. Charles E. Goad, explains in a graphic way the conditions upon which the character and extent of a conflagration depend. In speaking of the great Cripple-gate fire of November, 1897, the author points out the large number of confined spaces covered by one-story buildings with glass skylights for roofs, which existed in the area covered by the fire. When fire reached one of these light courts it was impossible for human beings to enter, and the fire had free play to attack from five to twenty buildings in the rear without any hindrance whatever. It is satisfactory to know that in the rebuilding of this area considerable improvements have been made in the structure of the houses, though it is a pity that the streets could not have been widened, for it goes without saying that the risk of a fire assuming alarming proportions is far higher in these congested districts. The author adds the ominous warning that there are many similar hazardous centres in London, and that sooner or later we may expect serious trouble in connection with them. In a similar way Mr. Goad deals with most of the greatest fires of the past ten years in all parts of the world, drawing from each hints, suggestions, or warnings, which ought to prove both interesting and instructive to all architects and builders, especially to those whose practice lies chiefly in large cities.

### A Contractor's Dilemma.

AN extraordinary state of affairs has just been revealed by a prosecution instituted by the St. James' Vestry against Messrs. Waring, the contractors for the new Carlton Hotel in Pall Mall. In fitting up the sanitary arrangements of the hotel, Messrs. Waring put nine soil pipes inside the building instead of outside, as the bye-laws of the London County Council require. The vestry, as the authority charged with the duty of enforcing the bye-laws, had no option but to prosecute, though they seem to have done so in a rather perfunctory spirit. They did not wish to compel the contractors to alter the position of the drains—a matter which would necessitate the structure being half pulled down—and suggested that the case would be met by a fine. The magistrate pointed out that if he imposed a fine, the vestry might keep on summoning the defendants as long as the offence continued. The vestry seem to have given an undertaking that they would not do this, and Mr. de Rutzen accordingly fined the defendants £2, and allowed £10 10s. costs. On the face of it this looks very like a scandalous

disregard, on the part of both magistrate and vestry, of the laws it is their duty to enforce. But before we pour out our indignation on Mr. de Rutzen and the St. James' vestry it is well to look at the other side of the question. It is not contended that the sanitary arrangements at the Carleton Hotel are in any way defective; indeed, the surveyor to the vestry has declared that they are the finest he has ever seen, and are capable of standing any test that could be applied, so that, at the worst, nothing more than a technical breach of the bye-laws was committed. Moreover in this case the contractors had to carry out their work subject to two conflicting authorities. The hotel, it seems, is built on Crown land, and the Crown surveyor, on behalf of the Office of Woods and Forests, forbade the soil pipes in question to be placed outside the building, on the ground that they would deface it; yet the County Council requires that all soil pipes shall, in the interests of the public health, be taken outside the building. If the unfortunate contractor, placed, so to speak, "between the devil and the deep sea," chooses to obey the Crown surveyor, and thereby infringe the bye-law, it seems hardly fair that he should be subjected to accumulating penalties for doing so. Such, evidently, was the view taken by the vestry, and their prosecution—futile and ridiculous as it appears—will not be wholly useless if it serves to direct attention to the unsatisfactory character of some of the L.C.C. bye-laws. The Council themselves, we believe, have recognised the need for the revision of this particular regulation, and in their new bye-laws now awaiting the sanction of the Local Government Board, the qualification "whenever practicable" has been added to the requirement that soil pipes shall be placed outside buildings. It is to be hoped, therefore, that not many more contractors will be placed in the unpleasant predicament lately occupied by Messrs. Waring.

## OUR COMPETITION.

INTENDING competitors are reminded that the last day for sending in designs is **Wednesday next, June 7th.** It may be presumed that most of our readers who intend to submit designs have by this time almost, if not quite, completed them. But for the benefit of any who may not yet have done so, we repeat our announcement that full details as to the conditions of the competition, in which premiums amounting to **Thirty-four Guineas** are offered for the three best designs, appear on p. 200 of the BUILDERS' JOURNAL AND ARCHITECTURAL RECORD, dated May 10th.

Up to the time of going to press we have received intimations from 113 readers of their intention to submit designs. A considerable number have already sent in their designs, and we take this opportunity of acknowledging the receipt of designs, specifications and sealed envelopes bearing the following mottoes: Albion, Alfio, Appliqué, Clerk of Works (2 sets), Clodhopper, Cypress, Endeavour, Firefly, Gradatim, Hospice, Joss, Muff, Red Rose, Rustic, Sou' Wester, Yew, Young Will.

Designs have also been received (unaccompanied by specifications or sealed envelopes) from Dulce Domum and Nineteenth Century (2 sets). Designs with the sealed envelope but without separate specifications have been received from Star and Othniel; the latter only sends two plans with the envelope. In these cases the specifications may be contained in the envelopes. We mention these details so that any competitor who has inadvertently omitted to send part of what is required by the conditions may rectify the error before it is too late.



## SWEDISH COUNTRY HOUSES.

By R. KEITH JOHNSTON.

UNTIL comparatively recent times all houses in Sweden were built of wood, that material being naturally chosen in a country which to-day produces timber in such quantities that nearly the whole of the woodwork used in English houses—window sashes, doors, window frames, and all such items as joists, rafters, and floor boards are imported from across the North Sea. So great, however, has been the devastation by fire in places where there were many buildings close together, that the use of wood is now prohibited in the towns, where stone, brick, or other incombustible material must be employed.

To English ears a "wooden" house seems to indicate a very unsubstantial concern, which, apart from the danger of fire, could not withstand the effects of more than a very limited number of winters. In our climate a building of this material would not, probably, last many generations; the dampness of the atmosphere and the frequent and sudden changes would quickly deteriorate the timber, and the house would soon begin to go to pieces.

In Sweden, however, they are blessed with a climate which, though the cold in winter is far more severe than ever experienced in England (even when we can hold a fair on the Thames), is very much drier and more constant, and there they know how to build a house of wood which will live through many more seasons than some of our "Substantial Villa Residences." Indeed, the house named Anfaströd is well over one hundred years old,



ANFASTRÖD: A WOODEN HOUSE OVER 100 YEARS OLD.

at the season of the year most convenient for each, in such quantities that the larder will hold out until the time for preserving comes round again. The "hard-bread," made from rye-flour, found in every Swedish house, from that of the humblest "Torpare" (who pays his rent by a certain number of days' labour, instead of in money), to that of King Oscar, is baked only five or six times in the year, and must be stored in a dry place or it soon becomes unpalatable, so that good cellars are a *sine quâ non* in that country, and are worth all the pains bestowed upon their building.

The foundations vary in thickness according to the size of the house, and are made perpendicular on the outside, so that no snow or water can lie on them, and sloping on the inside until the top course is reached. This is not less than 2ft. thick, it being impossible to build a wall of rough stones narrower than that.

Immediately on the top of the foundations a wooden "sill" is laid, and on this the walls are built up. These are composed of logs, or rather tree stems, roughly flattened with the axe on two sides only, the other two sides being left in the natural shape as indicated in the sketch (Fig. 1). The logs thus formed are generally about 6in. thick between the flattened sides, the thickness between the rounded sides tapering gradually, as the tree grew, from about 9in. at the thick end.

In the oldest houses the logs were notched at about a foot from each end, on both of the rounded sides, in such a way that when the house was built up the whole structure was very firmly built together, the ends of the logs projecting, so that, when viewed from above, the external walls would look like a picture frame of the "Oxford" pattern (see Fig. 1).

The projecting ends added very considerably to the strength of the building, but, possibly because they were looked upon as unsightly, or perhaps because it is found that ample strength is attained by a simple dove-tail joint, the more modern houses are put together rather differently, as Fig. 2 will show, the notches being cut at the extreme ends of the logs, so as to leave a "dove-tail" projecting.

When the house is built up in this fashion the corners do not cross, but have a flush finish, the ends of the logs being apparent in the form of "dove-tails." This form of construction is as strong as could be desired, as each "tail" is held in place by the logs immediately above and below it in the wall at right angles with itself, while it in turn is the retainer of the upper and lower edges respectively of the logs which control it.

The logs, as shown in the sketches, are placed with their flattened sides towards the outside and inside of the walls, the rounded edges being at top and bottom, and as they are not of uniform thickness, the broad and narrow ends are alternated. The different

"courses" of the walls are prevented from warping and becoming displaced by means of wooden pegs, driven right through two logs and into a third, as indicated by the dotted lines in figs. 1 and 2.

It will be noticed that the joints between the logs on one side of the house do not coincide with those in the walls at right angles, but alternate with them, this "bonding," to use a mason's term, being effected by joining the thin end in one wall to the thick end in that at right angles with it. In the places where doors or windows are to come, the ends of the logs are reduced to about one third or one half of their thickness, and are let into a groove of corresponding width in a log placed vertically, so as to keep the logs forming the walls in position laterally. This vertical piece, however, is not the full length of the height of the opening, a clear inch being left at either end to allow for the vertical shrinking of the walls.

Skanskullen, a modern villa, in the town of Uddevalla, is an example of a wooden house in a fashion very different from the older "log" house. As the accompanying sketches indicate, there is, first of all, a stone foundation, showing great variations in height, as the house is built on a very uneven rock. On this comes a frame-work of uprights, and there are outer and inner linings of boards nailed to the uprights, the space between the two walls being packed with sawdust. In other respects the

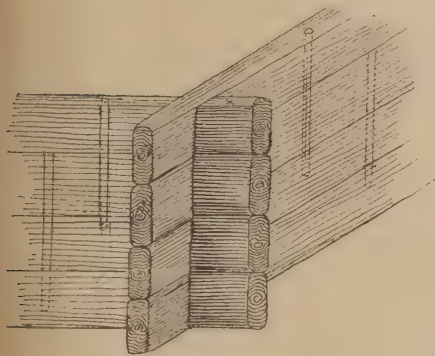


FIG. 1.

and I have been informed by an eminent Gothenburg architect that wooden buildings known to be so much as three, and even four, hundred years old are still in existence.

In order to prevent the lower timbers from rotting, which they would very quickly do if in contact with the ground, the building must be raised from the surface, and placed upon a less perishable foundation. This must be, at any rate to the height of 2ft. above the surface, of stone. Brick is sometimes used for the next 2ft. or so (the timber usually beginning at about 4ft. above the earth), but brick being very porous, and absorbing moisture freely, would be destroyed by the frost of the first winter, if used quite close to the ground.

Even stone must be used in a particular manner if the foundation walls are intended (as is the general custom), to form dry cellars, for if one stone is of such length that it comes right through from the outside to the inside, the frost will penetrate through that stone, and, coming in contact with the warmer air within, will produce a "constant supply" of moisture in the cellar.

The foundations in a good house are now usually laid in hydraulic cement, the interior being lined with the same material, thus forming cool, dry, and rat-proof storehouses for the large stock of dried provisions kept, especially in localities far removed from shops, by the prudent Swedish housewives. These stores include large sausages of many kinds, smoked salmon, salted herring, tongues, preserved fruits of all sorts, and many other delicacies for the table, which are prepared



FIG. 2.

house is built as are other wooden residences, and it is now some ten or twelve years old, and is in every way satisfactory, the walls, apparently so unsubstantial, being found all that could be desired for warmth and comfort. Many other houses are now built in this manner.

The joists to support the floors are built into notches cut for them as the walls are erected, for their ends project right through the walls, and are often continued so as to form the support of the verandahs, which are always to be found on such a house as that we are considering.

The rafters to support the roof are put on very much as in an English house, except that as they have to support a roof first of boards, then of asphalt-paper, or felt, and finally of



tiles, they are more substantial than with us, and to give additional strength, as well as the better to shield the walls from snow and rain, the joists of the upper or attic floor are very frequently prolonged three or four feet beyond the walls, and the rafters are extended so as to rest on them as well as on the tops of the walls, see Fig. 3.

Such projections of joist and rafter ends are usually carved into gargoyles, griffins, dragons,

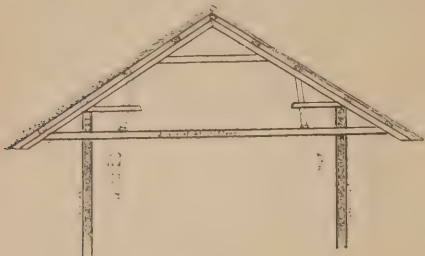


FIG. 3.

and other monstrosities, which add greatly to the picturesque appearance of the house.

The interstices between the logs are packed with dried moss or oakum, driven in with a tool and mallet as in caulking a ship, so that the walls are made quite weathertight, but in case any little chink should be left open, the walls are covered on the inside with a coarse sort of paper-board—much like what we call “mill-board”—about  $\frac{1}{16}$  in. thick. This is fastened on with clout nails, and it serves as a smooth surface on which to paste the wallpaper, as well as an additional safeguard against imperfect caulking of the walls.

The exterior is first covered with asphalt-paper or tarred felt, over which boards  $\frac{1}{4}$  in. thick are nailed.

These boards are usually placed vertically,



FIG. 4.

3 in. or 4 in. apart, the spaces between being covered by other boards 7 in. or so in width, so that there is no chance of rain penetrating through the joints; the sketch Fig. 4 will give some idea of the outer covering when fixed in this manner. In other cases, however, the boards are placed close together, the joints being covered with a narrow ornamental beading.

(To be concluded.)

**The New Jamaica Bridge, Glasgow,** was opened last Wednesday by Lady Richmond.

**A Memorial to Five Welshmen** has been erected at Llansannan, Denbighshire, and was unveiled last week. The celebrities commemorated are: Tudur Aled, a poet and Franciscan monk of the fifteenth century; William Salisbury, the translator of the New Testament into Welsh in the sixteenth century; Jorwerth Glan, a poet-preacher of the present century; the Rev. Henry Lees, the Keble of Welsh Methodism, and his brother, Dr. William Rees, Congregational minister, author of the greatest Welsh epic and the pioneer of Welsh journalism. The memorial is a life-size bronze figure of a country maiden in the national costume, and wearing a wreath as a tribute to those commemorated. The figure, designed and executed by Mr. Goscombe John, is seated on a plinth, the supporting obelisk at the back bearing the names of those commemorated.

## THE PUBLIC AND ARCHITECTURE.\*

By C. ERNEST MONRO.

IN considering this subject the first thought that enters one's mind resolves itself into the question: “How does the great British public regard Architecture?” Unfortunately this may be summed up in two words—complete indifference.

The average man when charged with his indifference endeavours to excuse himself by saying: “There is no architecture worth looking at,” and one hastens to give the obvious reply: “There is certainly architecture worth looking at, and on you, as one of an ungrateful public, this beautiful architecture is wasted.” Of course, one is perfectly aware that that which Dogberry, in “Much Ado about Nothing,” was so anxious should be written in regard to himself, holds equally good in regard to the public. The public in the architect's mind is “an ass” undoubtedly, but I will try in the following remarks to ascertain what causes this indifference of the man in the street, and how his asinine propensities may be lessened if not entirely got rid of.

Architects, and especially aspiring architects, are too prone to consider the opinion of the public as of no account, and yet how often one finds that, in his criticism of a plan, the outsider will place his finger on certain grave mistakes, which have been overlooked even by that most fault-finding of critics—the architectural brother. The average man's opinion as to what constitutes architecture is distinctly vague, and varies from a rather low conception of it, to ideas quite above even the so-called artistic architect's high-flown notions. To some it suggests a hod of bricks, drains, Buchanan's traps, and “all that sort of thing, you know,” this opinion being invariably accompanied by way of emphasis, by the point of the nose being slightly elevated; and as an example of the very loose way in which the word is sometimes used, I, myself, have been asked, and by a house-factor, too, to examine and see if there would be any “architectural difficulties” in the proposed erection of a certain w.c.!

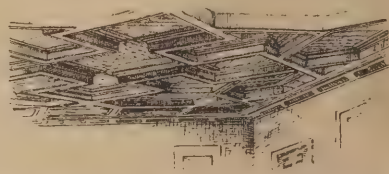
But perhaps the most common error is the idea that unless a building be covered with ornament, it is not architectural; that an ordinary building is one thing, and an architectural building, a superior article altogether. They cannot understand that a common tenement may be architectural, and that a building covered with bad and misplaced ornament is decidedly *not* architectural; in short, that a “but and a ben” may be quite as architectural, in its own way, as a lordly cathedral. It is this ignorance as to what constitutes architecture that is the principal reason for the indifference of the public, and it is this ignorance that causes their criticisms to be passed unheeded.

After mentioning in this brief way the main ideas in regard to the public (as a whole) and architecture, I would particularise a little now, and examine the relation between the public, as represented by municipal authorities, building committees, &c., and architecture. Here one immediately falls foul of municipal authorities in regard to their Building Acts and bye-laws. Drawn up frequently by an official or an unpractical draughtsman, they do about as much evil as good; and when expounded in the newer light of the most recently appointed and consequential of inspectors, these bye-laws become quite frequently nonsensical, and may be driven through by the proverbial coach and four. Even when framed carefully and by better men, such Acts will never teach an architect his business; they will only cast reflections on his ability and reliability, and at the best merely serve to keep the jerry builder within certain bounds.

That municipal authorities have strange ways of dealing with art is well known; but

will you let me give you an example of this, which I recently read about. A fine, large, stained-glass window in a certain town hall had got broken, and the estimate for repairs, according to the invariable rule, came to too much. To reduce this, one council member suggested litho glass, which brought the sarcastic rejoinder, “Why not try rags?” After some discussion the following amendment was proposed and carried:—“That the matter stand over until the holes get bigger!” Comment is useless, one can only gasp at such consummate folly. That the average committeeman is hopeless, architects who have come into contact with him are well aware, but when he is burdened with the additional responsibility and care of the ratepayers' money, he becomes quite obstreperous. “I object,” he loudly asserts, “to have my responsibility as a member of this council placed on the shoulders of an architect; the better way for us is to use our own common-sense, and, as we have to pay the piper, it is only fair that we should call the tune, by selecting the design ourselves, quite independent of the advice of the architect, who,” he declares, “being a specialist and an expert, is a dangerous man to follow.”

That universal dissatisfaction prevails amongst architects, in regard to competitions, is not much to be wondered at, when we consider how often the assessor's decisions are ruthlessly overturned by the use of what the bumptious councillor calls “his own common-



SKANSKULLEN: DINING-ROOM CEILING OF WOOD MOULDINGS IN HIGH RELIEF.

sense.” These, then, are the class of people who adjudicate on the plans for the building of what should be some of our finest examples of architecture. They either use their so-called common-sense, or take the advice of an incompetent and possibly interested assessor, and the result is that the man in the street, having only bad architecture before him, will never grow wise, and the young architectural genius, with the soft hat and the green necktie, as he passes along the street only stops to ejaculate, “Who did that?” while an expression of disgust, engendered by his superior knowledge, appears on his asthetic countenance.

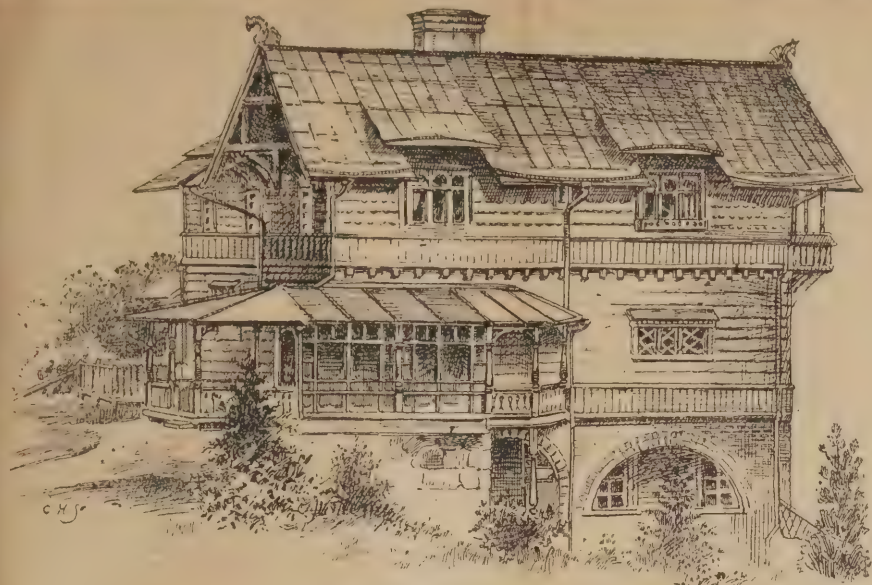
Speaking of knowledge leads one to mention an example of that time-worn maxim, “That a little knowledge is a dangerous thing.” The little knowledge which the public have got hold of in this case, is what they call “style.” They will insist that every building is built in a certain style, and if their architectural friend cannot tell them to which style a certain building conforms, he is put down, through no fault of his own, as a fellow who doesn't know his business. The architect who cannot unblushingly say, to satisfy their inordinate thirst for knowledge, that such and such a tenement is built in the Early Florentine Renaissance, or tenth century Gothic is thought little of.

That a so-called style is the outcome of centuries of growth, and the development of the ideas, not of one man, but of a great number, they cannot understand, and will calmly ask you to invent a new style specially for them, as they would like this new butcher's shop, which they intend to open, to have a good advertisement, and this new style would serve to draw the customers from the rival shop across the way. This commercial profit-making spirit is indeed much to blame for the evil days on which architecture has fallen. It shows itself in the keen cutting that is done by contractors for a building, and in the parsimonious way in which our best buildings, or what should be our best buildings, are treated.

Let me now consider the relationship

\* A paper read before the Glasgow and West of Scotland Technical College Architectural Craftsmen's Society.





SKANSKULLEN, UDDEVALLA.

between the architect and that more particular part of the public, namely, the client. What vision of beneficence he appears to the budding architect, that first client of his, and how he delights to tell his friends of what a client of his once said or did. Alas, this ere long becomes a tale of woe, for the ideal client, who is a joy for ever, has not yet appeared. To work for him at first is really quite an honour, but after a while the balance seems on the other side, and the client's many vagaries become nauseous. To begin with, he has very vague ideas as to the sort of house he wants, while you have very strong ideas as to the sort of house he ought to have. He will insist on having a design that is really bad, and will not accept one that is "not half bad." He has no imagination, is always commercial, has a notion that you adopted the profession by way of amusement, and considers that an architect is a useless luxury. "What's the good of my having an architect to plan my drains for me," he will say; "the sanitary authorities are paid to look after them, and even if they don't do it as well as the architect, it will cost me less, anyway. The Master of Works will soon tell me my walls are not thick enough, the joists too narrow, or the damp course (what-ever that is) not put in. No, I don't need an architect, a builder will do all I want," and he builder does it all, more or less, with the usual results, one of the smallest being that he extras amount to several times what the architect's fees would have been.

Take another of the forms in which a client appears. His first idea is that he wants a really good thing. The drawings are prepared, schedules issued, filled up, and returned, and then the disillusion commences. He always begins with a palace and ends with a hen-house, and the worst feature of the whole business is that the architect has to expend a very considerable time and no little skill in the reduction of the estimates, with the only and inevitable result, the reduction of his own fees. Should he charge, then the client feels he has a grievance in having to pay percentage on work which was not done, and he is never backward in telling you so.

The main idea of the average client is to get his money's worth, quantity rather than refinement, and as a result he gets either plain barn-door architecture or a job fussy and overloaded with so-called ornament, the whole being treated in what one might call the "public-house" style.

That this is the fault of the architect occasionally is true, but there is no denying the fact, that if the average architect desires to earn his bread and butter, or even his bread without the butter, he must follow out his client's wishes very rigorously, with very grave regard to the dimensions of his bank-book, endeavouring to lead him in a right direction, but yet remembering that he is

paid, not that he may carry out some fancy ideas of his own, at his client's expense, but, that his employer may have the house, or factory, which he believes most suitable for himself. The client must get rid of the profit-making spirit, which is the ruin of artistic taste; or should his income place him above this, then he should try not to act like the Yankee millionaire, who, in instructing the artist as to the painting of his daughter's portrait, told him to sling on plenty of paint as money was no object.

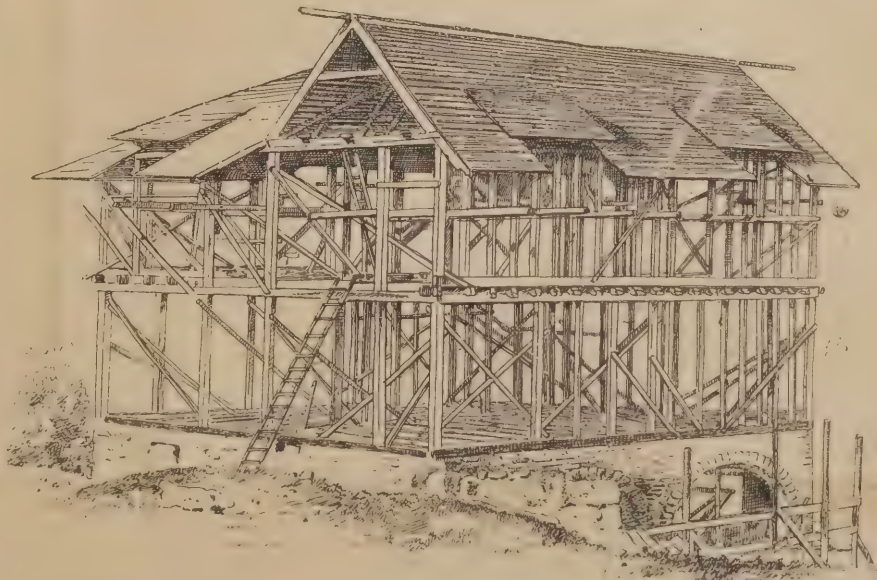
It is in his want of capacity as a business man, that an architect so often fails, and so causes his clients' mistrust, especially in financial matters. He has to be both an artist and a business man—two hardly compatible things—but yet it seems to be the practical and business-like man who forces his way to the front, and becomes the really successful architect; for the public, taking the most sensible view of the matter, have the idea that it is no use being able to design a really artistic gable if you cannot give instructions how to build it, or if the gable will not stand when built. But when one considers the enormous amount of knowledge expected of the modern architect, there is little cause for wonder if he be deficient in some of the numerous branches of his profession. He must have a knowledge of all the arts and all the sciences, and look at work from a tradesman's and craftsman's point of view; in short, be an artist, constructor, and engineer, and in addition to this, be a gentleman both in

feelings and manners, and have sufficient confidence in himself to enable him to act quickly and firmly in responsible positions.

That an architect should know about all the many branches which come under his supervision is necessary, but that he should give the drawings and instructions for each and all of these when they come as part of the work which he is carrying out, I am doubtful. If the building is one in which some special arrangement of a heating system is required, let him call in the heating engineer; if in sanitary matters, the sanitary engineer, and so on; then let him consult with each specialist and learn from him as a specialist, which system would be the best to adopt for the work he requires done, and in this way the science will be advanced, instead of retarded, as it so often is by the blundering of architects, who, having such a good conceit of themselves, believe they should do all. Life is far too short to learn a fraction of what the architect should be proficient in nowadays, and special subjects are better left in the hands of specialists, always provided that the architect intelligently supervises the work.

I am led to this remark by the experience which architects so often have when they propose to their clients to call in the aid of a specialist. But then the client expects far too much from the architect, complaining about things quite outside the professional control, and although the subjects may vary, yet the style of the letter altereth not: "Dear sir,—Please call here at once, as the rats have got into the kitchen, and we want to know how to get them out"; or "Dear sir,—The smell of paint in the house is something awful; please advise us what to do, as even our food tastes of oil and turpentine." But these are mild samples of what the architect—poor man—is subjected to.

When asked as to how the indifference of the public to architecture is to be got over, the answer is sometimes given, "Give good exhibitions of drawings of buildings, and the public will soon show more interest in them." This, in my small opinion, will be of little use. How much interest is taken in the architectural room in the average art exhibition? If a man wishes to see architecture it is not by looking at drawings, which are at the best only what the photo is to the subject, but he must learn to look around him as he walks down the street, for every street is in itself an architectural exhibition with both good and bad work in it, and practice will soon enable him to distinguish good from bad. As long as his study of architecture is confined to art exhibitions, or when on the hunt for a house to flit into, his indifference will not become lessened. Why should not the study of architecture be considered part of the education of a gentleman? Why should not the interest which even the holiday tripper shows



SKANSKULLEN, UDDEVALLA: IN PROCESS OF CONSTRUCTION.





SKANSKULLEN, UDDEVALLA.

in old buildings, be extended by him to our new buildings? Even although his interest in old buildings be chiefly in what has been called architectural freaks (I refer to leaning towers, crooked spires, haunted castles, and such like), and even although we do not build nowadays out of the plumb—that is to say, intentionally—yet I venture to say that in a walk along one of our own streets he would find plenty of architectural freaks to interest him, and far funnier ones than those of “Ye olden times.” Still, I am of the opinion that it is better to excite public attention by eccentricity than to let it slumber on in indifference.

But still there is one who requires improving quite as much as, nay more than, the man in the street, and that is the architect himself. To name only two professions, those of Medicine and Law, a candidate for these must pass stiff examinations after his heavy course of study, before he is allowed to practice. Why should the would-be architect not require to do likewise? The entry into the profession is far too easily made by the youth who considers he has a taste for drawing; and how can the standing of the architect be bettered when all those who, perhaps not physically, yet as regards their proposed life-work, are halt, maimed, and blind, are allowed, with no restrictions whatever and with few qualifications to begin their apprenticeship, blossom into so-called draughtsmen, and eventually begin business and help to swell the already large amateur element which renders our cities hideous.

Still we must be careful not to overdo this on the other hand, for cramming will not make an architect, and if a man is to be honoured by certain initials being added to his name, it were better, to my mind, that such should be given him as a result of good work carried out, rather than for book knowledge or designs for castles in the air.

That the public and the architect are less antagonistic than they used to be seems apparent, but yet there is room for further improvement. That the public are becoming more and more interested in art matters is obvious, and if this interest be conducted on the right lines, it will soon exhibit itself in architecture. That the lines are not always laid right may be judged from the following, which I recently read. “In a certain garden in the Forest Hill district of London the owner has placed a plaster cast of that celebrated piece of statuary, known as the Laocoon group.” The subject, you will recollect, is that of the father struggling with the snake for his two children. Regarded as a help to the beautifying of his house and garden, this was so far so good. Here, however, the man’s good intentions failed, for he endeavoured to further beautify the cast, by painting the legs of the father and

two sons, respectively blue and green, and obtained a most realistic serpent by the aid of black spots on a red ground! This is perhaps rather an extreme case, still it serves to illustrate the necessity of improvement on the right lines.

Better working between the contractor and the architect will help in the production of better work, and a continuation of the added interest which the craftsman takes in his work, will tend greatly to this desirable end. Another method which will help towards reviving architecture, and one which must come sooner or later, is the registration of architects. So much structural work and consequently the safety of the public, is now thrown on the architect’s shoulders, that it is imperative that he be thoroughly efficient, and registration will go far to effect this.

While much may be done by the interest of the private builder in the work which is being erected for him, yet more may be done by the intelligent interest of the citizen in the buildings of his city. If this interest were keenly felt, would, to give only one example, our great cathedrals be desecrated in the manner they so often are? We erect a building, and over the door inscribe the words, “To the

Glory of God,” and then use it for our own self-glorification, by placing on the floors or walls, tombs and monuments. If we must have our heroes glorified, why not have a building specially for the purpose, in which their great and good qualities might be emblazoned in gilt on marble and granite, and not have our cathedrals and churches spoiled by the insertion of busts, marble slabs, and such like into the walls, with no regard as to the suitability of the monument for the place, less for the good work ruthlessly broken to get them in, and, least of all, a thought as to the sanctity of the building.

If the architecture of the future is to show further improvement, it does not lie entirely with the architect to make that improvement. He must have an appreciative public to work for, an appreciation not born of ignorance, but of a taste for what is true and good; and even in this eminently practical age the true and good can surely be incorporated with actual needs.

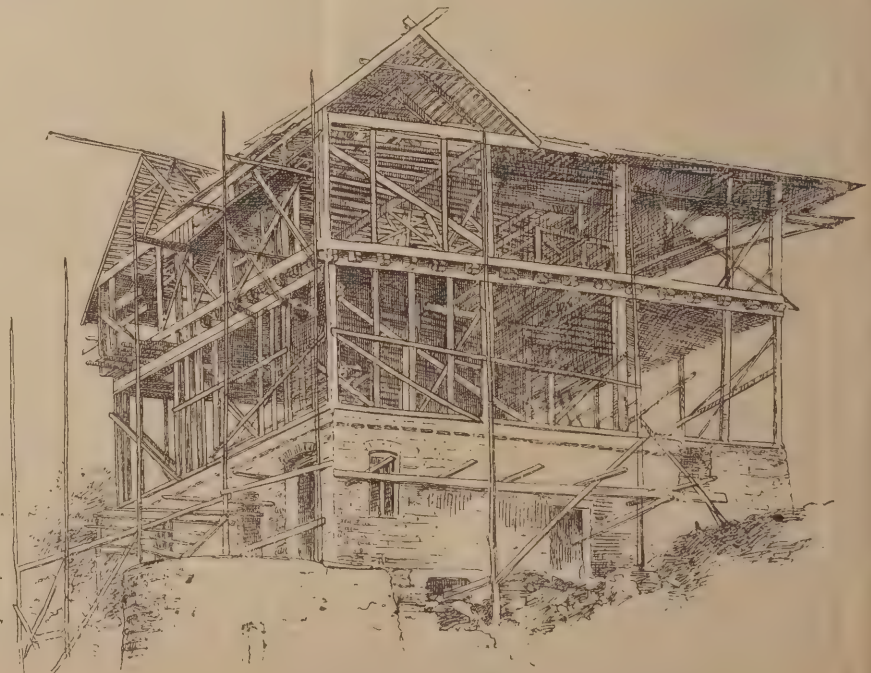
If the attitude of the public to architecture is to be bettered, they must be taught how, why, and what to admire. Interest will follow, apathy disappear, and the outcome would be the production of better architecture, as an appreciative public would certainly stimulate the despairing architect to produce something both beautiful and useful, satisfying the public’s bodily wants, and not injuring their newly-found artistic susceptibilities.

As architects there is no use in being too reverent for the past, no use in building for the future, when conditions may have changed entirely; then let us build for the present, endeavouring to make it true and beautiful, and if it is the best that in us lies, then it will at least help towards the great end, the restoring of Architecture to its former and proper position as the “Mother of the Arts.”

**A Statue of the late Miss Frances E. Willard** is to be erected in Statuary Hall, Washington. This will be the first statue of a woman ever erected in Washington. The memorial will cost about £9,000.

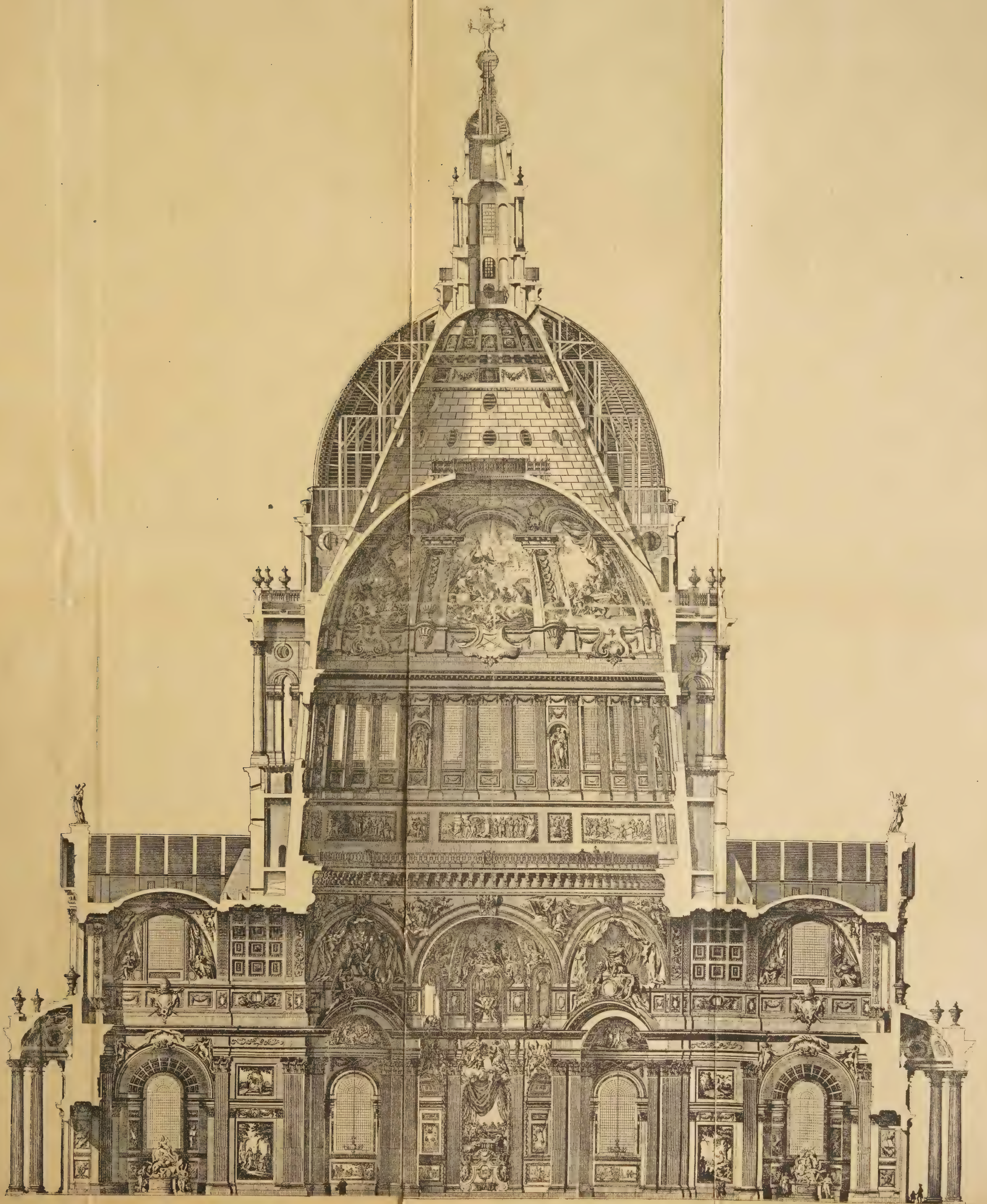
**Welbeck Abbey was Struck by Lightning** last week; the whole of the lead work was ripped away from the turret clock, and many of the squares of glass in the windows of the grand dining-room were smashed.

**A New Post Office at Greenock** was opened on Whitsun Monday by Sir Thomas Sutherland, M.P. The plans for the new post office were prepared by Mr. W. W. Robertson, of Edinburgh, and the building is situate in Cathcart Street. It is built in Renaissance style, and has cost about £20,000.



SKANSKULLEN, UDDEVALLA.





ST. PAUL'S CATHEDRAL: SECTION THROUGH DOME FROM NORTH TO SOUTH DOORS. SHOWING SIR CHRISTOPHER WREN'S INTENDED SCHEME OF DECORATION.

DRAWN BY SAMUEL WALE AND JOHN GWYN.

(From an Engraving dated 1801, in the possession of Mr. W. C. F. Gillam, of Brighton.)



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## R. I. B. A.

### THE PLANNING AND CONSTRUCTION OF BOARD SCHOOLS.

BY T. J. BAILEY.

AN ordinary meeting of the Royal Institute of British Architects took place last Monday evening at 9, Conduit Street, Regent Street, London, W., with the president, Professor G. Aitchison, A.R.A., in the chair. It was announced that Mr. George Frederick Bodley, A.R.A., of 7, Gray's Inn Square, London, W.C., had been nominated for election as a Fellow of the Institute. The minutes of the last meeting were passed. The secretary announced with regret the death of Mr. Charles Bell, F.R.I.B.A., who was elected an Associate of the Institute in 1870, and a Fellow in 1880. A letter was read from Lord Reay, expressing his regret at being unable to attend the meeting to hear Mr. Bailey's paper. The letter also expressed the writer's high opinion of the author's ability to deal with the subject he had chosen. The president congratulated the members present attending for the first time since their election. Mr. T. J. Bailey then read his paper on "The Planning and Construction of Board Schools." Dealing first with

#### The Public Elementary School,

the author dwelt upon the need for careful selection of the site. An ideal site would be one of about two acres, rectangular, with the longest side as a street frontage, and having a western aspect streetwards. There should be proper provision of light and air, immunity from noise of traffic for classrooms, an open playground space of at least thirty superficial feet for each child, and of such a shape as to be available for games, such as football for the boys, tennis, &c., for the girls. In London and crowded districts where the ideal 30ft. minimum cannot be realised, the playground question is usually best solved by providing on the ground level for boys and infants, and putting a flat over the whole top of the building to form a playground for the girls; where sufficiently large, playgrounds should have a covered space, 50ft. or 60ft. by 18ft. with sides inclosed, open in front to the sun. Various desirable accessories to playgrounds, the most suitable paving, walls and railings, gates, the school-keeper's lodge, &c., were duly detailed by the author. Next treating of the buildings, the author described the three-storey school as being the most usual type. The infants are on the ground floor, the girls on the first floor, the boys above. The maximum size or accommodation of a group should not exceed 1548—in departments, boys 516, girls 516, infants 516—and if further accommodation is required, it should be provided by a separate mixed department. The hall, considered by the Board indispensable to every department, is a very good size at 54ft. by 30ft.; the classrooms, ten in number to each department, graduate from sixty to forty in accommodation. If possible, the main line of classrooms should face the playgrounds rather than a noisy road, and draw their light from the east, as that aspect suns up the rooms in the early morning and does not disturb them for the day. The hall, facing west, provides a good reservoir of sun-lighted air to help the classrooms, and is a cheerful place to march the classes into for recreative or collective purposes. Architecturally, this elevation, being the more broken up (comprising the main lighting of the hall, the staircases, cloak and teachers' room, and blocks and gable ends of wings), is more desirable for a street front than the long, unbroken line of classrooms. Two staircases for each senior department are required, and two entrances for the infants on the ground floor. The author then described in detail the plan of the building, the dimensions of the various rooms and staircases, the fittest materials for facing walls, and

for floors and staircases, the requisite fittings and the lavatory and sanitary arrangements.

#### Warming and Ventilation.

Touching warming and ventilation, the author glanced at the efforts towards improvement in these matters during the last twenty years. He commended as very good the system of low-pressure hot water pipes, pipes round the walls and just above the floor, where the desks are placed, and a few ventilating radiators bringing in warm fresh air; but, even with this system, an open fire in the room is needed, the brick flue simply connecting with the outer air not being sufficient for extraction. The author had tried trunks from the ceiling line of each room gathered into groups with a single outlet equal to the combined area of the group, and with a coil of hot pipes in the same to produce an upcast. This was effectual as far as ventilation was concerned, but could not be recommended for schools of more than one storey in height; in three-storey buildings it had the effect of conveying the sound from the rooms below to those above, and disturbing the classes. The greatest care should be taken to get continued purity of air, and with as little trouble as possible. The system known as the "Plenum" effected this in the only satisfactory way; it introduced fresh filtered air above the heads of the occupants of the rooms, warm in winter and cool in summer, diffused it over the area, and extracted it at the floor level on the same side as the inlet, carrying away with it all the unpleasant odours of damp and evil-smelling garments. This system has the further advantage that where closed and even double windows are necessary to exclude noise, there is always a quiet side from which the supply of air can be drawn, and the closed and double windows improve the working. The cost is not appreciably more than an ordinary hot-water installation, but the builder's work involved in the formation of ducts, flues, &c., is a rather costly item. In a section on

#### Furniture and Fittings,

the author dealt with the patterns of desks, and their arrangement in the various departments, the lighting, the seating accommodation, platforms, cupboards, and the adjuncts found essential for educational and recreative purposes. Interesting reference was made to an order issued by the Board to each of their schools requiring a plan of the departments to be prepared by the scholars under direction of the teacher, measured and drawn to a scale of an inch to 4ft., the furniture delineated, and the walls coloured in, and submitted to the architect for approval before being framed and hung up in the school. Some two or three hundred of these plans had been submitted to the author, and he had been much surprised and pleased at the high quality of the work. Few had been returned for revision, and some would have been no discredit to an architect's office. The Higher Grade Schools, of which there are forty-four in operation under the London School Board, are equipped with rooms for science teaching, in addition to those for art and manual work. They comprise chemical and physical laboratories, with balance-room and small dark room for experiments in photography, and a store for chemicals, also a demonstration and lecture-room. The buildings, fittings, and general arrangements of the Cassland Road School, Hackney, a typical example of the Higher Grade School, were shown in a series of detail drawings exhibited by the lecturer. A third division of the paper was devoted to Buildings for Special Instruction, comprising centres for domestic economy (cooking, laundry-work, and housewifery), manual training in wood, manual training in metal-work, swimming. The combination of subjects in the Domestic Economy Curriculum has led to the requirement of a building in each case capable of giving proper facilities for the teaching. A typical building, planned after consultation with the committee in charge of these subjects and the lady superintendent, consisted of a classroom on the ground floor, 22ft. by 18ft., seated for forty girls, a kitchen, sitting-room, scullery, and bedroom, with entrance lobby and staircase

leading to the laundry and cooking classrooms on the upper floor, the object being to provide instruction in general housework, as well as cooking and laundry work. Details were given of the requirements of the manual training centres for wood and metal-work. With the sanction of the Education Department, the Board have decided to establish three swimming baths in connection with the schools at Marlborough Street, Southwark, Hugh Myddleton, Finsbury, and Lyham Road, Brixton. Particulars were given of the proposed bath at Lyham Road. The building will be separate from the school, and have a distinct and separate entrance, with superintendent's office, &c. The swimming pool will be 50ft. by 20ft., 2ft. 9in. deep at one end and 5ft. 6in. at the other, lined with white glazed bricks, and having dressing boxes, spray baths, w.c.'s, &c., and washing and drying room for towels and bathing-dresses. The water will be warmed by the injection of steam round the sides close to the bottom of the bath, the pipes being in chases, and cased for protection.

#### Special Schools.

The mixing of children mentally weak with those of normal intellect being productive of undesirable effects on both, it has been found necessary to provide accommodation for these in specially planned buildings. There are thirty-nine centres in actual work in London, with 1,597 children on the rolls (October 31st, 1898), and about thirty-five more are either in course of building or immediately contemplated. The unit for classroom is less than that for the ordinary school, more individual attention being required. The classrooms are all on the ground floor, are 20ft. square, and seated for twenty children. A hall corridor about 20ft. wide, well warmed, and made as cheerful as possible, is provided for exercise, drill, &c. A good lavatory and baths are provided, boys and girls are frequently taught in mixed classes, but have separate playgrounds and offices. Schools for the deaf are also provided on the centre system, and are much on the same plan as those for the mentally defective. The classrooms are smaller, 18ft. square, and seated for ten. Seats should be arranged in a circle, and the rooms should have a strong high, or top light, so that the lips of the children can be watched and studied, they being taught to read what is said by the lip movement. The Board have seventeen centres in operation, with 513 children on the rolls (October 31st, 1898), and seven in course of provision. Particulars were given by the author of a scheme for the establishment by the School Board of a home for the boarding and instruction of deaf children who had to be taught on the sign system. The schools will be built on the cottage home principle, the number in each home not to exceed ten, and the training will be largely agricultural or horticultural. In most divisions of the London district school accommodation has to be provided for a few blind children. These number about 150, distributed over eight centres, and it is generally sufficient to provide two small classrooms at each centre with separate entrances, cloak rooms and lavatories, the classes being mixed. Separate play-yards and closets are necessary

(To be concluded.)

**Electric Light Extension at Edinburgh.**—It was resolved at a meeting of the Electric Lighting Committee to recommend the extension of the electric lighting subway from Picardy Place to Little King Street, at a cost of about £1,500.

**Excavations at Canterbury Cathedral.**—Excavations conducted by Mr. St. John Hope on behalf of the Society of Antiquaries have been in progress during the past few days in the garden adjoining the residence of the Bishop of Dover, in the precincts of Canterbury Cathedral. Five Early English corbels were found beneath the site of the old monastery dining-hall, similar to those recently found during excavations for the Archbishop's Palace. The discoveries go to prove that the whole of the buildings on this side of the cloisters were entirely rebuilt in the second quarter of the thirteenth century.



## ROUND TOWERS OF IRELAND.\*

By ANTHONY SCOTT.

(Continued from page 235, No. ccxxiv.)

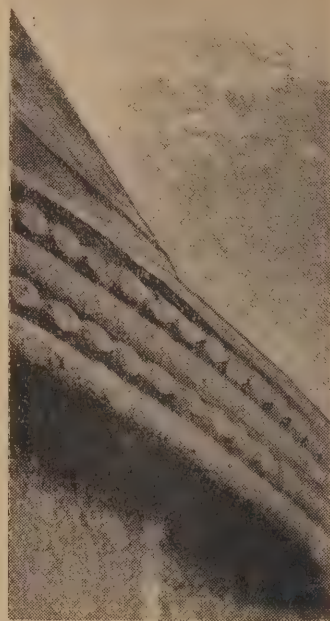
DR. PETRIE says: "It is very evident that whatever may have been the original intention of the builders as to the use to which the towers were to be put, or whatever the use to which they have in the course of time been put as the necessity arose. It would be rather an absurd assertion to state that the large towers which we see standing before us to-day were built even as far back as early Christian times, to hang the tiny little hand-bells which were then in use; but with later developments of both buildings and bells there can be no possible doubt as to the fact that the towers served as bell houses." One of the last towers built in Ireland was that of Ardmore, in co. Waterford, and I observed that even in this tower no provision had been originally made for a beam or fixtures of any kind to carry a bell, but the interior bore marked traces of cuttings having been subsequently made for this or some purposes of the kind. It is at all events quite evident that the towers, if not chiefly constructed as places of refuge, were at least used for that purpose afterwards. Taking into account the fact that the country at the time was governed by provincial kings and petty chieftains who were eternally at war and raiding each other's territory, there must have been but little security for either life or movable property. It is a well-known fact that the domestic architecture of the Middle Ages was designed and constructed to meet the requirements of lawless times; it is therefore quite reasonable to suppose that ecclesiastics had to look to their own security and that of their effects. They could not build their churches and dwellings within fortifications, they built in the open plains and valleys, and were consequently exposed to the attacks of marauding freebooters, men who lived by rapine, and would carry off church property with as easy a conscience as that of any ordinary layman.

The Very Rev. Dr. Fahey, Vicar-general of the diocese of Kilmaedagh, in a work published in 1893, entitled "The History and Antiquities of the Diocese of Kilmaedagh," devotes a chapter to the subject of the round towers generally, but more particularly to the Round Tower of Kilmaedagh in his own extensive parish. Dr. Fahey considers that the Round Tower of Kilmaedagh is by no means the earliest stone building at Kilmaedagh, but there is a close affinity of style between the masonry of the Round Tower and that of the Cathedral Church, which undoubtedly is one of the latest

buildings at Kilmaedagh. The masonry in the lower part of the tower and church may be termed cyclopean, if the term is admissible, in closely-jointed hewn stone of great size. There is another peculiarity in the masonry which I have not seen elsewhere, except in the west end of the cathedral church at Glendalough, namely, a peculiar notching or checking of some of the large stones. This tower is 110ft. in height, the circumference at base 56ft. and leans about 2ft. or 2ft. 6in. from the perpendicular; in this respect it is frequently compared to the leaning tower of Pisa. The doorway measures 6ft. 10in. high, and is circular headed, the arch being cut out of a single stone, the jambs incline slightly towards the top, the sill stands 26ft. from the ground. The historian Archdale puts this down as leaning 17½ft. out of the perpendicular, or 4½ft. more than the tower of Pisa. This is a fair sample of reckless writing. It may be well to explain here what I believe to be the sole and only cause of the leaning of this tower. It may appear strange, but it is nevertheless a fact, that the ancient ecclesiastical buildings, including the round towers, have practically no footing courses and very little foundations. In the case of the tower the walls at foundation are generally very thick, and in this way being circular, and from 13ft. to 18ft. in diameter, may be said to practically cover the whole area within the external circumference. The foundation at Kilmaedagh is 5ft. to 5ft. 2in. thick. The tower is built upon soft, vegetable earth. The depth of rich, brown, vegetable earth between the lower footing course and the undisturbed virgin earth varied from about 22in. on the east side to 26in. and 28in. on the west side. It can be easily conceived that the leaning of the tower towards the west was due to a greater depression caused by the immense superincumbent weight on the thick layer of soil on the west than the lighter layer on the east. There cannot be the slightest doubt as to the tower having been built in a Christian burial ground and on the top of Christian graves, as three human skeletons were found side by side, partly in the centre and partly under the foundation of the tower, and facing the east, which is the general mode of Christian sepulture in Ireland. Similar excavations have been made with a like result in the towers of Kilkenny, Ardmore, and Drumbo, &c.

The latest published work which I have met with, devoting a chapter to the round towers, is "Devenish: Its History, Antiquities, and Traditions," by the Rev. James E. McKenna, C.C., M.R.I.A., Enniskillen. The work is beautifully illustrated, and gives a fine photo view of the tower, a section to scale, as well as various details and measurements. The total vertical height of the tower of Devenish is 81ft. 6in.; circumference at base, 49ft. 9in.; immediately under cornice, 42ft. 7in.; cone capping perpendicular, height, 14ft. 10in. The door is 8ft. 6in. over plinth, and measures 5ft. 3in. in height, by 2ft. in width, having a semicircular arched head, the arch being formed of five stones, neatly and closely jointed. The jambs and arch are decorated with a flat band or architrave. Immediately under the spring of the arch is a stout iron hook to receive the door hinge, while directly under this there is a socket to receive the heel spud of door. The tower was divided originally into five storeys, the floors having been supported on offsets, which run all the way round the interior and project about 6in. Between each two offsets are a pair of corbels, evidently intended to support stairs. On a level with the cornice, and immediately under the conical cap, there is a similar string course which could not be intended to support a floor, as the space in attic would be very limited indeed. The top storey is lighted with four square openings; each of the other storeys has one opening. The most interesting feature of the tower is the richly sculptured cornice under the cap, which displays four quaintly carved human heads over the four windows. The stones of both interior and exterior are dressed to the required course, which justified Archdale in comparing it to a "gun barrel."

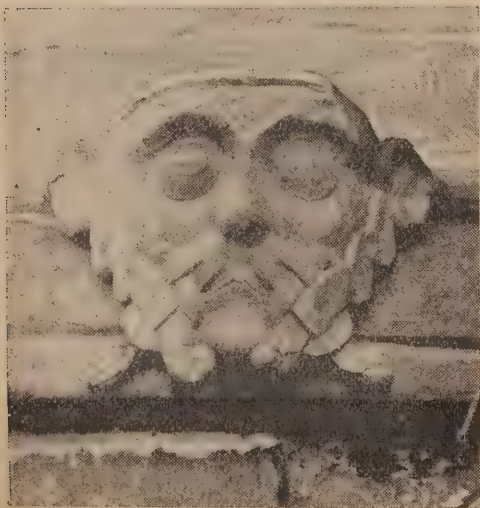
In describing the construction and characteristic features of the towers, I cannot do



DETAIL OF DECORATION OF AN IRISH TOWER.

better than quote Dr. Petrie, for my experience is that he has most accurately described them in every detail. These towers are cylindrical structures, usually tapering upwards and varying in height from 50ft. to perhaps 150ft., and in external circumference at the base from 40ft. to 60ft. or somewhat more. They have usually a circular projecting base, consisting of one, two, or three steps, or plinths, and are finished at the top with a conical roof of stone, which frequently, as there is every reason to believe, terminated with a cross formed of a single stone. The wall towards the base is never less than 3ft. in thickness; it is usually more, and occasionally 5ft., being always in accordance with the proportions of the building. In the interior, they are divided into storeys varying in number from five to eight, as the height of the tower permits, and usually about 12ft. in height. These storeys are marked either by projecting belts of stone, set-off ledges, or holes in the wall to receive joists on which rested the floors, which were almost always of wood. In the uppermost of these storeys the wall is perforated by two, four, five, six, or eight apertures, but most usually four, which sometimes face the cardinal points and sometimes not; the lowest storey or rather its place is sometimes composed of solid masonry, but instances of this kind would appear to be very rare. When not so it has never any aperture to light it. The second storey is usually perforated by the entrance doorway, and is generally from 8ft. to 30ft. from the ground, and only large enough to admit a single person at a time. The intermediate storeys are each lighted by a single aperture placed variously and usually of very small size, though in some instances that directly over the doorway is of a size little less than the doorway, and would appear to be intended as a second entrance. I do not agree with Petrie in this assumption. I have never met with an example of a window over the entrance doorway which impressed me with the idea that it was ever intended to be used as an auxiliary to the doorway proper. The large window over door was more probably used for protecting the door. The door of Devenish Tower was clearly forced from the outside at some time. If there was no means of protecting the door, what was to prevent the attacking party forcing it?

In their masonic construction the towers present a considerable variety, which I assert goes a long way to prove my suggestion that in these buildings, as well as in every other class of architectural structures, there has been great development from things poor and simple (like the round cells and houses at the start) to the beautiful and lofty tower at the finish as ages rolled by. The generality of



DETAIL OF DECORATION OF AN IRISH TOWER.

\* A paper read before the Society of Architects on Thursday, April 27th.



those which now exist are built of that kind of careful masonry called spawled rubble, in which small stones shaped by the hammer, are placed in every interstice of the larger stones, so that very little mortar appears on the surface of the finished wall, and thus the outside of spawled masonry especially presents an almost uninterrupted surface of stone, supplementary splinters being carefully centred in the joints of the undried wall. Such also is the style of masonry of the most ancient churches, but it should be added that in the interior of the walls of both grouting is generally, but not always, abundantly used. In some instances, however, the towers present a surface of ashlar masonry (but rarely laid in courses perfectly regular) both externally and internally, though more usually on the exterior only, and, in a few instances, the lower portions of the towers exhibit less of regularity than the upper parts.

In their architectural features an equal diversity of style is observable, and of these the doorway is the most remarkable. When the tower is of rubble masonry the doorways seldom have any decorations, and are either quadrangular and covered with a lintel of a single stone of great size, or semi-circular and headed either by the construction of a regular arch or the cutting of a single stone, hollowed out to resemble an arch. There are, however, two instances of very richly decorated doorways in towers of this description, namely, those of Kildare and Timahoe. In the more regularly constructed towers the doorways are always arched semi-circularly, and are usually ornamented with architraves or bands on their extreme faces and sometimes a roll moulding. The upper apertures but very rarely present any decorations, and are most usually of a quadrangular form. They are, however, sometimes semi-circular headed, and still oftener present the triangular, or straight-sided arch. I should further add that in the construction of this aperture very frequent examples occur of that kind of masonry, consisting of long and short stones alternately, which is more generally considered by antiquaries as a characteristic of the Saxon architecture in England.

The stones used in the construction of the towers varied with the locality in which they were built, and consisted generally of blue limestone, which is the most general formation of the country. Black calp, green clay, mica slate, a little granite, generally in doorways, as at Glendalough, and sandstone, &c. The primitive stone-built churches from the days of the circular churches, without exception, were all quadrangular on plan. The peculiar oratory at Gallerus would appear to be the first transition from the round to the square, but in later years the majority of these churches have had small chancels added to them at the eastern end in all cases, and cutting away the east end wall of the church and forming an arched opening in same to connect it with the older church, or what then became the nave. In some cases new doorways and new windows were introduced, and in all such additions, alterations, or improvements there has been no attempt at imitation, bonding or interlocking the new work with old. The Round Towers have been less tampered with or altered than any other class of architectural remains in the country. There are, however, some instances of alteration, such as the battlemented tops to be seen at Kildare and Cloyne, the stunted capping which replaces the original conical capping, as at Donaghmore, co. Meath, and Lusk, co. Dublin. In the construction of the towers each architect seemed to follow his own fancy (except in rotundity alone), so much do they vary in height and in the disposition and number of the apertures, and in the height the different doorways stand from the ground.

I feel assured that this was proportioned to the surrounding ecclesiastical buildings and to the requirements of the place. It becomes evident when we compare the towers now remaining with one another, that very considerable developments of knowledge, with progressive skill in the art of building, may be traced in the various examples, and that the signs of change are analogous to that

which took place in the church architecture of Ireland after the eighth century. The transition from coarse rubble masonry with square headed openings, to neatly dressed and coursed ashlar, with circular head and moulded arched openings, has evidently been of slow growth. The remains of the existing towers might be classified into three or four distinct groups, showing the transition from those built with unhammered field boulders, and those buildings having circular arched moulded openings, with correctly radiated arch joints and moulded architraves as at Timahoe, Armadown, Temple Finan, Kells, O'Rourke's Tower, Disert O'Dea, &c. The first circular headed openings in both church and tower were formed or scooped out of one large stone which formed the lintel, and was generally the full width of the wall. In the case of window openings of the churches, they were very small openings on the outside, and deeply splayed on the inside. In the case of the tower openings, the top lights were seldom, if ever, splayed, but the smaller openings are slightly splayed.

As regards the suggestion that the towers have been surmounted by crosses composed of a single stone, we have at least one example, that of Ardmore. In Dr. Smith's "History of Waterford," published early in the seventeenth century, he has given an illustration of the tower of Ardmore, showing the cone to have terminated with a cross, and so satisfactory was the evidence in the case, that when the tower was being restored in 1875, the cone was surmounted by a terminal in the shape of a Celtic cross. In Glendalough the whole cone or cap was missing at the time the ruins were vested in the Board of Works as national monuments, but a large amount of the original stones which formed the capping were found in the burial ground, in the centre of which the tower stands. The most important stone found was the apex stone, which, like that of Ardmore, had a deeply cut socket, about 4 in. or 4½ in. square, which could be there for no other purpose than the reception of the shaft of terminal, and I think it requires no great stretch of imagination to assume that such terminal was neither more nor less than a representation of a cross of some kind. The apex stone at Glendalough occupies to-day the same position which it occupied centuries ago, minus the terminal cross. The conical cap was rebuilt principally with the old stones, and the apex stone replaced, but the Government authorities, in conjunction with the Church Temporalities Commissioners, decided not to replace the cross, considering it more desirable to still leave the question of the Christian origin of the towers open to discussion.

One of the buildings at Glendalough is a stone-roofed church, and one of the finest specimens of its kind in Ireland. On the western gable of this church rises a small belfry tower, an exact fac-simile of the large round tower which stands at a distance of about sixty or seventy yards away. This building is supposed to be the first attempt in Ireland to unite church and tower. That it has been built with the church cannot be denied; it requires no expert knowledge to prove this. Anyone can see it to be part and parcel of the stone roof of the church. This small tower has an apex stone identical in every respect to the apex stone of the large tower, and it has also a socket for the reception of a terminal, which terminal must have been a Christian emblem, and that emblem must of a certainty have been no other than a cross. We have crosses in relief over the doorways of the towers of Antrim, Donaghmore, co. Meath, and Breckin—in Scotland—a round tower built by Irish missionaries, and no person will, I think, attempt to deny that these crosses in relief are coeval with the said towers. If they were incised crosses there would be room for argument, for they could be incised at any time since the erection of the towers. Having these crosses and figures of the Crucifixion carved on the lower portions of the tower, is there any valid reason to deny that the conical cap of the towers terminated with a cross? So far as my judgment and experience goes, I see no just reason for doubt.

## Enquiries Answered.

*The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.*

### ARCHITECTS' CHARGES.

To the Editor of THE BUILDERS' JOURNAL.  
TORQUAY.

DEAR SIR,—I should feel obliged if you could give me your opinion on the following: In a recent settlement of accounts on a villa contract, the architect concerned deducted a provisional sum (which he had stipulated in his specification) twice, or double the amount of sum stated, his reason being that by an error the item was set down in quantities twice. But I contend that as I prepared my own quantities, they did not form part of the contract, and that, therefore, he had no right to make such deduction, beyond the amount specified.—Yours faithfully, R. F. Y.

We think the double deduction was wrong.

### DISTRICT SURVEYORSHIPS.

To the Editor of THE BUILDERS' JOURNAL.  
NEW WANDSWORTH, S.W.

DEAR SIR,—Kindly inform me through your columns the qualification necessary for a district surveyor.—Yours faithfully, F. R.

It is first necessary to pass the special and very severe examination to qualify as a district surveyor, of which detailed particulars are to be obtained from the Secretary, R.I.B.A., 9, Conduit Street, Hanover Square, W. After that, appointment rests in the hands of the County Council as vacancies occur. To have passed the examination gives no right to appointment, though it is a necessary precedent. G. A. T. M.

### WROUGHT IRON BEAMS.

To the Editor of THE BUILDERS' JOURNAL.  
LONDON, S.E.

SIR,—In the supplement to the BUILDERS' JOURNAL for last week, in the article on "Wrought Iron Beams," the second equation for box girder is wrong; it should be 7.31 sq. in., instead of 6.31 sq. in. Would not the 6.74 sq. in. in the previous equation be sufficient?—Yours truly, J. P. BISHOP.

We are obliged to our correspondent for pointing out the error, which arises from the accidental substitution of the figure "4" for "5" in the preceding line. But the whole paragraph might be omitted, as the 6.74 sq. in. of the previous equation might safely be taken as sufficient.

### SWISS ARCHITECTURE.

To the Editor of THE BUILDERS' JOURNAL.  
NEWTON ABBOT.

DEAR SIR,—I am about to design a small villa residence in the "Swiss Style" for a client of mine. I should be much gratified if you would kindly inform me in your enquiries column what books I can get on the subject, viz., Swiss Architecture. I should like a book with descriptions of the style and illustrations of examples executed in the same.—Yours truly, "SWITZERLAND."

"Varius' L'Architecture Pittoresque en Suisse" is a book that will suit your requirements. It contains forty-eight engraved plates of plans, elevations, sections and details, and could probably be obtained from Mr. B. T. Batsford, of 94, High Holborn, W.C.

### ARCHITECTURAL SKETCHING.

To the Editor of THE BUILDERS' JOURNAL.  
NEWCASTLE-ON-TYNE.

DEAR SIR,—Can you advise me as to the best kind of pen and paper for pen-and-ink sketching? What can one do to gain some



style, or, indeed, any degree of facility in such sketching, and what reproductions of architectural work can you suggest to study?—Yours truly, B. B.

The pen used for pen and ink sketching depends so much on your style of sketching, that it is not easy to advise the best to use; avoid, however, all fine pens, as the use of these invariably makes a drawing look scratchy. An ordinary writing pen is often the best to use, more especially when it is a little worn. Whatman's mounted board—not "surface"—is the best we know of for pen-and-ink drawing. With regard to the reproduction of architectural drawing for study we should suggest that you obtain a copy of "Pennell's" work on pen-and-ink drawing, where you will find all the best work of the day. It is a great mistake to endeavour to copy the technique of any one man, as this eventually leads to a loss of all individuality.—H. I. T.

### JOINT DRAINAGE.

To the Editor of THE BUILDERS' JOURNAL.

LONDON, N.

DEAR SIR,—You kindly answered some questions of mine in your issue, dated April 12th, page 154, on the above. Unfortunately the Sanitary Inspector refuses to admit your view and says it is a joint drain repairable by the owner; while the L.C.C. state that the question of liability depends very largely on the circumstances under which the drain was laid; and although they both state that I am under some misapprehension as to the effect of recent decisions, neither of them gives any hint as to what circumstances cause a joint drain to be considered to be a sewer. I should be glad if you could give me any further advice. Should I have to give way owing to being unable to fight the question, have I any claim on the adjoining owner for expenses incurred in connection with the joint drain? As I have received notice to open the drain, and as it runs under a building, this means considerable expense.—Yours faithfully, C. S.

Our previous reply was based upon personal experience of a similar case in one of the London suburbs just outside the jurisdiction of the L.C.C. The question is one which has been contested, we believe, more than once, and quite possibly the L.C.C. are right in saying that special circumstances must be considered in each case. This being so, we would suggest that a solicitor be consulted, to whom everything can be exactly and personally explained. G. A. T. M.

### Lias Lime for Plastering.

To the Editor of THE BUILDERS' JOURNAL.

GREAT YARMOUTH.

DEAR SIR,—May we have through the valued Enquiry Department your opinion as to the suitability of stone lime for plastering purposes? We have recently erected a house and have used the best lias lime we could procure. In mixing a proper, but not excessive, quantity of sand was used and hair as customary. It has not, however, been very satisfactory, the ceilings particularly lacking cohesive power, and in some parts it has become detached, although the key has not given way. Can you suggest any reason for this?—Yours truly,

"YOUNG BUILDERS."

Lias lime is very variable in nature and quality, and requires great care in stocking to avoid failure when used for plastering purposes. If soft or loamy sand was used in making the floating stuff the work would be weak and lacking in cohesive power. If too great a proportion of sand was used similar results would ensue. Again, there is the item of hair, both as regards quality and quantity. Coarse stuff made by the cold process is not so destructive to the hair, and consequently to the work, as when made by the hot process. An analysis of small portions of the coarse stuffs used for the first coating and for the floating would enable the question of failure to be settled satisfactorily. W. MILLAR.

## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,  
LONDON, W.C.

May 31st, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

We reproduce this week, in the **Our Four-Page Plate**, form of a four-page plate, an old engraving, kindly lent by Mr. W. C. F. Gillam, of Brighton, which is of special interest at the present time, in view of the controversy occasioned by Sir W. Richmond's decoration of St. Paul's Cathedral. The inscription under the original engraving, which was published in 1801, is as follows:—"To his Royal Highness George Prince of Wales, this section of St. Paul's Cathedral, decorated agreeably to the original intention of St. Christopher Wren, is, with all humility, inscribed by his Royal Highness' most devoted and most obedient, humble servants, Sam. Wale, Jno. Gwyn." Assuming, as we fairly may, that the engraving is what it purports to be, we are enabled to form a fair idea of what the present appearance of the cathedral would have been, had Wren's intentions with regard to the decorations been carried out. It will be noticed that the illustration represents the cathedral without a choir. This was according to Wren's original design, as may be seen from a model he prepared which is still at the South Kensington Museum. The plan was a Greek cross, but this displeased the clergy and was accordingly rejected, owing to its being imperfectly cruciform, and the Latin cross was adopted instead.

### St. Paul's Churchyard.

It was not to be supposed that the suggestion for widening the north side of St. Paul's Churchyard would be universally approved. Your average City man thinks more of a fractional increase to the rates than of the finest view in the world. The writers of a recent letter to the "Times" express what is no doubt the sentiment of many business men. "We are overburdened at present," they say, "with all sorts of costly metropolitan improvements, and each item helps to swell the great burden. For instance, there is the Blackwall Tunnel to pay for, about a million; Rotherhithe Tunnel projected, about two millions; Holywell Street, half a million; Holborn to the Strand road proposed, five millions, with a large but imaginary recoupment; Parliament Street and offices, unknown millions; South Kensington Museum, half a million; and this with an income tax at a war rate of 8d. in the pound after many years of peace. Where is all this to end?" Of course London improvements are always expensive affairs, but our own view is that this particular improvement is well worth the price it would cost—£300,000 say the correspondents quoted above. This seems a large sum, but the burden on individuals would be quite trifling in proportion to the benefit to the community.

### A Prejudiced View.

ANOTHER objection, with which we confess to having some sympathy, is raised by a gentleman whose premises are in St. Paul's Churchyard. "At the present time," says this correspondent, whose letter appeared in the "City Press," "the roadway between the shops from Nicholson's corner to the commencement of Ludgate Hill is closed to vehicular traffic, with the result that it forms a pleasant promenade for the public, and affords them a splendid opportunity of conducting their shopping under the most pleasant circumstances. This fact in itself constitutes an income to the tradesmen in the occupation of the premises, and certainly they may be expected to offer a most determined opposition to the proposal if it is formally made before the Common Council." This gentleman admits that his view may be a prejudiced one. Of course it is, and equally, of course, he would have to be compensated—we do not say at his own valuation, but at any rate on a liberal scale. Considerations of the kind he advances might be urged in opposition to almost every City improvement that has been or will be put in hand. Someone's private interests are always interfered with. The individual citizen is not often nowadays called upon to sacrifice himself for the public weal; he is perfectly justified in demanding and fighting for ample compensation, but he is not justified in absolutely opposing an improvement demanded in the interests of the health, convenience, or enjoyment of the citizens as a whole.

### Kensington Palace.

KENSINGTON is the home of exhibitions for the people, and another has been added to the already long list by the throwing open to the public of Kensington Palace. On January 11th, 1898, Her Majesty announced her desire that the State Rooms, in the central part of the buildings, and Sir Christopher Wren's Banqueting Room should, after careful restoration, be opened to the public. In the following April the House of Commons voted £23,000 for the purpose of restoring the Palace. At this period the walls were bulging, and had to be shored up, the rafters of the roof were beginning to rot away, tiles and slates were broken, the floors were deteriorating, and the panelled walls and painted ceilings were slowly decaying. The work of renovation was undertaken by the Board of Works, and has been carried out with much taste. Care has been taken to follow the old style wherever the original was damaged, and the whole work shows that the desire has been to imitate as nearly as possible the old designs, and not to make old work into new, repairing, patching, mending, piercing, and cleaning having been the main occupations of the decorators. The Orangery, perhaps one of the finest examples of Renaissance work in England, has received the careful attention of the renovators. The walls are wainscotted high up with carved cornices, and the floor is covered with granolithic pavement, except in the alcoves at either end, which are stone flagged. A good idea can now be obtained of what the place must have looked like when first built, although at that period the woodwork was probably painted white, and not stained as now.

### Old Paris Disappearing.

THE Paris Correspondent of the "Dundee Advertiser" bewails the loss of historical buildings through the march of improvement. He says that to the historical student Paris is somewhat disappointing. Everywhere, on street and avenue and boulevard, are names that thrill with their historical associations, but for the most part the old buildings which live in history have been swept away in the passion for improvements. Churches alone seem to have the power of resisting the destroyer. From the point of view of a City Improvement Act, nothing could be finer than the wide streets and handsome buildings which are found almost everywhere. Architects are encouraged to excellence by the offer of prizes by the municipality for the best frontage, and one can see on almost every new building the name of the architect by whom it was planned. But one



may be allowed to say that, while each building, taken by itself, is a handsome structure, the general effect is lacking in variety. One avenue is very like another. Indeed, the city seems to have been laid out by one engineer, the houses to have been planned by one architect, and built with stones taken from one quarry. It is magnificent, but it is not picturesque. It is only in the older and business parts of the city that one sees that the Paris of former days resembled one of our own cities.

**British Archaeological Association.** This association met at the rooms in Sackville Street on May 17th, Mr. Compton, vice-president, in the chair. Mr. Patrick, hon. sec., announced that the Marquess of Granby had accepted the office of President of the Congress and the Association for the ensuing twelve months. Two very interesting rubbings of incised designs on the headstone of the Piscina in the south wall of the Templar's Chapel at Garway, Dorset-on-Wye, were contributed by the Rev. Dr. Minot, the vicar of Garway. They were discovered late last year on removing plaster. On the left side of the Piscina is a fish, representing the baptised, and on the right, a horned adder representing the unbaptised. In the middle is a cup marked with a triangle and raised a little; above the top is a cross within a circle; the cup has two rings. Dr. Minot considers this to be emblematical of the exaltation of the consecrated altar. The second rubbing was of incised work on the inside face of the broken tympanum of the west door of the Templar's Chapel; on the left side is a spear, and near it a ladder; on the right a cup with a cover, and near it a reed and a sponge. In the middle is a TAU cross, with a crown over it; three nails, and a sword beneath the arms. These clearly represent the instruments of the Passion and the crown of glory. The work is rude in character, and of early date, probably pre-Norman. Mrs. Collier exhibited a rare volume of the early part of the seventeenth century, entitled "A History of the Gospel," in fine condition, and Mr. Grimdsale photographs of a pair of hand millstones, recently dug up in a brickfield near Uxbridge. The stones are 14in. in diameter, and were found under about 4ft. 6in. of brick earth. A paper contributed by Dr. Russell Forbes, on "The Remating of Caesar" and the recent "discoveries in the Forum at Rome," was read, in the absence of the author, by Mr. Patrick, hon. sec.

**Decorative Renaissance.** In Paris, last Wednesday, Messrs. Waring and Gillow's new house was formally opened in the presence of a large number of the leading inhabitants, who were unstinted in their expressions of admiration of the beautifully decorated apartments. The entrance to the building from the street is treated as an open hall in Elizabethan style, and at the top of a staircase opposite is a vestibule arranged as a smoking and lounging room. This is panelled high in Jacobean style in ivory white. The ceiling of the drawing-room is an excellent copy of an Angelica Kauffmann ceiling. The colouring employed is tasteful, and the rose silk panels are framed with delicate arabesque ornamentation that is essentially in the Adam style. The dining-room is of the latter Victorian period; the panelling and antepiece generally are of fumed oak. The library is fitted throughout with inlaid mahogany after Sheraton. The whole building displays thoroughly the beauties of decorative renaissance, and reflects great credit on the artists who have designed the work.

**Exhibited Alone.** The Berlin Secessionists have long desired to have a special selection committee and special rooms at the great annual art exhibition at Berlin, but the Berlin Academy refused to grant the favour. The consequence is that they have started an exhibition of their own in Charlottenburg, which embraces about 300 works of art. The principles upon which the exhibition is

founded are almost ideal. The Secessionists say that they are convinced that the heaping together of numberless pictures in one exhibition is as much against the interests of the public as it is injurious to art. The endless succession of rooms filled with paintings wearies the eye of the spectator, who, amidst a desert of mediocrity, loses sight of the few really good works. (Our own R.A. might make a note of this.) Talent alone, say the Berlin Secessionists, in whatever manner revealed, has been decisive in securing their approval. They say that for them there is no Royal School of Art, but every work in which genuine feeling is incorporated appears to them a work of art. These are good principles, and it is well to note that they have been carried into effect. Nearly all the names of note of which the Secessionist movement in Berlin, Munich, Dresden, Karlsruhe, and Stuttgart can boast are included within the limits of this small exhibition. It also embraces work from men who stand far removed from the strife of parties.

**Iron Gates at Chiswick.** The fine specimens of old iron-work here illustrated is in front of Walpole House, on Chiswick Mall. The house itself is a very interesting specimen of domestic architecture. The iron-work has been restored and renovated, and, apart from its artistic interest, it has a special

### Anglo-Roman Antiquities.

THE extent of the discoveries of antiquities found during last year's excavations at Silchester on the site of the large Romano-British town or city has led the Society of Antiquaries to hold an exhibition at their apartments at Burlington House. This was opened last Monday, and a large number of articles is being exhibited. The operations were confined to the South-west corner of the city, where an area of about eight acres had been reserved for the season's work. Insula nineteen presents the peculiarity of being inclosed by a wall, and contains, in addition to minor buildings, a well-planned house of large dimensions with fine hypocausts. The area of the courtyard of this house is partly underlaid by the remains of a much earlier one of half-timbered construction, with a mosaic pavement of remarkable design in one of its chambers, a pavement which is considered to be perhaps the earliest in date yet found in this country. This beautiful piece of mosaic work is the most important and interesting of last year's finds. The design is highly artistic, and consists mainly of flowers and leaves conventionally treated and executed with great skill. The colours are well preserved, and the materials used—viz., white limestone, grey lias, red and yellow tiles, and bits of Purbeck stone—are all local products. The other articles exhibited are of the usual kind, including vessels in pottery of



IRON GATE IN FRONT OF WALPOLE HOUSE, CHISWICK MALL, W.

interest by reason of its literary associations. For it is said that these are the "lace-like" railings referred to in Thackeray's "Vanity Fair," and that the house was the one that figured in the book as Miss Pinkerton's Academy. Consequently, it was through this particular gateway that Rebecca Sharpe threw back the copy of Johnson's dictionary that had just been presented to her.

various types, one of which contained partly incinerated human bones; specimens of glass, and bronze rings and pins for personal adornment. Over £4,300 has been expended since the formation of the Silchester Excavation Fund, and it is estimated that a further sum of at least £3,000 will be required by the Executive Committee to complete the examination of the area within the walls.



## Correspondence.

### SMALL COMPETITIONS: ARE THEY DESIRABLE?

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—I always consider that competitions for small and simple buildings should be discouraged.

I am an advocate of competition for buildings of reasonable size, but the country is flooded with advertisements of competitions for small buildings under ridiculous conditions, and very young men and others entering for these give the outside public an idea that an architect will work under almost any conditions, which is a result very damaging to the profession.

Some weeks ago I wrote for conditions of a technical school competition at Frome, in Somerset. The offers made were three premiums of £50, £20, and £10, for an £1,800 building; no guarantee given of the employment of the man placed first; architects to ascertain levels of site, and call at the public offices in Frome to see drawings giving the desired accommodation, which was not stated in the conditions, for which a 10s. deposit was asked.

I sent back the conditions, pointing out that if that was all they could offer they had better get the best man in Frome to carry out the work, that the sum named would suffice to cover the cost of a building 6ft. high on the site at 6d. a foot cube, and that if they imagined anyone worthy of the name of architect would compete for a small building on such terms they were very much mistaken. Now has not a system been abused when such offers are made?—Yours faithfully,

H. W. W.

[The above letter is written in special reference to our competition for a country house, of which our correspondent does not altogether approve. We have reason to know that the announcement of our competition has given great satisfaction to many of our readers. Still, the question of the desirability or otherwise of these small competitions is an arguable one, and we shall be glad to hear the opinions of other readers.—ED. B. J.]

### REGISTRATION OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.

ST. JAMES' HALL, PICCADILLY, W.

DEAR SIR,—The R.I.B.A. will doubtless be gratified that Mr. Jemmett has put a name to the reason of their opposition to the measure, though we think it is not the one they would themselves advance, while the profession generally would be greatly interested in having your correspondent's definition of "a decent interval," which in his opinion, would elapse before the Institute took the matter up, failing the Registration Bill Committee and this Society doing so. Would it be another forty years?

The question of registration is one in which party politics should have no place, and the body who support this principle, and consequently the bill, is the one which will have the support of all those who place the good of the profession before self interest and party feeling.—Yours faithfully,

C. McARTHUR BUTLER.

Secretary, the Society of Architects.

To the Editor of THE BUILDERS' JOURNAL.  
LONDON.

SIR,—I have read with much interest, and hope that I shall continue to do so for some weeks yet to come, the correspondence which is now appearing in your valuable paper upon the above subject.

I am in full agreement with Mr. BONNER when he says that "registration would undoubtedly enhance the status of an architect in the eyes of the public"; but when he says that architects' pupils are simply made office drudges, I cannot agree with him, for during the whole of my articles, I received nothing but the greatest kindness and personal attention at the hands of my master, and I shall always look back upon the days of my articleship with

the greatest respect both for my principal and also for his assistants.

With regard to the objection made to registration that a number of undesirable men would have to be admitted in the first instance, I fail to see why this should be made such a strong point of opposition, as it appears to be, for whenever the registration of architects does become law, they would have to be admitted, and I ask why not admit them now and thus pave the way for a purer profession in the next generation?

A YOUNG ARCHITECT.

To the Editor of THE BUILDERS' JOURNAL.

SHEERNESS.

SIR,—The controversy on this subject from the present tone of letters thereon bids fair to fall through without any good resulting therefrom.

It would appear that those interested in the higher or art aspect of the profession will swamp by argument those fighting for the more practical and everyday portion of same, as from the pedestal of art, they do not and cannot have any idea of the provincial and working-class element which now enters very largely into the practice of an architect (especially provincial). This can be plainly seen if one walks through any town where building operations are going on, the work of men—self-styled architects—whose numbers are increasing to an alarming extent, who have not the slightest training, and who do not know good material from bad, much less the rudiments of architecture. It is a shocking thing to have to witness continually the monstrosities being erected by these unqualified men.

The question arises, is this state of things to continue or shall some steps be taken to check and ultimately stop it? Why should not the poorer classes be housed in small habitations which should be made convenient, sanitary, and more pleasing in appearance? Registration will not affect those whose life study is that of art, and whose position in the art world could therefore not be questioned. Registration cannot injure such; their work proclaims their superiority in that respect as heretofore, and opposition from such sources seems rather out of place. Plenty of scope is already open to them in the larger and more important private and public buildings of the period; why should not measures be taken to insure that the poorer man may live in a cottage or middle-class dwelling upon the planning of which the same amount of intelligence has been exercised as in the case of higher class work? This would tend to elevate the classes and lead to a better appreciation of art.

The first step would, of course, be to check the influx of non-professional untrained men who trade on the British public, and the best means to that end appears to be "Registration." A medical man brings his science and experience to bear on a patient under treatment for a minor malady as well as on a serious case. Why should it not be so with the architectural profession, those of highest degree in each case taking the principal patients or clients? —

G. M.

To the Editor of THE BUILDERS' JOURNAL.

19, CRAVEN STREET, W.C.

SIR,—As a member of the Architects' Registration Bill Committee, as well as of both the R.I.B.A. and the Society of Architects, I have been exceedingly interested in the discussion now taking place in your pages upon the subject of registration, and cannot but compare in my mind the tone of the letters already published with those which appeared in one of your contemporaries some years ago on the same matter. The acrimonious opposition of that time has disappeared, and in its place there is carefully considered weighing of pros. and cons., showing a decided growth of opinion in favour of the reform in the organisation of the profession of Architecture, which we all now understand to be covered by the word "Registration."

All know now that the Bill, which was drafted several years ago, and which many of

us hope may become law long before as many years again have passed, provides, not merely for the listing and registering of architects now practising or qualified to practice, but for the proper education of all aspirants for entry into the architectural profession in the future. It is this—the educational—which is its most important side; and it is its unselfish character as benefitting future generations rather than the present, which accounts for the little interest taken in it by the older, well-established men who can scarcely hope to benefit by it. At the time the measure was subject to attack on the educational side by those who said that its passage would deprive Architecture of artistic exponents; but this argument, though it has been half-heartedly expressed recently in your columns by one correspondent, is rarely heard now. Those who have voluntarily submitted themselves to the R.I.B.A. examinations have now shown by the production of important works, and by the generally high standard of their attainments, that the acquisition of the generally accepted minimum of knowledge and skill is no bar to genius. It seems strange that any should have imagined it would be. The most serious opposition which the bill has met with—that, indeed, which has delayed its passing into law for several years—has been caused by those who have looked at the matter from the purely selfish point of view to how it would affect themselves. Men in good position and practice, generally elderly men, who could scarcely hope to live long enough to benefit by its gradual elimination of the unworthy from the ranks of English architects, objected to being placed upon the same "register" as all who at the present time possess a prescriptive right to earn their livelihood by the practice of Architecture. That men of high sensibility should feel this is comprehensible; but their objection is highly imaginary one, as the names of all who choose to call themselves architects, qualified and unqualified, worthy and unworthy, already appear side by side in alphabetical order in many a directory and list; and a similar arrangement in an official "register" would in no way make worse the position of these respectable gentlemen.

On the other hand, it is scarcely to be believed that a much-needed reform, affecting a whole profession directly, and through its members the whole country indirectly, should be blocked by the selfish pride of a few, however high may be their standing.

As Mr. Bonner said in your last issue, "time has now come for renewed and vigorous action, and I should be glad to hear from any fellow or associate of the R.I.B.A. who may be willing to join with me in concerting measures for bringing the subject prominently before the Institute next session."

Anything further than this, such as Mr. Bonner suggests, requires money and organisation, and could certainly be best undertaken by the Society of Architects, the body which with comparatively small means and limited membership has fought the battle of "registration" for many years. In order to complete its work it wants men and money. It is not an altogether easy matter now to obtain admission to its ranks, but those who wish to help should do so, the younger by submitting themselves to its well-managed examinations, the elder by satisfying the council as to their qualifications.—Yours, &c.

G. A. T. MIDDLETON, A.R.I.B.A.

Forest Green Chapel, Stroud, has been re-opened, after having been repaired at a cost of £550.

Church Extensions at Shirebrook.—The foundation-stone of extensions which are to be carried out at Shirebrook Church was laid on Whitsun Monday. The extensions consist of a priest's vestry, organ chamber, vestry, and chancel, to be erected at a cost of £575. Messrs. Fisher Bros., of Mansfield, have been entrusted with the work. On completion it is proposed to remove the walls on the north and south sides, and add a couple of aisles, so as to increase the seating accommodation.



## Views and Reviews.

### TRURO CATHEDRAL.

This little handbook, which is published by the authority of the Dean and Chapter of Truro, appeals to a much wider circle than the ordinary cathedral guide-book. The building of a cathedral is so rare an event that few can fail to be interested in the inception and carrying out of so important a project. Truro Cathedral has the distinction, we believe, of being the first newly-founded cathedral that has been erected in England since the Reformation. It is just twenty years ago since the plans prepared by the late Mr. J. L. Pearson, R.A., were accepted, and the work was definitely put in hand. The erection of the choir, transepts, baptistery, and a portion of two bays of the nave was completed in 1887, and this part of the building was consecrated for public worship. Then for nine years no special effort was made to continue the building until the sudden death of Archbishop Benson, first Bishop of Truro and founder of the Cathedral, suggested the completion of the building as a fitting memorial to him. The work of collecting the additional funds required has, therefore, been resumed, and the issue of this little handbook is well calculated to stimulate public interest in the project. The architectural notes, although written for the general reader, are fuller than one usually finds in similar works, and are evidently not written without knowledge. The book is illustrated with a large number of photographic reproductions.

"The Cornish See and Cathedral: Historical and Architectural Notes." Second edition, revised and enlarged. Price 1s. Heard and Sons, Truro.

### WOOD-CONVERTING MACHINERY.

This is a concise and useful little handbook, that should find a place in the foreman's office of every builder using machinery, and it would not be without its uses in the general saw-mill, where the author's advice (and Mr. Powis Bale is a well-known authority on machine construction) on the planning of mills, the economical handling of timber, the preparation of foundations to prevent vibration, &c., suitable boilers to use, and requirements to specify in ordering, rules for the calculation of speeds in various machines, and practical hints on wear and tear, the causes of slipping belts and their prevention, will all prove of service even to the most experienced mill-owner. The remarks upon the shapes of saw teeth, the sharpening and setting of saws, and subsequent mounting and "packing," will be appreciated by the operative machinist, who will find his own experiences and deductions explained and qualified thereby. The author emphasises the fact, which probably has not escaped the notice of the skilled mechanic, that a working band-saw a thin long blade will stand better than a short thick one; it will heat less, and cool more quickly. He also draws attention to another important point, often neglected in builders' mills, viz., that the saw is frequently tightened by the operator when running, that is when its length is greatest, and left "sprung" when finished with; of course on cooling it contracts in length, and if not slackened will at least be strained if not broken. In the section relating to planers much useful information will be found relative to the use of "four cutters," "indie moulders, panel planers, &c., with the methods of avoiding the everyday difficulties and faults, arising in the use of these machines. The instructions given for the tempering and speeding of cutters to work woods of various texture and hardness will, we think, require some modification shortly in the light of some recent developments. We find a short time since the opportunity of inspecting some first-class sunk moulded wheels in hardwood, turned out on a spindle chine with a cutter that when placed on the ratchet will, we venture to think, considerably punish those people who deem highly tempered steel cutters a necessity in woodworking machinery. Various special tools are touched

upon in this work, perhaps somewhat lightly, consequently upon the author's necessity of keeping the work within reasonable bounds, but the little he has to say is to the point, and users of sandpapering, wood-wool working, wood-block cutting, turning and dovetailing machines will find something to interest them. Specialties for railway carriage makers, wheelwrights, coopers, &c., are also treated, whilst the pages are dotted with a host of miscellaneous mill recipes, memoranda, rules, and tables, that should prove of great utility to prospective machine users. A most important part of mill paraphernalia, however, seems to have been overlooked; we allude to the covers and guards for cutters, saws, and belts, and there is room for much to be said and done in this direction. G. E.

"A Handbook of Saw Mill and Wood-Converting Machinery." By M. Powis Bale, M.I.M.E., A.M.I.C.E. Price 2s. 6d. W. Rider and Son, 14, Bartholomew Close, E.C.

## Keystones.

**Norwich Cathedral Nave** was re-opened last Thursday upon the completion of the unflaking of the interior.

**A New Public Mortuary at Yarmouth** has been erected on the North Quay from plans and designs by Mr. J. W. Cockrill.

**A new School** is to be erected at Darfield, at a cost of about £2,520, from the plans of Mr. A. B. Linford, architect, of Wombwell.

**A Three-Light Stained Glass Window**, by Kempe, has been fixed in the south aisle of Ledbury Church in memory of Mr. Edward Maddison.

**The Victoria Nurses Home**, in connection with the Swansea General Hospital, was formally opened by the Mayor of Swansea a short time ago. It has cost £1,800, and has been erected in honour of the Queen's Diamond Jubilee.

**A Clergy Training School** was opened at Cambridge recently. The site of the new building is opposite Jesus College. It is of red brick and stone, and has been built from the designs of Mr. Ould, at an estimated cost of £7,600.

**A Discovery at Bakewell Church.**—During recent excavations at the western end of Bakewell Parish Church, Sheffield, the workmen unearthed a portion of a series of massive quarry picked gritstone, which probably formed part of the foundations of what were intended to have been the western towers of the church.

**Mr. J. Lochhead**, an assistant in the architectural department of Her Majesty's Office of Works, who has just completed a long period of service, is about to retire. Mr. Lochhead entered the Civil Service in 1862, when Mr. Williams was the chief surveyor at Whitehall, and has later seen many years service under Mr. Henry Tanner, the present surveyor.

**Manston Infectious Diseases Hospital.**—At a meeting of the London Sanitary Committee a scheme by Mr. Edwin T. Hall, F.R.I.B.A., for the extension and completion of the hospital, was adopted, and he was instructed to prepare detailed plans and specifications. Over 300 additional beds will be provided, and extra accommodation for the resident staff.

**Church Schools, Wolverhampton.**—The memorial stone of new buildings in connection with St. Andrews Church was laid recently. The site, 1½ acres in extent, is in Gates Street, Whitmore Reans, and the buildings will provide accommodation for 292 girls and 335 infants. The total cost is estimated at £4,000. Mr. F. Hunter Lynes is the architect, and Mr. J. Herbert the builder.

**A Memorial Window to Sir Joseph Terry, J.P.**, was unveiled in the Guildhall, York, last Thursday. The window is of stained glass, and the subject is King Edward the IV. at Walmgate Bar, swearing allegiance to the House of Lancaster. Messrs. Shrigley and Hunt designed and made the window.

## Professional Practice.

**Airdrie.**—The result of the adjudication upon the competitive plans for a new elementary school at Coatdyke, to be erected by the Airdrie School Board, is that the plan by Mr. James Shaw, architect, Coatbridge, has been chosen—that of Mr. William Shanks, Airdrie and Glasgow, being awarded the second place and premium of £10.

**Bradford.**—The foundation stone of a new church in Grange Road, to be known as the Church of St. Columba, was laid on Whitsun Monday. The style is Early English, and the nave will be 79ft. long and 24ft. wide, with aisles on each side 11ft. 6in. wide, from which there will be projecting transepts on the north and south sides. At the west end there will be a vestibule about 8ft. long, with a similar width to that of the nave. On the north side there will be a chapel 35ft. long and 17ft. wide, and on the opposite side, or the south side of the chancel, there will be the organ chamber, as well as vestries for the clergy and choir. From this portion there will be a staircase leading to the basement, which will be furnished as parish rooms. The church will be built of local stone, with a roof of Westmorland slate, and will have a turret which will be 65ft. high and 9ft. in diameter. The turret will be octagonal in shape, and at its foot there will be an entrance to the parish rooms. The architects, Messrs. T. H. and F. Healey, have executed plans for a church which will be well lighted by leaded windows of an ornamental character. The pulpit and font will be of stone.

**Creswell.**—The Duke of Portland opened a new school at Creswell last week, which has been built at a cost of upwards of £5,000. The work of erection has been carried out by Mr. J. E. Simken, of Bolsover, to the designs of Messrs. Brewill and Baily, architects, of Nottingham. The school, which will accommodate 450 children, consists of a large central hall, seven classrooms, cloakrooms, and lavatories, with master's and mistress's rooms, all ranged over the projecting stone-pillared porches to the separate entrances for the boys and girls. The central hall has an open roof, and is surmounted by a bell and ventilating turret. The architecture is of the Georgian period, and carried out in red sand bricks, with stone dressings, white wood cornice, and green slate roof.

**Dundee.**—The Dundee Parish Council have approved of the plans for the new council offices by Mr. W. Alexander, the City Architect. The building is to cost about £6,500, and will be erected between Bell Street and Rattray Street. The building, when complete, will present to Bell Street an elevation of three storeys and attics. The masonry will consist of blue Forfarshire stone. The new offices will be erected to the order of Mr. W. Kidd, stationer, of Whitehall Street, whose tenants the Parish Council will become.

**Hawarden.**—Miss Helen Gladstone recently opened a new county school at Hawarden, which has been erected at a cost of £2,450, from plans by Messrs. Grayson and Ould, architects, of Liverpool. The buildings consist of two large central classrooms, divided by a sliding partition. To the west of this central block is the boys' wing, and to the east the girl's department. The rooms have high dados of enamelled bricks from Aston Hall Brickworks, chiefly of primrose tone, with skirtings and cappings of brown glazed bricks. Externally the walls are of red Ruabon bricks, with dressings and mullioned windows of red terra-cotta, from Mr. J. C. Edwards' works, and the roofs are of red Ruabon tiles. The arms of the county appear in the central gable. The contractors were Messrs. W. and T. Bailey, of Hawarden.

**London, E.**—The extension of the nurses' home at the London Hospital—the ground floor plan of which is here given—was under-



taken in 1895 to accommodate the increased number of nurses required, owing to the new regulations affecting their working hours, which were instituted by the hospital authorities. It was also felt imperative that there should be a special ward set apart for sick nurses. The building consists of basement and ground floor and five floors over, the roof space being fitted up and utilised as a box-room, with fireproof lockers and hanging cupboards. The servants are provided for in the basement. On the ground floor is the nurses' ward, 28ft. 6in. wide, for twelve beds, with a sisters' room adjoining. The sink room, w.c., and bathroom are cut off from the main building, and approached by a disconnecting lobby. The ward is heated by a Teale's hospital stove. The remaining five floors give accommodation for seventy-five nurses. In addition to the service staircase, there is an escape staircase in the sanitary block from the roof to the basement. There is also a luggage lift up to the boxroom in roof. The chaplain's house adjoining, is at present used as a temporary isolation hospital. The building is constructed entirely of fireproof materials, including the partitions between the bedrooms, which are Banks' Patent 2in. finished partitions. The nurses' dining-room,

which has seating accommodation for 1,500. The large stage, in addition, can hold a choir of 300 voices. There are also a gymnasium 25ft. by 50ft., library room 25ft. by 22ft., a lecture hall 40ft. by 21ft., and numerous club and committee rooms. In the basement is a swimming bath 55ft. by 18ft., lined throughout with white glazed bricks; here are also four plunge baths, a shower bath, dressing boxes, and lavatories.

**Netherfield.**—A Baptist Chapel which will seat about 350 persons is to be erected at Netherfield. The memorial stones were laid recently. The new chapel will be some 55ft. in length by 41ft. in width, and will be built in the Gothic style, with red bricks and Hollington stone dressings. The architect is Mr. W. H. Higginbottom, of Nottingham, and the brickwork will be carried out by Mr. J. Lewin, of Netherfield. The main front will face Kenrick Street, whilst the side approach will be from Chandos Street.

**Newcastle-on-Tyne.**—The North of England Temperance League have decided to establish a Northern Temperance Institute in Newcastle-on-Tyne. Mr. Guy Wilfrid Hayler, architect, London, has prepared plans of a building, near the Central Railway Station,

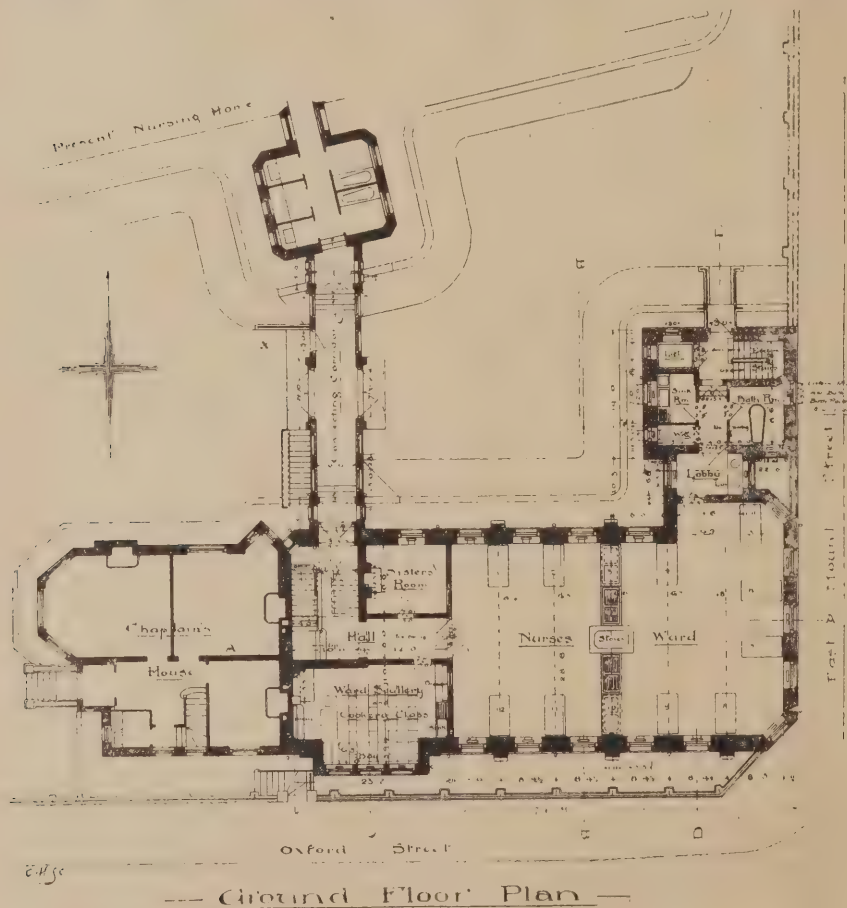
block of accessory rooms to the north-east end of the present long corridor, and extends in a south-easterly direction along the Postern Street frontage. The position chosen for the point of connection involves the rearrangement and displacement of the existing staircase, and the new wards will be reached by a corridor 81ft. long, placed at right angles to the present corridor. The upper basement is divided into four rooms for servants, and the lower basement provides accommodation for the staff of hospital porters. Each of the circular wards on the upper floors contains room for eighteen beds, and the space will be sufficient to afford each 1800 cubic feet of air. The diameter of the wards will be 60ft. externally, and 55ft. 6in. internally, the walls being about 2ft. thick. The new block contains on every floor a bathroom for patients, sanitary accommodation for nurses and patients, kept distinct, a housemaid's closet, and a room for clinical investigation. The wards are in communication with the main building by means of several bridges. The walls of the new building will be constructed and generally faced with brickwork relieved in the strings, dressings, and cornice with Ancaster stone. Internally it will be lined with glazed bricks. All the floors will be fireproof—made of steel joists encased in concrete, and covered, in the case of the ward floors, with teak. The corridors will be in marble terrazzo. The chimney shaft, which rises up the centre of the wards, will serve not only for the smoke flues but also for ventilation.

**Pitlochry.**—A new public hall is to be erected at Pitlochry, at a cost of about £2,500 from plans by Mr. Alexander Ness, architect of Nethergate. The foundation stone was laid recently by Sir A. Muir Mackenzie of Delvine Bart. The hall is being built on a site near the Pitlochry Established Church. It is built of stone, and is an adaptation of the Scottish Renaissance style. The front wing measures 55ft. in length. In the front portion of the building there is a spacious vestibule with cloakrooms and crush lobby on the ground floor, with a small hall and other accommodation on the floor above, whilst the hall proper abuts on it at an angle. The hall proper measures 60ft. by 33ft. 6in., the height being 24ft., and it will contain seating accommodation for 500 persons, the gallery to hold about 90. A stage, 25ft. long by 14ft. broad will be provided, with all the necessary adjuncts in the way of dressing-rooms, retiring rooms, and baggage rooms.

**Selly Oak.**—At a meeting of the King Norton Board of Guardians, last Wednesday the question of providing additional accommodation at the workhouse was discussed. The report of the Building Sub-committee recommended that the following alterations and extensions be made by the Board: Provision of general stores, with office accommodation attached; provision of receiving wards, and stores for inmates' clothing; removal of present coach-house, stables, and piggeries, and erection of same on a suitable site, together with wood-chopping sheds for convalescent patients, and workshops for carpenter, tailor and shoemaker; renovation of isolation hospital. The opinion was expressed that the alterations and extensions would cost about £30,000. The report was adopted. A resolution was proposed and carried empowering the Board to engage the services of Messrs. Whitwell and Son, architects, to confer with the House Committee and prepare a comprehensive report, with plans and separate estimates, for the consideration of the Board.

**Carnegie Home,** an extension of Montreal Asylum, was formally opened on Whit Monday. The building and furnishings have cost about £20,000.

**The opening of Tamworth Castle,** Staffordshire, to the public, took place on Whit Sun Monday. The castle was purchased by the Corporation of Tamworth, at a cost of £3,000, in commemoration of the Queen's Diamond Jubilee.



LONDON HOSPITAL: EXTENSION OF NURSES' HOME. ROWLAND PLUMBE, F.R.I.B.A., ARCHITECT.

breakfast-room, sitting-room and library, are in the old nurses' house, and are approached on the first and second floors by a bridge, and on the ground floor by a covered way. The exterior of the hospital is of the simplest character, and built of ordinary stock bricks with pilasters and cornice, and some few dressings in red brick. The building was carried out from the designs and under the superintendence of Mr. Roland Plumbé, F.R.I.B.A., of 13, Fitzroy Square. Mr. Shepherd, of the Borough, was the contractor, and Mr. J. A. Thornhill, resident surveyor to the hospital, acted as clerk of works.

**Mountain Ash.**—An institute has been erected from plans by Mr. D. Lloyd, of Aberbeeg, at a cost of about £7,500. The building includes a public hall 92ft. long by 62ft. wide,

suitable for conversion to such a purpose. It is proposed to open a Temperance Literature Depot, offices for the North of England Temperance League, reading room and reference library of works dealing with the liquor question. Offices for other temperance organisations will be provided, and club rooms for temperance, trade, friendly, and social societies, and for dinners, teas, &c. A large hall adjoining the building can be approached from the proposed institute.

**Nottingham.**—A new wing, the plans of which have been prepared by Messrs. A. Waterhouse and Son, is being added to the Nottingham General Hospital in commemoration of the Queen's Diamond Jubilee. The main feature of the new block—a series of circular wards one above the other—is attached by a



# Keystones.

**Rosa Bonheur**, the famous animal painter, died at Fontainebleau last Friday at the age of seventy-nine.

**A new Science and Art School** was opened a short time ago at Helston. It is the gift of Mr. Passmore Edwards, and has cost about £1,600.

**A New Town Hall at Ilford** is to be erected at a cost of over £25,000 from designs by Mr. B. Woollard, architect, of Finsbury-circus, London, E.C.

**A new Park Observatory** is to be erected at Oldham in commemoration of the Queen's Diamond Jubilee. The plans show a building of Oriental design, the cost of which is estimated at £600.

**One of the Organ Builders' Tricks.**—While the Hackney Roman Catholic Church was in course of redecoration, it was discovered that thirty-six yards of brown paper tubing had been used in the church organ in place of the ordinary metal.

**A Portrait of Cowper** in oils has been discovered at the ancient hostelry, called the Swan, at Berkhamstead, which is undergoing restoration. The hotel is over two centuries old, and much of the carved oak furniture now in use is considerably over a hundred years old.

**A Children's Ward** has been opened at the West Cornwall Women's Hospital, Redruth. The ward has been built at the south of the hospital and in communication with it. The architect was Mr. Sampson Hill, of Redruth, and the cost of the erection was about £580.

**The Parish Church of Eyke**, East Suffolk, has been opened, after restoration by Mr. A. J. Kersey, of Great Bealings. The chancel walls have been under-pinned, the nave repaired, the Communion space retiled, and a spire erected on the north side of the nave.

**The Guild of Handicraft, Ltd.**—The members of this guild have opened a small gallery at 16, Brook Street, Bond Street, London, W., where examples of the work executed at their workshops at Essex House, Mile End Road, London, E., may be seen. The guild was started some ten or more years ago with the object of encouraging good craftsmanship.

**The Tribunal of Appeal.**—The rebuilding of the premises of the Surveyors' Institution in Great George Street being now complete, the offices of the Tribunal of Appeal, established under the London Building Act, 1894, have been removed from the temporary premises in Savoy Hill to these new premises. All communications to the Tribunal should now be addressed to the Clerk to the Tribunal of Appeal, London Building Act, 1894, 13, Great George Street, Westminster, S.W.

**A Monument to President Carnot** was unveiled by President Loubet at Dijon. The monument stands in the Place de la République, and consists of a tall rectangular pyramid, on the principal face of which is an upright statue of President Carnot in marble. The President is supported by the tricolour flag, and has his right hand extended. On the sides of the pyramid is a seated figure, that to the left representing the grief of the province of Bourgogne, that on the right representing History engraving the name of Carnot.

**The Preservation of Antiquities in Germany.**—The German Emperor, during a visit to the Saalburg, near Homburg, sanctioned the final arrangements for converting the building into a museum for the preservation of Roman antiquities found on or near the Rhine, the huge wall which was erected on the German frontier by the Romans to guard against inroads from Germany. The Emperor has already given 40,000 marks for the restoration of the Porta Decumana and the adjacent walls; but about 350,000 marks more are required for the restoration of the whole wall.

# New Companies.

## The St. George's Cross Property Company, Limited.

This company has been registered, with a capital of £3,500 in £10 shares, with the object of purchasing Nos. 270 to 290, New City Road, Glasgow, and to reconstruct, rebuild, or alter any buildings belonging to the company. The registered office is, 58, St. Vincent Street, Glasgow.

## Broughton Moor Quarries Development Company, Limited.

This company was registered on May 17th by Messrs. Jordan and Sons, Limited, of 120, Chancery Lane, London, W.C., with a capital of £7,000 in £1 shares. Its object is to acquire and carry on the business of slate miners and manufacturers and slate and stone merchants, to be carried on as the Broughton Moor Slate Quarries Syndicate, at Broughton Moor, Lancashire. The first directors—to number not less than three nor more than four—are W. Lennard, J. Calvert, and J. W. Leeming. Qualification, £500. Remuneration as the company may decide. Registered office: 18, Northgate, Darlington.

## Birmingham City Properties Company, Limited.

This company was registered on May 10th by Waterlow and Sons, Limited, of Birchinn Lane, London, E.C., with a capital of £20,000 in £1 shares. Its object is to acquire and traffic in land and house and other property, and to carry on the business of financiers, capitalists, builders, merchants, &c. The first directors—to number not less than three nor more than seven—are to be nominated by the subscribers. Qualification, £150. Remuneration as the company may decide. Registered office, 33, Newhall Street, Birmingham.

## Austro-Hungarian Luxfer Prism Syndicate, Limited.

This company was registered on May 10th by Ashurst and Co., of 17, Throgmorton Avenue, London, E.C., with a capital of £25,000 in £1 shares. Its object is to enter into an agreement with the General Luxfer Prism Company, and to acquire, own, and work the right to use any invention relating to Luxfer prisms, prismatic glass for windows or side walks, glass, prismatic lights, &c. The first directors—to number not less than three nor more than five—are to be nominated by the subscribers. Qualification, £100. Remuneration as the company may decide.

## Callas, Son, and May, Limited.

Messrs. A. H. Atkins Limited, of 23, Bouverie Street, London, E.C., registered this company on May 17th, with a capital of £24,000, in £1 shares. The object of the company is to acquire and carry on the business of a furnishing and general ironmonger, gas and hot water fitter, sanitary engineer, bellhanger, plumber, &c, carried on by A. Callas, at 70, 72, 74, and 76, Oxford Road, Reading. The first directors—to number not less than three nor more than eight—are A. Callas, H. W. Callas, G. F. Callas, and T. May. Qualification, £250. Remuneration, £1,250 per annum, divisible, when less than 7½ per cent per annum is paid, and £1,500 per annum when more than 7½ per cent. is paid.

## Birmingham City Properties Company Limited.

This company was registered on May 10th, with a capital of £20,000 in £1 shares, to purchase for investment or resale and to traffic in land and house and other property, and to carry on the business of capitalists, financiers, builders, contractors, dealers in stone, sand, lime, bricks, timber, hardware, and other building materials, brick, tile, and terra-cotta makers, house and estate agents, &c. The first subscribers (each with one share) are: Joseph Green, 167, Great Colmore Street, Birmingham, builder; Thomas Fellows, 31, Buck Street, Birmingham, decorator;

Frederick Marsh, 88, Upper Sutton Street, Aston, house agent; Eustace Bayers, 29, City Road, Birmingham, clerk; Samuel E. James, 6½, Colleshill Street, Birmingham, basket manufacturer; Howard Cant, 33, Newhall Street, Birmingham, solicitor; Herbert J. Cheattle, 33, Newhall Street, Birmingham, solicitor. The first directors (to number not less than three nor more than seven) are to be nominated by the subscribers. Qualification £150. Remuneration, as the company may decide. Registered office, 33, Newhall Street, Birmingham.

## General Luxfer Prism Company, Limited.

This company was registered on May 17th by Ashurst and Co., of 17, Throgmorton Avenue, London, E.C., with a capital of £200,000 in £1 shares. Its object is to adopt an agreement made between the General Luxfer Prism Company of the one part and this company of the other part, for the acquisition of the rights to use any invention in relation to Luxfer prisms, prismatic glass for windows or side-walks, prisms of all kinds, glass, prismatic lights, electro glazing, and other means or processes for joining, uniting, framing, and mounting prisms, glass sections and tiles, and machines, apparatus, devices, moulds, methods, and processes for the manufacture of glass or prisms, and any secret or other information relating to any such method or process, and generally any invention, method, or process which may seem to the company capable of being profitably dealt with; to acquire and turn to account any real or personal property, patents, patent rights, &c. The first subscribers (each one share) are J. McEwen, E. T. Church, E. A. Wood, T. A. Vitali, J. Hindley, A. Mawson, and J. M. Lickford. The first directors—of whom there shall not be less than three nor more than five—are to be elected by the signatories. Qualification, £100. Remuneration to be fixed by the company.

# COMING EVENTS.

## Wednesday, May 31.

SOCIETY OF ARTS.—Ordinary meeting at 8 p.m.

ARCHITECTURAL ASSOCIATION.—Annual dinner, Holborn Restaurant, 7 p.m.

## Thursday, June 1.

SOCIETY OF ARTS.—Dr. J. S. Phené, on "The Schools of Painting on Sicily and Ephesus."

CARPENTERS' HALL, LONDON WALL (Lectures on Carpentry and Joinery).—Professor T. Roger Smith, on "Timber: Decay and Preservation of." 7.30 p.m.

SOCIETY OF ARTS (Indian Section).—Sir Charles Cecil Stevens on "The Port of Calcutta." 4.30 p.m.

## Saturday, June 3.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Annual excursion. Visit to Arbroath Abbey, &c.

NORTHERN ARCHITECTURAL ASSOCIATION.—Visit to Chester-le-Street and Lumley.

## Monday, June 5.

SOCIETY OF ENGINEERS.—Mr. R. G. Allanson-Winn on "Foreshore Protection, with special reference to the Case System of Groyning."

# CURRENT PRICES.

FORAGE.			
Hay, best	per load	£ s. d.	£ s. d.
Sainfoin mixture	do.	3 0 0	3 10 0
Clover, best	do.	3 0 0	3 15 0
Beans	per qr.	1 6 6	4 5 0
Straw	per load	1 0 0	1 16 0
OILS AND PAINTS.			
Castor, French	per cwt.	1 4 6	—
Colza, English	per cwt.	1 2 6	—
Copperas	per ton	2 0 0	—
Kerosine, water white	per cwt.	1 5 0	1 15 0
Lard	per cwt.	1 8 9	1 9 0
Linseed	per cwt.	0 10 3	—
Neatsfoot	per gal.	0 2 6	0 4 0
Paraffin	per cwt.	0 10 2	0 19 0
Pitch	per barrel	0 8 0	0 8 6
Tallow, Town	per cwt.	1 4 6	1 6 0
Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 14 0	—
Glue	per cwt.	1 14 0	2 18
Lead, white, ground, carbonate	per cwt.	0 19 0	—
Do. red	per cwt.	0 17 0	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	8 8 0	—
Do. sticklac	per cwt.	2 2 6	2 15 0
Pumice stone	per ton	0 8 9	—
METALS.			
Copper, sheet, strong	per ton	88 0 0	—
Iron, bar, Staffs, in London	do.	6 15 0	8 10
Do. Galvanised Corrugated sheet	do.	12 0 0	12 1



X

	£ s. d.	£ s. d.
Lead, pig, Spanish ...	14 1 3	—
Do. English common brands ...	14 5 0	—
Do. sheet, English, 6lb. per sq. ft. and upwards ...	16 10 0	—
Do. pipe ...	17 5 0	—
Nails, cut clasp, sin. to 6in. ...	9 0 0	10 0 0
Do. floor brads ...	8 15 0	9 15 0
Tin, Foreign ...	117 15 3	115 5 3
Do. English ingots ...	116 0 0	117 0 0
Zinc, sheets, English ...	27 10 0	28 10 0
Do. Veille Montaigne ...	31 0 0	—
Do. Spelter ...	28 1 3	28 16 3

TIMBER.

SOFT WOODS.

Fir, Dantzic and Memel ...	per load.	3 0 0	4 0 0
Pine, Quebec Yellow ...	do.	4 7 6	5 10 0
Laths, log, Dantzic ...	per fath.	4 0 0	6 10 0
Do. Petersburg ...	do.	10 15 0	12 10 0
Deals, Archangel 2nd & 1st per P. Std. ...	do.	12 0 0	12 5 0
Do. do. unsorted ...	do.	7 5 0	8 5 0
Do. Riga ...	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow ...	do.	14 15 0	—
Do. do. 2nd ...	do.	12 0 0	—
Do. do. Unsorted ...	do.	8 0 0	10 10 0
Do. do. White ...	do.	7 15 0	9 15 0
Do. Swedish ...	do.	11 5 0	12 0 0
Do. White Sea ...	do.	12 5 0	—
Do. Quebec Pine, 1st ...	do.	16 10 0	22 0 0
Do. do. 2nd ...	do.	12 0 0	—
Do. do. 3rd &c. ...	do.	7 0 0	7 15 0
Do. Canadian Spruce, 1st ...	do.	9 0 0	10 5 0
Do. do. 3rd & 2nd ...	do.	6 5 0	8 0 0
Do. New Brunswick ...	do.	7 5 0	8 0 0
Battens, all kinds ...	per P. Std.	7 0 0	8 15 0
Flooring Boards, 1in. prepared 1st ...	per square	0 11 3	—
Do. 2nd ...	do.	0 10 9	—
Do. 3rd &c. ...	do.	0 10 0	—

HARD WOODS.

Ash, Quebec ...	per load	3 17 6	4 10 0
Birch, Quebec ...	do.	3 12 6	3 17 6
Box, Turkey ...	per ton	7 0 0	15 0 0
Cedar, lin., Cuba ...	per ft. sup.	0 0 4	0 0 4 1/2
Do. Honduras ...	do.	0 0 3 7/8	—
Do. Tobasco ...	do.	0 0 4 21/22	—
Elm, Quebec ...	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras ...	per ft. sup.	0 0 5 1/2	—
Do. African ...	do.	0 0 3 1/16	—
Do. St. Domingo ...	do.	0 0 4 23/32	6 23/32
Do. Tobasco ...	do.	0 0 4 23/32	5 21/32
Oak, Dantzic and Memel ...	per load	3 5 0	3 5 0
Do. Quebec ...	do.	4 12 6	5 0 0
Teak, Rangoon, planks ...	do.	9 15 0	14 5 0
Wainscot, Riga (Baulk) ...	do.	3 15 0	5 15 0
Do. Odessa Crown ...	do.	3 15 0	5 15 0
Walnut, American ...	per cub. ft.	0 2 3	0 5 6

TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

BISHOPSTONE (Sussex).—For the erection of chimney-shaft, boiler-house, &c., Poverty Bottom, for the Newhaven and Seaford Water Company. Mr. F. S. Courtney, engineer, Broad Sanctuary Chambers, Westminster:—  
Longley and Co. ... £3,500 Miles and Warner ... £2,746  
King and Son ... 3,350 Meredew and Wort ... 2,639  
A. E. Nunn ... 3,203 Bostel, Son and Peat ... 2,500  
Whitehead and Co. ... 2,945 tie, London\* ... 2,500  
\*Accepted.

DEVONPORT.—Accepted for the erection of a dwelling-house, and alterations and additions to a cottage at Alfred-road, Ford, for Mr. C. F. Hocking. Mr. Edgar M. Leest, architect, Public Hall Chambers, Devonport:—  
S. Scott ... £330

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17 1/2 x 3 x 2	8 9	7 11	11 8
17 1/2 x 3 x 1 1/2	6 9	6 0	9 1



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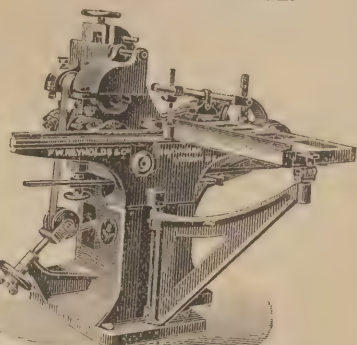
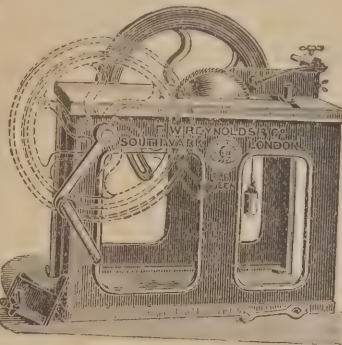
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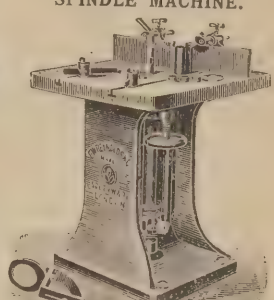
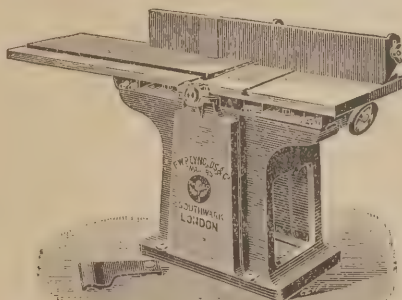
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**HADDENHAM (Bucks).**—For the erection of house and shop, for Mr. Freeman Clarke. Messrs. W. F. Taylor and Son, architects, Aylesbury:—  
W. Z. Green and Co. £1,287 Rose and Son ... £1,680 0  
Webster and Cannon 1,198 J. Holland ... 1,060 15  
W. W. Howland ... 1,166 W. Fooley, Bidlow\* 1,050 0  
\*Accepted.

**LEWES.**—For new Baptist Sunday School, for the trustees of the Eastgate-street Baptist Sunday Schools. Mr. H. Curtis Card, architect:—  
Berry and Bussey ... £1,125 H. Constable\* ... £988 17  
R. Piper ... 1,106  
[All of Lewes.] \*Accepted.

**LONDON.**—For the erection and completion of new Christchurch Schools and additions to the Bluecoat Schools, Caxton-street, Westminster, for the Vestry of St. Margaret and St. John, Westminster. Messrs. Beazley and Burrows, architects. Messrs. Pryce Cuxon and Leigh, surveyors:—

		Credit.
General Builders ..	£6,777 0	30
Hockley and Sons ..	4,750 0	30
Wall and Co. ....	4,861 0	10
Minter ..	4,715 0	—
Martin Wells and Co. ....	4,699 0	20
Morredew and Co. ....	4,615 0	20
Haskins ..	4,529 15	25
Masson and Son ..	4,493 0	—
Nightingale ..	4,515 0	30
Braid, Paton, and Co. ....	4,480 0	—
Stimpson and Co. ....	4,260 0	30

**LONDON.**—For enlargement of infants' department. Rolls Road School, for the School Board of London. Mr. T. J. Bailey, Architect. Mr. C. G. Downing, surveyor:—  
Johnson and Co. ... £5,320 Smith and Sons ... £4,327  
Edwards and Medway 4,763 W. Downs ... 4,396  
Outhwaite and Son ... 4,547 Stimpson and Co. ... 4,280

**LONDON.**—For new shop front, 167, Rye Lane, Peckham, for Mr. C. Biocchi. Messrs. Shaw and Galetti, architects, 49, Finsbury Pavement, E.C. 1:—  
G. Parker ... £275 0 0 C. Farley, Peck-  
Swan and Son ... 220 0 0 ham\* ... £165 17 6  
Spreckley and Co. 205 0 0  
\*Accepted.

**LONDON.**—For the erection of premises in Johnson's Court, Fleet Street, for Mr. R. S. Cartwright:—  
J. Marsland ... £9,965 Rider and Sons ... £9,810  
Howell J. Williams ... 9,876 Turtle and Appleton ... 9,164  
Hornsey ... 9,875 Newton and Sons ... 9,071  
Dove Bros. ... 9,845 Burman and Sons ... 8,585

**LOWESTOFT.**—For the erection of a laundry at the workhouse, Oulton, for the Union Guardians. Mr. Alfred Clarke, architect, 126, London-road, Lowestoft:—  
J. Wellham, Commercial-road, Lowestoft\* ... £975  
\*Accepted.

**MANCHESTER.**—For the erection of residence and stabling, &c., at Fairfield, for Mr. Councillor James Pollitt, of Openshaw. Messrs. C. K. and T. C. Mayor, architects, 41, John Dalton-street, Manchester. Quantities by Mr. J. H. Stone, 53, King-street, Manchester:—  
Wm. Shaw ... £3,357 Robt. Carlyle, jun. ... £3,115  
Burgess and Galt ... 3,329 Bullivant and Sons ... 2,870  
Geo. Macfarlane ... 3,216 E. and C. Jackson ... 2,962  
Megarity and Co. ... 3,175  
\*Accepted.

**NOTTINGHAM.**—Accepted for the erection of a detached residence in Winchester-road, Sherwood, for Mr. J. F. Fox. Messrs. W. F. Taylor and Son, architects, Aylesbury:—  
Wm. Marsh, Nottingham ... £527

**PONTYPOOL.**—For alterations and additions to workhouse buildings, Panteg. Messrs. Lansdowne and Griggs, architects, Newport:—  
Stephens and ... John Linton ... £17,284  
Bastow ... £19,994 0 0 C. H. Reed ... 17,235  
Morgan ... 18,228 6 8 Bailey Bros. ... 16,779  
David Jones ... 17,980 0 0 D. W. Richards, New-  
D. J. Davis ... 17,955 0 0 port\* ... 15,980  
Chas. Lock ... 17,617 0 0  
\*Accepted.

**PONTYPOOL.**—For the erection of four villas, Griffith's Town. Mr. B. J. Francis, architect, Abergavenny. Quantities by architect:—  
Lewis and Bradford £2,103 14 Sier and Denman ... £1,540 0  
Jno. Morgan ... 1,939 0 F. C. Parfitt, Main-  
Ed. Francis ... 1,750 0 dec., Newport, Mon. (accepted) 1,520 0  
Jones Bros. ... 1,392 10

**SOUTH SHIELDS.**—For additions, &c., to engine-house at electricity works, West Holborn, for the Corporation. Mr. F. Rennoldson, architect, Union-chambers, King-street, South Shields. Quantities by the architect:—  
Robt. Allison ... £2,622 12 2 J. C. Nichol ... £2,380 0 0  
S. Sheriff ... 2,409 0 0 W. Christie ... 2,331 4 3  
W. Robertson ... 2,400 8 11 T. Lumsden, Jar-  
John Moore ... 2,389 0 0 row-on-Tyne\* ... 2,296 0 0  
\*Accepted.

**SOUTH SHIELDS.**—Rebuilding premises, No. 3, Ocean-road, South Shields, for Mr. H. Hall. Mr. Fred. Rennoldson, architect, South Shields:—  
Jas. Young ... £1,484 0 0 J. C. Nichol ... £1,402 17 2  
Alex. Ross ... 1,458 3 9 W. J. Robert-  
Robt. Allison ... 1,446 11 8 son, South  
Wm. Christie ... 1,416 11 11 Shields\* ... 1,388 13 2  
\*Accepted.

**SOUTH SHIELDS.**—For erecting new store, Inean street, South Shields, for Mr. J. W. Pratt. Mr. Fred. Ren-  
noldson, architect, South Shields:—  
J. C. Nichol ... £1,702 0 0 Wm. Christie ... £1,561 12  
Robert Allison ... 1,700 0 0 C. Henderson ... 1,514 3  
S. Sheriff ... 1,700 0 0 Crawford & Sons 1,506 11  
Wm. Wilson ... 1,675 14 0 John Moore, South  
Alex. Ross ... 1,660 0 0 Shields\* ... 1,481 0  
W. J. Robert ... 1,651 4 2  
\*Accepted.

**STOKE MANDEVILLE (Bucks).**—For the erection of farm buildings and cottages, for Sir Oswald Mosley. Messrs. W. F. Taylor and Son, architects, Aylesbury:—  
G. H. Gibson ... £2,391 W. Z. Green & Co.,  
Webster and Cannon 2,238 Aylesbury\* ... £2,163  
Cook and Sons ... 2,174  
\*Accepted.

**SWINDON.**—For re-building Foresters' Arms pub-  
house and shop, Fleet-street, for Messrs. T. and J. Ar-  
messrs. William Drew, M.S.A., and Sons, architects, Swin-  
don. Quantities by the architects:—  
C. Williams ... £2,257 17 0 Flewelling and  
H. and C. Spack- ... 4,144 6 6 W. Chambers ... 3,983 0  
man ... 4,144 6 6 A. J. Colborne ... 3,641 10  
[All of Swindon.]

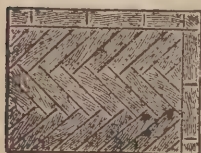
**SWINDON.**—Accepted for road-making, sewers, &c.,  
Even Swindon Estate, for Mr. James Morrison, J.P. Messrs.  
William Drew and Sons, surveyors, Swindon:—  
Barley and Wilkins, Swindon ... £1,906 15 6

**SWINDON.**—Accepted for the erection of house, Godda-  
venue, Swindon, for Mr. W. B. Wilmer. Messrs. Willa-  
drew and Sons, architects, Swindon:—  
A. J. Colborne, Swindon ... £435 0 0

**SWINDON.**—Accepted for erection of house, Godda-  
venue, for Mr. Sam Smith, F.C.S. Messrs. William Drew  
and Sons, architects, Swindon:—  
F. J. Liddington, Swindon ... £360 0 0

**SWINDON.**—Accepted for the erection of bowling all-  
at the Haydon-street Workmen's Club for Mr. Hovyn  
Horsell. Messrs. William Drew and Sons, architects, Swin-  
don:—  
J. Lay, Swindon ... £185 9 4

**WINDOVER (Bucks).**—For additions to farmhouse,  
Little London. Messrs. W. F. Taylor and Son, architect,  
Aylesbury:—  
Webster and Cannon ... £408 Seniors & Clarke,  
J. S. Holland ... 392 Windover\* ... £288 16  
\*Accepted.



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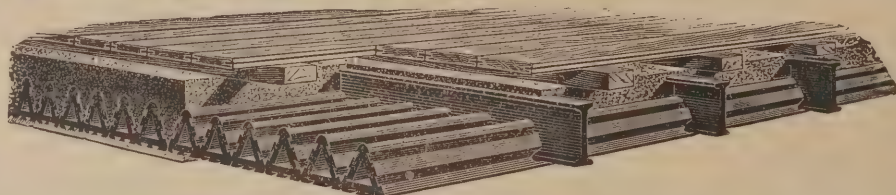
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*See Large Advertisement, Back Page, Monthly.*

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# CANADIAN NOTES.

## I.—THE MARKET FOR BUILDING MATERIALS.

By J. RAWSON GARDINER, of Montreal.

CANADA being the largest as well as the nearest of the British Colonies, holds, or at least should hold, the first place in the interest of all residents in the Motherland, both from a commercial and a sentimental standpoint. It is therefore a matter of serious import, especially to the British manufacturer, that in the same ratio as the Canadian market grows do the imports from the United States grow. But this cannot be said with goods from the British Isles. It is a stubborn fact that Americans are undoubtedly pushing ahead of their British competitors in the Canadian market, and this in the face of a reduction of duties in favour of British goods. It ought to be the object of every British subject to find out the cause of this and to see wherein it can be changed. The American worker—be he manufacturer or agent—if asked what three things have contributed to his success would probably reply, firstly, push! secondly, push!! and thirdly, push!!! It is this almost unceasing "push" that is undoubtedly forcing American goods to the fore the world over. If something is not done by the English to stem the tide it will not be long before Americans will have wrested the commercial supremacy of the world from the British, even though they have held it so long. Is it not more loyal and true to point out wherein the danger lies, and do all in one's power to prevent it, than to hide our eyes to the fact?

In the first place, then, let us look at the size of this Canadian market. The Dominion contains a population of over 5½ millions distributed in the several provinces, as far as can be ascertained, as follows:—

Province.	Population.
Ontario ... ..	2,500,000
Quebec ... ..	1,700,000
Nova Scotia ... ..	500,000
New Brunswick ... ..	325,000
Prince Edward Island ... ..	110,000
Manitoba ... ..	200,000
North West Territories ... ..	125,000
British Columbia ... ..	150,000
	5,610,000

These figures show somewhat how the market is distributed as to provinces, and the following table shows the chief cities, and the province in which they are situated, with the population of each:

City.	Province	Population.
1. Montreal in	Quebec .....	300,000
2. Toronto "	Ontario .....	200,000
3. Quebec "	Quebec .....	65,000
4. Hamilton "	Ontario .....	50,000
5. Ottawa "	Ontario .....	50,000
6. Halifax "	Nova Scotia ...	40,000
7. Winnipeg "	Manitoba .....	30,000
8. Vancouver "	British Colum-	40,000
(including Victoria) bia		

Together with the above tables let us take up the amount of buildings erected in these eight cities, and one ought to be able to form a fair idea of the market for building materials. First of all then let us take:—

1. *Montreal.*—Montreal, in the metropolis of Canada, is situated at the head of ocean navigation on the St. Lawrence River. This constitutes it the distributing point of all European imports. It is the wealthiest city in Canada, and it is here that a large proportion of the manufacturing, and the largest wholesale houses are situated. It is largely a commercial city. The population is three-fifths French-Canadian, a large number of Scotch, and a sprinkling of English, Irish, and nearly every other nationality. The buildings erected during 1898 amounted in value to some 2,500,000dols. Among these may be mentioned a fine buff-sandstone five-storey office-building for the London and Lancashire Insurance Co., in the French Renaissance style; a new building for chemistry and mining at McGill College

University; an extensive wing to the Grey Nunnery, costing 60,000dols.; a wing to the Victoria Hospital; a new theatre; and a nail factory and rolling mill, costing 25,000dols. Besides these buildings there were over 700 houses erected, many of them costly and well designed residences, and some thirty stores. Work during 1898 was slightly better than in the previous year, and prospects for the present year, as far as can be seen at this date, are bright.

2. *Toronto.*—This city is largely English speaking in contradistinction to Montreal. This, together with the fact that the surrounding towns and villages are more prosperous, makes the province, as a whole, in many ways more satisfactory from a commercial point of view. The buildings erected in 1898 were valued at 1,700,000dols., which is a large increase over the previous year and larger than in any year since 1892. This is very satisfactory as Toronto has suffered severely from the building boom, from which it had hardly yet recovered. The increase was in every branch of buildings, especially houses, factories, and warehouses.

3. *Quebec.*—The population of this city is nearly all French-Canadian, and commerce from this port has not been on the increase. The building operations were not extensive, only amounting to some half million dollars. Among the buildings erected may be mentioned the large wing to the hotel "Chateau Frontenac," which cost 150,000dols, a building for Y.M.C.A., costing 20,000dols., and a telephone exchange building, erected by the Bell Telephone Co., costing some 20,000dols. The lumber industry is the chief surviving one in this locality, and the surrounding country, from a commercial standpoint, need not be considered, as the villages are small and very much scattered.

4. *Hamilton.*—This is a bright go-ahead Ontario town, doing a building trade last year of some 500,000dols., distributed as follows:—

	Dols.
Dwellings.....	210,000
Alterations .....	40,000
Factories and Stores .....	200,000

The future for the building trade in this town is fairly bright.

5. *Ottawa.*—This city is the capital of the Dominion, and it is here that the stately Parliament Buildings are situated. The city has been chiefly centred round Parliament and the members, but of late years quite a large amount of business has sprung up, and at last Ottawa seems to show signs of going ahead commercially. Building operations last year amounted to about 650,000dols.

6. *Halifax.*—This town is largely noted as a military and a naval station, though there is quite a large amount of trade transacted here as well. Building operations, however, were not so active as usual last year, only some 600,000dols. being expended. A large proportion of the residences here are built of wood, which tends to give the town far from a bold appearance.

7. *Winnipeg.*—This city, situated as it is in nearly the centre of the Dominion, is the distributing point of nearly all the Manitoba and western grain. The city has been growing rapidly of late, but it is still suffering from the last land "boom." Building operations last year amounted in value to 500,000dols., but the building trades cannot be called brisk, though prospects for this year seem somewhat brighter, as the harvests for the past three years have been good and farmers have been able to obtain good prices. This is sure to tell favourably on the cities and towns very shortly. The large seven-storey hotel "The Manitoba," which has recently been burned to the ground, will probably be rebuilt this year.

8. *Vancouver.*—This Western city, situated on the Pacific coast, has been having quite a "boom" the last two years. It is to a large extent the distributing point of the mining districts, both at the "Klondyke" and at Rossland. The building operations in 1898 were far larger than ever before in the history of the city, and new buildings for the year were valued at 1,500,000dols. Among the most important may be cited: The new C.P.R. Station Buildings, a five-storey office building for "The Molson's

Bank" costing 100,000dols., and a fine structure for the "Imperial Bank." Prices of material ruled high and wages were steady, though sufficient labour is said to be in the market to meet local requirements. Rents are said to rule steady and remain high, as buildings are said still to be required both as houses and stores; but the question is, Will this last? The Provincial Government Buildings at the Post Office at Victoria were both finished last year. The Parliament Buildings are a stately block, by Mr. T. M. Rattenbury, have been erected at considerable cost. Otherwise building in this town has not been very bright.

It is hoped that these notes on Canada will give the British contractor, manufacturer, and working man some idea of the field on the side of the Atlantic, and enable them there to gauge somewhat of its possibilities.

## THE DISPUTE IN THE BUILDING TRADES.

AFTER the decision come to at the meeting of the master builders in Birmingham little peace might have been expected. Just as everyone was looking forward to a quiet period a somewhat sensational development took place in connection with the disagreement between the Leeds Federation of Master Builders and their employes. Acting on instructions received from the Executive Committee sitting in London, the members of the local branch of the London Order of Bricklayers decided on May 20th, at a meeting specially convened, to cease work forthwith in all cases where the masters have locked out 25 per cent. of their men. The men do not expect any good from yesterday's conference between the masters and the operatives in the allied trades, and they have also lost entire confidence in the Yorkshire Federation since the latter, upon its own initiative, locked out 25 per cent. of their men in sympathy with the Hull masters. They have refused to resume work except upon two conditions. The first of these is that their demand for an increase of wage at the rate of a penny an hour shall be complied with; and the second is that there shall be an alteration in the rule relating to apprentices. When the Manchester Unity Bricklayers heard of this step they described it as a suicidal policy of which they did not approve; other operatives engaged in the building trades in Leeds expressed the same opinion.

The Yorkshire Master Builders' Federation at a meeting held in Hull last Wednesday decided to make the lock-out of 25 per cent. of the men effective, and to take no further action until after the conference between the representatives of the National Association and the delegates of the allied building trades' unions.

At a meeting of the Scarborough Master Builders' Association on Saturday night it was decided that the resolution of May 3rd be carried into effect on May 31st, and that nine and a half hours' notice be given to 25 per cent. of the union men in each branch of the building trade in Scarborough. The Yorkshire Federation asked the Scarborough masters to lock out 25 per cent. on May 6th. The reply was that they could not see their way to do that, but they would agree to lock out on June 1st. The decision of the employers is a serious matter for the town, as a great deal of building is going on at present, plans having recently been passed for about 800 houses.

The conference between the Master Builders' Association and the Plasterers' Union was held yesterday at the Salisbury Hotel, Salisbury Square, Fleet Street, London E.C. The employers were represented by Alderman Holdsworth (Bradford), Messrs. B. J. Greenwood and Ryden (London), James Higson (Salford), G. Nichols (Leicester), and J. Sudgen (Bradford). The men's representatives were Messrs. M. Deller, D. Hennessey, Mark Jones (London), H. Duckett (Birmingham), George Jackson (Manchester), and A. McLeod (Newcastle). The meeting was held too late for us to publish this week a report o



As a result, but Mr. Deller stated that the following was the basis agreed upon for discussion:—

As regards clause 1 of the employers' manifesto compelling foremen to join the union, it is to be understood that the vote of the Plasterers' Association in February against the practice settles the point.

With regard to the question of apprentices, different practices prevail in different districts, the question shall be referred to special joint committees of both sides to draw up working rules to govern the matter. In reference to the clause dealing with boycotting, it is to be understood that while not admitting the accuracy of these allegations the Plasterers' Association will give an undertaking that no such boycott or blacklisting shall take place in future where the firms adhere to the rules mutually agreed upon. The employers, on the other hand, give a definite undertaking that such rules as are mutually agreed upon shall be strictly enforced in all parts of their contracts.

In reference to the question of demarcation it is proposed that joint committees shall be established in different districts, equally representative of the masters and men, who will draw up schedules of the work which it is recognised belongs to certain branches of the trade.

With regard to the clauses which speak of the refusal to work on buildings where some of the workmen employed may not belong to a trade union, and of the objection to submit all trade disputes to discussion at a conference between employers and employed, with a view to arrive at an amicable settlement prior to any strike or withdrawal of workmen, it is agreed that in the event of a dispute arising on any job or works the district officials of the National Association of Operative Plasterers shall send a written notice to the local Association of Master Builders, who shall inform them whether the said builder is a member of that body. If so, a strike shall not be sanctioned by the union until six clear working days have expired from the receipt of such notice, during which time the matter shall be considered by the employers and the representatives of the workmen, with a view to an amicable settlement. Failing a local settlement, reference shall immediately be made to the central joint committee of the two associations.

### The Enlargement of Waterloo Station.

Particulars of the revised plan for enlarging Waterloo Station show that the total area of the station is to be increased from 15½ acres to 23 acres. Four additional platforms are to be erected, permitting the approach of trains from seven new lines.

Bolton Stonemasons have demanded a penny per hour advance, and certain alterations in working rules. The masters held a meeting last week to consider the matter, and, in order to avoid a strike, offered a halfpenny per hour increase, which would make the men's remuneration 9½d. This was refused by the operatives, and the employers have now withdrawn their offer, and are determined to resist the men's demands.

Wakefield Joiners went on strike because their masters refused to accede to their demands to sign a code of working rules. They have decided to approach the employers, with a view to a settlement, and have sent a circular to each of them asking the following question: "Providing the clause relating to piece work is expunged from the rules, are you prepared to sign them; if not, are you in favour of the dispute being submitted to the Wakefield Board of Conciliation, and to abide by their decision?"

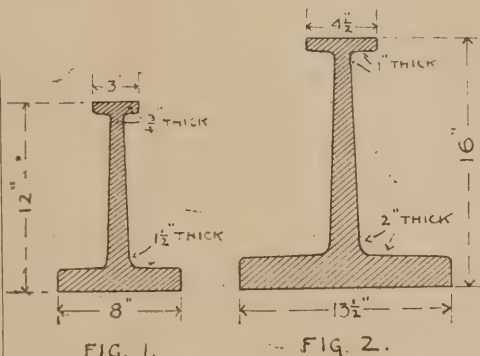
Paisley Labourers on Strike.—In Johnstone all the labourers in the building trades went out for an increase of a halfpenny per hour, which would make their wages 6d. per hour. Only one master conceded the demand. The Masters' Federation, comprising Paisley, Johnstone, Renfrew, and Barhead builders, met and decided to lock out their men if the Johnstone men did not return to work. As the men still held out this was done, and there are about 200 men locked out.

## CAST IRON BEAMS.

IN this article the formulæ for cast iron beams will be considered. In modern work, cast iron is now very rarely used; that is, as a girder. But still some knowledge of its strength is advisable to every student.

The strength of a cast iron bar 1" × 1" × 12" is 2100lb. That is the weight at which it breaks. Then, if cast iron were used in the form of bars, it would be merely a matter of simple proportion to obtain their respective strengths—under the same rules with regard to breadth, depth, and span, as those which apply to wooden beams. But as cast iron is not used as a bar, but a girder, a few preliminary remarks about its proportions will be necessary. The depth should vary according to circumstances from a minimum of  $\frac{1}{20}$ th of the span, to a maximum of  $\frac{1}{15}$ th. The sectional area of the bottom flange should be about six times that of the top. The reason of this is that cast iron is much stronger under compression than under tension, therefore requiring more material to resist the latter stress.

The ultimate or breaking strains of average good cast iron are: Compression, 48 tons per square inch of sectional area; tension, 9 tons ditto. Cast iron being a very uncertain material, liable to defects in the casting, &c., a high factor of safety (either 5 or 6) is always taken. Therefore working stresses of 8 tons



under compression, and 1½ tons under tension are obtained.

The formula for a cast iron girder is  $W = 2 \frac{a d}{l}$

$W$  = Breaking weight in tons in the middle.

$d$  = Depth of girder in inches.

$a$  = Sectional area of bottom flange in inches.

$l$  = Span in feet.

It will be observed in the formula, that the top flange is ignored, its size being obtained from the lower one, according to the rule previously mentioned.

One or two examples will now be given.

What concentrated load will the girder of the section shown in Fig. 1 safely carry? Span 16ft.

$$W = 2 \frac{a d}{l}$$

Bottom flange ( $a$ ) is  $8'' \times 1\frac{1}{2}'' = 12$  sq. in.

$$\text{Then } W = 2 \frac{12 \times 12}{16}$$

$$W = \frac{2 \times 12 \times 12}{16} = 18 \text{ tons.}$$

But this is the breaking weight. Then using 6 as a factor of safety, the answer is  $18 \div 6 = 3$  tons.

Next to reverse the case, and calculate the size of a girder to carry a given load. Here is a question once actually set:—

A cast iron girder has to carry a load of 12 cwt. per foot run of its length, including its own weight. Its length is 24ft. from centre to centre of bearings. Its depth is to be 16". Calculate its dimensions, and give a dimensioned section.

Total weight,  $12 \times 24 = 288$  cwt.

But this being distributed, load =  $14\frac{1}{2}$  cwt., or 7½ tons concentrated load.

Using 5 as a factor of safety:  $7\frac{1}{2} \times 5 = 36$  tons, the breaking weight.

Then a girder 16" deep is required, to break at a load of 36 tons in the centre, the span being 24ft.

$$W = 2 \frac{a d}{l}$$

$$36 = 2 \frac{a \cdot 16}{24}$$

$$36 = \frac{2 a \cdot 2}{3} = \frac{4 a}{3}$$

$$A = \frac{36 \times 3}{4} \text{ or } 27 \text{ sq. in.}$$

This, then, is the area of the bottom flange. A flange  $13\frac{1}{2}''$  wide × 2" thick would provide this area, while the top flange should be  $27 \div 6 = 4\frac{1}{2}$  sq. in., or, say,  $4\frac{1}{2}''$  wide × 1" thick. The girder then would be as Fig. 2.

It will be noticed that the lower flange is rather wide compared to the depth. This, of course, is unavoidable, owing to the depth being limited, and being rather shallow when the length of the span is considered.

If in such a question no depth were given, one would have to be assumed, and then the area calculated as shown. Should this result in a badly proportioned girder, the depth would have to be assumed afresh, and the calculation worked out over again, until a girder of good proportions was obtained. The formula used in the above is that supplied by Hurst, in the "Architectural Surveyor's Handbook."

Occasionally, cast iron girders were made with the top curved, called the hog-back girder, or, again, sometimes with the lower flange curved on plan. Thus, the amount of metal at each point was proportioned to the stress at that point, there being practically no extra labour involved in making the girders so, and material being saved.

Cast iron girders 12in. or more in depth should have stiffening feathers introduced about every 5ft. along the web.

## Masters and Men.

The Edinburgh and Leith Joiners are still on strike.

Some of the Edinburgh and Leith Plumbers are still on strike. The total number of masters who have granted the advance of wages is forty-four.

Glasgow Joiners struck for an advance of ½d. per hour on their wages, which were 9½d. per hour. They also demanded that the masters should sign the men's working regulations, which guarantee a wage of 10d. per hour for one year. The masters have fallen in with the men's desires.

The Building Trade of Norwich.—At a meeting of the Navvies, Bricklayers' Labourers, and General Labourers' Union last Thursday, the following resolution was unanimously passed: "That this meeting of builders' labourers accepts the offer of the master builders to pay 5d. per hour on and after June 1st next, and desires to express its thanks for the courtesy of the employers throughout the negotiations."

Great Lock-out in Denmark.—A lock-out of all the industries connected with the iron and building trades of Denmark began last Wednesday all over the country. The trouble began at Copenhagen in a dispute regarding joiners' wages. As negotiations for a settlement led to no result, the Employers' Union decided to extend the stoppage so as to embrace the joiners, carpenters, masons, painters, tinsmiths, and iron-workers. At the same time the lime-burners and the brick and tile manufacturers were instructed to deliver no goods while the stoppage continued, and the Executive Committee of the Employers' Union was authorised to still further extend the dispute should such a step be deemed necessary.



## Builders' Notes.

**The New Infirmary, Basingstoke,** is being warmed and ventilated by means of Shorland's patent Manchester Grates, supplied by Messrs. E. H. Shorland and Brother, of Manchester.

**An Arbitration Case.**—The sum of £2,500 was claimed by the Paisley Road Trustees of Messrs. Forrest and Brownlee, timber merchants, of Glasgow, as compensation for setting back their property on the south side of High Street, known as Townhead Terrace. Sheriff Lees, who acted as arbiter, assessed the compensation at £750. His valuation was 45½ square yards at £6 per square yard, which, with ten per cent. added for compulsory sale, was £300 6s. The balance of the sum awarded was his estimate of the damage caused to claimants in the utilisation of the remaining ground by the loss of this front portion.

**Dispute between an Architect and a Builder.**—A case was heard at the Wolverhampton County Court, before Mr. Morton Brown, in which Messrs. Manton and Son, architects, of Darlington Street, sought to recover £23 18s. 9d. from Mr. Philip Bowater, builder, for work done in respect of some houses at Gorsebrook, and there was a counter claim for £22 8s., which was said to be money paid and lent to the plaintiffs. The plaintiffs had prepared the plans for some houses which a man named Hickman was about to build at Gorsebrook. The defendant was the builder, and the case hinged on the question whether the defendant had contracted to pay the money, not for Hickman, but for himself.—After hearing several witnesses, his Honour found for the plaintiffs on the main issue, and decided that the amount to be paid should be settled by a practical man; the counter-claim to be deferred to see if credit had been given.

**Severe Judicial Criticism of the Workmen's Compensation Act.**—In the City of London Court, last week, Deputy Judge Pitt-Lewis, Q.C., delivered a judgment in the first Workmen's Compensation Act case that has been heard in the City. Frederick Martin, labourer, claimed compensation for personal injuries suffered whilst in the service of the London and India Docks Joint Committee, of Leadenhall-street, London, E.C. Martin worked for the defendants for a day and a half only as a labourer at their warehouse in Cutler-street, Houndsditch, close to the fanlight near the roof, when the plank on which he was standing gave way, precipitating him to the ground. His jaw was fractured and he was otherwise seriously hurt.—The defendants denied that their "warehouse," where the accident happened, was a "factory" within the meaning of the Act, and therefore the plaintiff could recover nothing. But if he was entitled to any damages, then it must be assumed, they urged, that the basis of his earnings per week was the sum of 7s. 3d. which he earned during the day and a half that he worked for the defendants, and not 30s. a week, as was suggested he had been in the habit of earning. The deputy judge said if the plaintiff had been entitled to recover anything it would, he feared, have had to be based on the 7s. 3d. and not the 30s.; but the plaintiff was not entitled to anything. The place where he worked was not a warehouse within the true sense of the word, according to his reading of the Act, which was an extraordinary tangle of legislation. The statute seemed to have been drawn by a person who had strayed into the land of topsy-turvydom, and there acted upon his recollection of the great composition, "The House that Jack Built," but also with the disadvantage of not knowing what he meant. The draughtsman of the Act had left the judges to guess at what was meant. There must be judgment for the defendant company with costs, but execution would be stayed, as he hoped there would be an appeal.

## Engineering Notes.

**The cost of the Nicaragua Canal** is estimated at 125,000,000dol. by the Nicaragua Canal Commission.

**A Big Order for America.**—The Phoenix Bridge Co., of Phoenixville, Pa., have received the contract from the Japanese Government to build a steel bridge for the Imperial Railway of Japan.

**A big Electric Tramway Scheme** is to be carried out at Birkenhead. It will include services to New Ferry, Higher Tranmere, part of Oxtown, and the north end of the town. The total cost is set down at over £208,000.

**Castle Martin Church.**—The heating having been very unsatisfactory for a long time, it was decided to place the matter in the hands of the specialists, John King, Limited, engineers, Liverpool, who recommended that the old apparatus be entirely removed, and that the church be fitted with their latest improved hot water heating apparatus, employing their well-known special economical coil heater, with water-way fire bars. This has now been carried out with the best results.

**The Lighting of Kingswood.**—The Local Government Board have sanctioned the loan of £1,200, for the purchase and erection of pillars and lamps. A dispute between the Urban District Council and the Western Counties Electric Light and Power Syndicate has been satisfactorily settled. The claim of the syndicate was for £500 as damages for breach of contract and £89 for light supplied. A counter-claim was entered by the council because of the sudden stoppage of the light, and the case has been met by the council paying £30 to clear themselves from all claim for lighting, &c.

**The New Pier at Brighton,** which has been erected opposite the Aquarium, was opened recently by the Mayoress. At present it is incomplete, the pavilion having still to be built, but the portion opened to the public extends some 1500ft. from the beach, and several smaller pavilions have been put up. The arrangements have been designed to resemble the kursaals on the Continent, including reading-rooms and dining-rooms, ornamental arches for electrical illumination purposes, and an electric tram up the centre of the pier. There are to be landing stages at the head of the pier to accommodate vessels in different positions. The entire structure covers an area of 2½ acres, and eighty-five miles of planking and decking have been employed in its construction. The work is being carried out under the superintendence of Mr. John Howard and Mr. E. St. George Moore.

**A New System of Gas Lighting.**—An interesting exhibition of the Tomzee-Greyson system of gas lighting was given in the Bradford Corporation Gas-Stove Department recently. Several members of the Bradford Corporation Gas and Electricity Committee were present, and much interest was shown in the proceedings. The essential point of the system is that the gas is compressed before entering the burner by means of mechanical apparatus fixed to the water supply, or in some other way, and the maximum pressure is 7½ atmospheres. This compressed gas is allowed to flow through an injector, and in that way, it is claimed, automatically mixes itself with the proper quantity of air. The mixture of gases is then burnt in the ordinary way with a Welsbach incandescent burner of large size, which is claimed to give forth a light equal in effect to that of an electric arc lamp. No chimney is required. The power required for working this apparatus is said to be insignificant, only amounting in cost to one farthing per 1000ft. of gas consumed. The system has been brought into public notice by a syndicate, of which Mr. H. Illingworth is the Yorkshire manager.

## Surveying and Sanitary Notes.

**Excavation Case at Morecambe.**—A case came before the Palatine Chancery Court, sitting at Liverpool on May 19th, in which Mr. Mansfield, on behalf of the District Council of Morecambe, applied to the Vice-Chancellor for an order to restrain Mr. Escombe, their contractor for laying a water main along the principal thoroughfare of Morecambe, from proceeding further with the excavation between May 19th and June 2nd, and also requiring him to fill up the present excavation. He pointed out that the contract provided for a suspension of the work at the Council's discretion. Mr. Maberly, for the defendant, said he agreed not to proceed with the excavation, but he declined to fill up, as the excavation in that case would have to be re-made. Mr. Mansfield said that the Council regarded the work and the state of the street as so great a nuisance during the holidays that, failing an order, they would fill it up at their own risk. The Vice-Chancellor said he could not make an order to fill up without going fully into the case. Mr. Maberly had undertaken not to proceed further with the excavation, and the Council must take their own course as to the rest.

**Insanitary Areas in Liverpool.**—In the Liverpool Municipal Buildings last Wednesday Major-General Crozier, R.E., one of the Local Government Board's inspectors, held an inquiry with reference to an application of the City Council for sanction to borrow £50,000 for the purposes of the Liverpool Sanitary Amendment Act, 1864, and £13,500 for the provision of dwellings for persons of the working classes, and for approval of the sale of certain corporate land situate in Green Lane, Lister Drive, and Brainerd Street, to the trustees of the Presbyterian Church of England (West Derby). Dealing with the application for sanction to the borrowing of £50,000, Mr. Pickmere, deputy town clerk, stated that the money was intended for the purchase and demolition of insanitary property. The houses in the groups set out in the medical officer's reports as being unfit for habitation, numbered 706, accommodating a population of 3,059. Dr. Hope (medical officer of health) said that in the houses presented sickness was always more or less prevalent, and they were a source of intense anxiety to the Health Committee. The general death-rate in those places was excessive. The houses were such as the Local Government Board had already sanctioned money to demolish, and had been removed with great benefit. They consisted of houses of three rooms one above the other, and back to back with similar property. There was no yard space, the property was arranged in courts, approached by tunnel or very narrow entrances, and there was most inadequate sanitary accommodation. Very little sunshine or air could get to the houses, and the plants in the window boxes, supplied by the Corporation to poor people, died as a consequence. The application for sanction to the sale of land at Green Lane was then proceeded with. Mr. Pickmere pointed out that the plot consisted of 4,000 square yards, bounded by Green Lane, Lister Drive, and Brainerd Street, and formed part of the Newsham Park Estate, from which it was cut off by the London and North-Western Railway Company's Bootle line. It was proposed to sell it at 7s. per yard to the trustees of the Presbyterian Church of England, the condition being that the church and hall should be erected within seven years. The last application considered was for sanction to borrow £13,500 for the provision of working-class dwellings. Mr. Pickmere said that the application concerned houses to be built to accommodate the persons displaced by the demolition of insanitary property. It was proposed to erect five four-roomed houses, eight three-roomed, and 119 two-roomed houses, making a total of 132 houses, at an estimated cost of £13,449 15s. 10d.



Trade and Craft.

SELF-KEYED WOOD BLOCKS.

Messrs. B. Ward and Co., of 15, Great George Street, London, S.W., have sent us a specimen of their patent self-keyed wood blocks for flooring. These blocks are supplied by them made from yellow deal, pitch pine, oak, maple, teak, and jarrah. Discs, disc keys, wood or metal dowels are not used in laying the blocks, but they are simply ploughed and tongued and laid in special mastic. The absence of disc keys or metal dowels is an advantage, as these little articles have an unhappy knack of getting loose or left out altogether. The flooring is supplied in a large number of designs.

HOLLIS BROS. AND CO.

The No. 2 list of mouldings, &c., which Messrs. Hollis Bros. and Co., of Leicester, have sent us, contains a large variety of new designs which are worth special notice. There are fifty plates, containing several illustrations of architraves, bay windows, beads, fillets, balusters, church benches, door frames and casings, dado panelling, mantels and over-mantels, ornamental match-boarding, &c. Attention should be paid to the "Sesame" door mouldings, which are becoming very popular. According to their price list, the ornamental match-boarding is only slightly dearer than plain matching, and it certainly looks much

better. The firm are carrying out to the letter their motto "Ars ex machinâ," and their catalogue is one of the most interesting we have received.

LINCROSTA-WALTON.

Messrs. Frederick Walton and Company, Limited, of 2, Newman Street, London, W., have sent us their splendidly illustrated catalogue of the Lincrosta-Walton decorations. This catalogue runs to nearly sixty pages, and each page contains a number of illustrations of admirably embossed reliefs. Some 200 or more designs of dados, fillings, friezes, and ceilings, are given, and about 500 illustrations of designs for dado and picture rails, borders, plaques, panels, mats, &c. These are excellently reproduced in colotype. The catalogue measures 16½ in. by 10½ in., and is neatly bound with red cloth. Very clear instructions are given in the book on the way to fix the Lincrosta-Walton.

"SALAMANDER."

The United Asbestos Co. Limited, of 158, and 160, Charing Cross Road, London, W.C., have sent us a copy of their plentifully illustrated catalogue of "Salamander" decorations. This runs to some forty pages, and contains reproductions of nearly one hundred different designs, all of which are good, and a large number beautiful. At the beginning of the catalogue three illustrations are given, showing the chief works and offices of the company. Particulars are also given as to the method of applying the decoration. On pages

eight and nine a price list will be found of the different patterns in the book. Some handsome designs of English and French Renaissance are illustrated, and the Gothic designs in very high relief are a credit to the firm. This catalogue should find a place near the hand of every architect and decorator.

P. E. CHAPPUIS AND CO.

The necessity of taking some steps to improve the natural light at the Cripplegate Institute led the committee of the Institute to experiment with a large number of daylight reflectors. Messrs Chappus and Co., of 69, Fleet Street, London, E.C., supplied the reflector which met with their approval. This firm has had much experience in the production and application of means for improving natural light. Their business has so increased in the last few years that it is estimated that over 50,000 of their daylight reflectors are fixed in London alone. Their catalogue contains some notes on the best means of making the most of daylight, and is well worth the careful perusal of any reader who has windows to which the daylight is obstructed.

Improvements at Wattstown. — New bridges are being erected over the Taff Vale Railway and the Rhondda Fach River at Pontygwaith, and a road is being made from Pontygwaith to Wattstown. The road and bridges will cost over £10,000, and are not yet completed.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—			
" 2	Bangor—Two Semi-detached Villas...	J. Mercer	Young and Mackenzie, 7, Donegall-square, Belfast.
" 2	Blackburn—Wine and Spirit Stores ..	Brewery Company, Limited	J. Bestwistle, Architect, Tacketts-street, Blackburn.
" 2	Hastings—Kiosk ..	Corporation ..	P. H. Palmer, Borough Engineer, Town Hall, Hastings.
" 2	London, N.—Repairs, Painting, &c....	St. Mary's Vestry, Islington	J. P. Barber, Chief Surveyor, Vestry Hall, Islington, N.
" 2	Whitby—Whitewashing, &c. ....	Workhouse Guardians ..	W. Burn, Workhouse, Whitby.
" 2	Worcester—Repairs and Painting ..	County Council ..	County Surveyor, Worcester-chs., Pierpoint-st., Worcester.
" 2	Merthyr Tydfil—Altering, &c. Chapel ..	.....	J. Morgan, Accountant, Waterloo-chbrs., Merthyr, Tydfil.
" 3	Leith, Scotland—Roof ..	North British Railway Co. ....	Blyth and Westland, 135, George-street, Edinburgh.
" 3	Lisnaskea, Ireland—12 Labourers' Cottages, &c.	Rural District Council ..	J. O'R. Hoey, Clerk, Lisnaskea.
" 3	Pontypridd—Alterations, &c., to County School	.....	A. O. Evans, Architect, Post Office-chambers, Pontypridd.
" 3	Trory, Ireland—Graveyard Wall ..	.....	Sexton, Trory.
" 3	Usk, Mon.—Repairs and Extensions to School ..	Higher Grade School ..	F. G. Harris, Higher Grade School, Usk.
" 5	Bradford—Walls ..	School Board ..	C. H. Hargreaves, Architect, Exchange-bldgs., Bradford.
" 5	Bristol—School ..	School Board ..	J. Mackay, Architect, Kingswood.
" 5	Bristol—Boundary Walls, &c....	City Council ..	T. H. Yabbicom, 63, Queen-square, Bristol.
" 5	Dublin—Station Building and Cottages ..	Great Northern Rly. Co. (Ireland)	Engineer-in-Chief, Amiens-street Terminus, Dublin.
" 5	Halifax—Conveniences at School ..	School Board ..	W. H. Ostler, 22, Union-street, Halifax.
" 5	Keighley—Schools, &c. ....	School Board ..	W. and J. B. Bailey, 9, Market-street, Bradford.
" 5	Lightcliffe, near Halifax—Five Houses, &c.	.....	B. Berry, Architect, Arcade-chas., Commercial-st., Halifax.
" 5	Whitehaven—School, &c. ....	.....	J. S. Moffat, 53, Church-street, Whitehaven.
" 5	Yarmouth, I.W.—Bridge Toll-house ..	Yar Bridge Company ..	F. Newman and Cox, 5, St. Thomas's-street, Ryde, I.W.
" 5	London, N.—Workmen's Dwellings...	Hornsey Urban District Council ..	E. J. Lovegrove, Offices, Southwood-lane, Highgate, N.
" 5	Morley—School ..	School Board ..	C. A. Battery and S. B. Birds, Architects, Queen-st., Morley.
" 5	Barking, Essex—83 Cottages ..	Urban District Council ..	C. J. Dawson, Surveyor, Public Offices, Barking.
" 6	Cefn Mawr, Wales—Alterations, &c., to Chapel ..	Pb-snezer English Baptist Chapel ..	J. W. Jones, Architect, Brooklea, Acrefair, E. labon.
" 6	Brierley Hill, Staffs.—Hot-water Apparatus ..	Kingswinford U.D. School Board ..	T. Robinson, Architect, Victoria-chambers, Stourbridge.
" 6	Cardiff—Carriage Shed and Covering over Steps	Great Western Railway Co. ....	Resident Engineer, Theatre Royal-chambers, Cardiff.
" 6	Leyton, Essex—Chimney Shaft ..	Urban District Council ..	W. Dawson, Council Offices, Town Hall, Leyton.
" 6	London, W.—Station ..	Great Western Railway Co. ....	Engineer, Paddington Station, W.
" 6	London, N.—Boundary Wall Fencing, &c....	Tottenham Urban District Council ..	P. E. Murphy, 712, High-road, Tottenham, N.
" 6	London, S.W.—Walls ..	Wandsworth Burial Board ..	G. T. Clouting, Clerk to Board, Town Hall, Wandsworth, S.W.
" 6	Portadown, Ireland—Roof over Platform ..	Great Northern Rly. Co. (Ireland)	Engineer-in-Chief, Amiens-street Terminus, Dublin.
" 6	Shrivenham—House ..	Great Western Railway Co. ....	Engineer, Reading Station.
" 7	Winchester—Police Cottage ..	.....	W. J. Taylor, County Surveyor, The Castle, Winchester.
" 8	London, N.—Repairs, &c., to Infirmary ..	St. Pancras Guardians ..	Browett and Taylor, 9, Warwick-court, Holborn, W.C.
" 9	Great Yarmouth—Destructor Buildings, &c.	Town Council ..	J. W. Cockrill, Borough Surveyor, Municipal Buildings, Great Yarmouth.
" 9	Balham, S.W.—Post Office ..	H.M. Commissioners of Works ..	J. Wager, Offices, Storey's Gate, S.W.
" 9	Portsmouth, Cornwall—Coastguard Buildings	Admiralty ..	Director of Works Department, 21, Northumberland-av., W.C.
" 10	Ashby-de-la-Zouch—Farm Buildings, &c. ....	Urban District Council ..	J. B. Everard, 6, Millstone-lane, Leicester.
" 10	Keswick—Inn ..	H. Spencer and Co. Ltd ..	D. N. Pape, Surveyor, Lake-road, Keswick.
" 12	Barry, Wales—Destructor Buildings ..	Urban District Council ..	J. C. Pardoe, Surveyor, Holton-road, Barry.
" 12	Herne Common, Kent—Additions, &c., to Workhouse...	Hlean Union Guardians ..	Master of Workhouse, Herne Common, Kent.
" 12	Newbury—Rebuilding Inn ..	Brewery Company ..	J. H. Money, Architect, Newbury.
" 12	Southampton—Police Cottages and Cells ..	County Council ..	W. J. Taylor, County Surveyor, The Castle, Winchester.
" 12	Brothcroft, Lincs.—School Enlargement ..	School Board ..	J. H. Tooley, 6, Bridge-street, Boston.
" 13	Kidderminster—Lodge ..	Town Council ..	A. Coomber, Borough Surveyor, Town Hall, Kidderminster.
" 14	Shotley Bridge—Foundations for Gasholder Tank	District Gas Company ..	T. Newbigging and Son, 5, Norfolk-street, Manchester.
" 14	Ulverston—Raising Stone Wall, &c....	Joint Hospital Board ..	C. W. Dean, 3, Benson-street, Ulverston.
" 14	West Ham—Water Tower ..	Union Guardians ..	Clerk, Workhouse, Leytonstone.
" 15	Warrington—Police Buildings and Offices ..	Watch Committee ..	Borough Engineer, Town Hall, Warrington.
" 19	Beckenham—Institute, Swimming Baths, &c. ....	Urban District Council ..	J. A. Angell, Surveyor, Council's Offices, Beckenham.
" 27	Hill End, near St. Albans—Hospital Block, &c. ....	County Lunatic Asylum Committee ..	G. T. Hine, 35, Parliament-street, Westminster.
" 27	Brighton—Alterations, &c., to Library, Museum, &c....	.....	F. J. C. May, Town Hall, Brighton.
" 27	Woodford—Schools ..	School Board ..	E. Tidman, 34, Victoria-street, S.W.
ENGINEERING—			
" 2	Hunstanton—Water Tower and Tank ..	Urban District Council ..	Stevenson and Burstal, 38, Parliament-street, Westminster.
" 2	Southery, Downham, Norfolk—Pump and Filter Beds	Parish Council ..	Clerk to Council, Southery.
" 2	Tonbridge, Kent—Opening Ground for Gas Mains ..	Gas Company ..	J. Donaldson, Secretary & Manager, Gasworks, Tonbridge.
" 3	Manchester—Electric Installation ..	Art Gallery Committee ..	City Surveyor, Town Hall, Manchester.
" 3	Nelson—Retorts, &c. ....	Gas Committee ..	W. Foster, Engineer and Manager, Gasworks, Nelson.
" 5	Burgess Hill, Sussex—Pipe laying ..	Water Company ..	S. H. Norman, Secretary, Offices, London-rd., Burgess Hill.
" 5	Sheffield—Engines, Electric Lighting Plant, &c. ....	Health Committee ..	C. F. Wike, City Surveyor, Town Hall, Sheffield.
" 6	Acton, Middlesex—Station ..	Great Western Railway Co. ....	Engineer, Paddington Station, W.



COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—Continued.</b>			
June 6	Newbridge, Mon.—Subway	Great Western Railway Co.	Resident Engineer, Theatre Royal-chambers, Cardiff.
" 6	Romiley—Bridge Works	Urban District Council	J. W. Bain, Clerk, School Brow, Bredbury.
" 6	Patricroft, Lancs.—Wiring, Lamps, and Fittings	Union Guardians	G. R. Peers, 96, Deansgate, Manchester.
" 6	Billerica, Essex—Sinking Well	Union Guardians	Master, Workhouse, Billericay, Essex.
" 6	London, N.—Culvert, &c.	Tottenham Urban District Council	P. E. Murphy, 712, High-road, Tottenham.
" 7	Stroud—Steam Road-Roller	Rural District Council	J. E. Haynes, Surveyor, Union Offices, Stroud.
" 7	Pinxton, Derby—Water Supply Works	Blackwell Rural District Council	H. Walker, Engineer, Newcastle-chambers, Nottingham.
" 7	Harmer Green, Welwyn, Herts.—Deepening, &c., Well	High Welwyn Limited	R. E. Middleton, 17, Victoria-street, Westminster.
" 7	London, S.W.—Electric Lighting Works	St. Mary's Vestry, Battersea	Vestry Clerk, Municipal Buildings, Lavender Hill, S.W.
" 8	Halifax—Electric Lighting	Guardians	Shepherd and Watney, Greek-street-chambers, Leeds.
" 8	Dublin—Repairs to Lightship	Commissioners of Irish Lights	O. Armstrong, Secretary, Irish Lights Office, Dublin.
" 8	Rugby—Laying Watermain, &c.	Rural District Council	T. W. Willard, Surveyor, Rugby.
" 8	Balcombe, Sussex, Well, &c.	Rural District Council	J. Mansergh, 5, Victoria-street, Westminster.
" 10	Port Talbot, Wales—Main	Margam Urban District Council	J. Taylor, Sons and Santo Crimp, 27, Great George-st, S.W.
" 10	Naples—Harbour and Docks		Public Works Department, Rome.
" 13	London, N.E.—Electricity Supply Mains	Hackney Vestry	R. Hammond, 64, Victoria-street, Westminster.
" 13	London, S.W.—Fire Float	London County Council	Clerk's Department, County Hall, Spring-gardens, S.W.
" 13	Manchester—Widening Line	Lancs. and Yorks. Railway Co.	Engineer's Office, Hunt's Bank, Manchester.
" 14	Shotley Bridge—Gasholder Tank	District Gas Company	T. Newbigging and Son, 5, Norfolk-street, Manchester
" 14	York—Railway Branch	North-Eastern Railway Co.	C. A. Harrison, Central Station, Newcastle-on-Tyne.
" 17	Dudley—Electric Lighting Works	Electric Lighting Committee	Wilson and Storey, 66, Victoria-street, Westminster.
" 17	Wolverhampton—Water Softener	Corporation	J. W. Bradley, Borough Engineer, Town Hall, Wolverhampton.
" 19	Toronto, Canada—Tower Clock, Bells, & System of Clocks	Board of Control	Street and Co., 30, Cornhill, London, E.C.
" 19	Horton, Christiania—Two Centrifugal Pumps, &c.	Government Dockyard Authorities	Commercial Department, Foreign Office, S.W.
" 19	Southampton—Widening Stone Bridge		W. J. Taylor, County Surveyor, The Castle, Winchester.
" 30	Shanghai—Tramway Concession	Municipal Council	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
<b>IRON AND STEEL—</b>			
June 2	Tonbridge—Cast-iron Pipes, &c.	Gas Company	J. Donaldson, Secretary and Engineer, Tonbridge.
" 3	Carlisle—Materials	Gas Committee	C. B. Newton, Engineer and Manager, Gasworks, Carlisle.
" 5	York—Telegraph Stores	North-Eastern Railway Co.	Graves, Telegraph Department, York.
" 5	York—Permanent Materials	North-Eastern Railway Co.	J. Snowdon, Central Station, Newcastle-on-Tyne.
" 5	York—Stores	North-Eastern Railway Co.	E. H. Clark, Stores, Gateshead.
" 5	Exeter—Cast-iron Pipes	Corporation	D. Cameron, 18, Bedford-circus, Exeter.
" 6	London, E.C.—Stores	South Indian Railway Co. Limited	H. W. Notman, 55, Gracechurch-street, E.C.
" 7	Waterford—Railway Stores	Waterford, Limerick, & Western Co.	J. J. Murphy, Secretary, Head Office, Waterford Terminus.
" 7	Trichinopoly—Water Pipes and Fittings	Government of Madras	H. S. King and Co., 65, Cornhill, London, E.C.
" 9	London, S.W.—Steel Joists	Battersea Vestry	Vestry Clerk, Municipal Buildings, Lavender Hill, S.W.
<b>PAINTING AND PLUMBING—</b>			
June 2	London, W.—Painting, &c., Schools	St. Marylebone Guardians	Superintendent, St. Marylebone Schools, Southall.
" 3	Littleborough, Lancs.—Painting	Co-operative Society of Industry Ltd.	Offices, Hare Hill-road, Littleborough.
" 3	Pontypool—Painting, &c.	Trevethin School Board	H. Bythway, Clerk, Pontypool.
" 5	Bristol—Plumbing Works	School Board	J. Mackay, Architect, Kingswood.
" 5	Kingstown, Ireland—Painting, &c.	Urban District Council	J. Donally, Clerk, Town Hall, Kingstown.
" 5	London, W.—Painting, Cleaning, &c.	St. Marylebone Union Guardians	Superintendent at Schools, Southall.
" 9	London, E.C.—Painting Artizans Dwellings	Corporation	Engineer to Corporation, Guildhall, E.C.
" 27	Macclesfield—Painting Two Gasholders	Gas Committee	— Newbigging, Engineer, Gasworks, Macclesfield.
<b>ROADS AND CARTING—</b>			
June 2	Eastbourne—Flints	Workhouse Guardians	L. Jeffery, Clerk, Trinity-chambers, Eastbourne.
" 3	Chelmsford—Kerb, &c.	Essex County Council	P. J. Sheldon, Chief Surveyor, County Offices, Chelmsford.
" 3	Levenshulme—Stores	Urban District Council	J. Jepson, 8A, Tiviot-dale, Stockport.
" 3	Slough—Setts and Paving	Urban District Council	W. W. Cooper, 1, Mackenzie-street, Slough.
" 5	Wimborne, Dorset—Road Works	Urban District Council	C. Munton, Surveyor, Wimborne.
" 5	London, N.—Works	Hornsey Urban District Council	E. J. Lovegrove, Council's Engineer, Southwood-lane, N.
" 5	Armagh—Footpath	Urban District Council	J. C. Boyle, Town Surveyor, Armagh.
" 5	Brierfield, near Burnley—Works	Urban District Council	J. T. Landless, Engineer, Station-buildings, Nelson.
" 6	London, N.—Culvert, Road, Tar Paving, &c.	Tottenham Urban District Council	P. E. Murphy, 712, High-road, Tottenham.
" 6	Pershore, Worcs.—Stone	Rural District Council	A. E. Baker, Clerk, Pershore.
" 6	Branksome, Dorset—Street-paving Works	Urban District Council	S. J. Newman, 3, Tennyson-bldgs., Ashley-road, Branksome.
" 7	Cardiff—Kerbing	Glamorgan County Council	County Surveyor, Town Hall, Bridgend.
" 7	Kettering—Street Works	Urban District Council	T. R. Smith, Surveyor, Market Hill, Kettering.
" 7	Old Hill, Staffs.—Forming, &c., Road	Rowley Regis Urban District Council	D. Wright, Clerk, Council Offices, Old Hill.
" 7	Plumstead—Paving, &c.	Vestry	W. C. Gow, Surveyor, Vestry Hall, Maxey-road, Plumstead.
" 8	Dorking—Making-up	Urban District Council	G. S. Matthews, 35, High-street, Dorking.
" 8	Reading—Improvement Works	Sanitary Authority	J. Bowen, Borough Surveyor, Town Hall, Reading.
" 9	Shrewsbury—Hire of Steam Roller, &c.	Atcham Rural District Council	J. Everest, Clerk, St. John's-hill, Shrewsbury.
" 10	Rushden, Northants.—Materials	Urban District Council	W. B. Madin, Surveyor, Vestry Hall, Rushden, R.S.O.
" 10	Kettering—Street Works	Urban District Council	T. R. Smith, Surveyor, Market-hill, Kettering.
" 10	Hastings—Cartage	Rural District Council	D. Paine, Dist. Surv., Stonelynk Farm, Fairlight, Hastings.
" 12	London, N.—Wood Paving	Islington Vestry	J. P. Barber, Vestry Hall, Upper-street, N.
" 13	West Ham—Pitching and Private Street Works	County Borough	L. Angel, Surveyor, Town Hall, Stratford, E.
" 15	London—Making-up Roadways, &c.	Metropolitan Asylums Board	Offices, Norfolk House, Norfolk-street, W.C.
" 26	Folkestone—Three Roads		H. B. Bradley, 52, Sandgate-road, Folkestone.
" 30	Wolverhampton—Granite Setts	Streets Committee	J. W. Bradley, Surveyor, Town Hall, Wolverhampton.
<b>SANITARY—</b>			
June 2	Newburn-on-Tyne—Extension of Sewer Outfall	Urban District Council	T. Gregory, Surveyor, Newburn.
" 3	Slough—Sewer, &c.	Urban District Council	W. W. Cooper, 1, Mackenzie-street, Slough.
" 3	Pembroke Dock, Wales—Sewerage Works	Town Council	Beesley, Son and Nichols, 11, Victoria-street, Westminster.
" 3	Bridlington—Sewerage Works	Urban District Council	Surveyor, Victoria Rooms, Bridlington.
" 3	King's Norton, near Birmingham—Sewers	Urban District Council	A. W. Cross, 23, Valentine-road, King's Heath.
" 3	Princes Risborough, Wycombe—Sewers, &c.	Wycombe Rural District Council	J. Taylor, Sons and Santo Crimp, 27, Great George-st., S.W.
" 8	Valetta, Malta—Stoneware Pipes	Crown Agents	Crown Agents for the Colonies, Downing-street, S.W.
" 13	Market Harborough—Sewers, &c.	Rural District Council	J. B. Everard, 6, Millstone-lane, Leicester.
" 15	Chartham—Re-drainage, Rain-water Reservoirs, &c.	Kent Cnty. Lunatic Asylums Committee	W. J. Jennings, 4, St. Margaret's-street, Canterbury.
" 15	Berkhamstead and Northchurch—Sewers, &c.	Joint Sewerage Committee	J. Lemon, 9, Victoria-street, S.W.
<b>TIMBER—</b>			
June 2	Genoa—Teak Wood	Spezia Dockyard Authorities	Commercial Department, Foreign Office, S.W.
" 5	London, E.C.—Timber, Bricks, Lead, &c.	Corporation	Surveyor, Guildhall, E.C.
" 10	South Hetton—Colliery Timber	Coal Company, Ltd.	J. R. Lambert, South Hetton, Sunderland.

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DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
June 6	Salford—Laying-out Site of Barracks	£30, £20, £10	Corporation.
" 20	Tendring, Essex—Sewerage Scheme	£21	District Council.
" 27	Edinburgh—County Buildings	£200, £100, £50	Midlothian County Council.
" 30	Wakefield—Central Buildings	£50, £30, £20	Wakefield Industrial Society, Ltd., Bank-street, Wakefield.
" 30	Buckie, Scotland—Bridge over Burn	£26 ss.	Commissioners.
July 3	Hurrogate—Kursaal	£150, £100, £75	Corporation.
" 3	Lichfield—Grammar School	£20	H. H. Brown, Clerk to Governors, Lichfield.
" 27	Plumstead—Municipal Buildings and Public Library	£100, £75, £50	Edwin Hughes, Clerk, Vestry Hall, Maxey-road, Plumstead.
No date	Hawick—Tenements of Houses and Cottages		Hawick Working Men's Building and Investment Co., Ltd.



## Property and Land Sales.

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**MESSRS. DEBENHAM, TEWSON, FARMER, and BRIDGEWATER** are instructed to LET by AUCTION, at the MART, on TUESDAY, JUNE 13th, at TWO, on a Building Lease, for a term of 80 years direct from the Freeholders, the very compact and valuable SITE of Nos. 90, 91, and 92, Fleet-street, and 2 and 3, St. Bride's-avenue, in the City of London.

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**FAREBROTHER, ELLIS, EGERTON, BREACH, GALSORTHY, and CO.** will LET by AUCTION, at the MART, Tokenhouse-yard, E.C., on THURSDAY, JUNE 8th, 1899, at TWO o'clock precisely, on Building Lease, for a term of 80 years, the extensive SITE occupied by the premises known as No. 26, Austinfriars, Old Broad-street, containing an area of about 4,000 superficial feet, admirably adapted for the erection of a block of offices arranged to suit the requirements of stockbrokers, and for which there is the unlimited demand at highly remunerative rents. The property abuts at the rear upon the gardens of Drapers'-hall, affording unusual facilities for the free access of both light and air.

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By EDWIN FOX and BOUSFIELD,

At the AUCTION MART,

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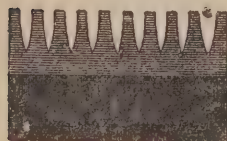
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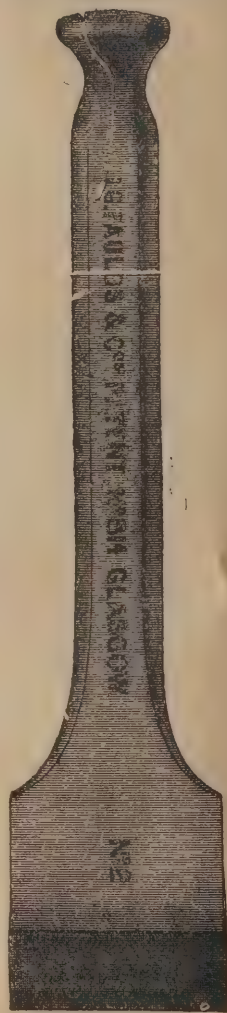
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JUNE 7, 1899.

No. CCXXVI.

## An Architectural Causerie.

### Architecture in the Novel: "The Girl from the Farm."

THE most sympathetic readers of Bulwer Lytton, or even of Sir Walter

Scott, fail to be altogether convinced by the descriptions of architecture that form the background of their historical romances—the glamour, sentiments, and associations, which in the lapse of time naturally attach to buildings, or groups of buildings, are strained and unreal, or the archæological knowledge is not over well woven into the thread of the stories. The reader not unnaturally comes to harbour the suspicion that the wonderful castles, churches, dwellings, and armoured knights, "sans reproche," are merely interpolated to produce a mediæval effect. Against a modern writer like Thomas Hardy no such criticism could be urged, for while his novels have many and beautiful prose pictures of old time architecture, they are never felt to be obtruded to the detriment of the general design. Without them that wonderful unity, so characteristic of his novels, would be lost, and his Wessex folk would wander through the pages like quaint and philosophic children thrust out from their inheritance. In Hardy there are set before the reader the tragedies, resulting from the clash of old and new ideas with their corresponding material expression, the new scene, at first raw and ostentatious, gradually blotting out or vulgarising the remains of an ancient world. Both Hardy and Scott press mediæval architecture into the service of their art; Hardy, as suggested, with complete success, due mainly to the relation in which his folk stand to their old time surroundings. In contrast to Hardy and Scott is the description of architecture in "The Girl from the Farm" by Gertrude Dix. In passages simple and direct, the author pictures a country scene, with bald-looking cottages, and a farmhouse in the background, such a scene as we may expect to be pretty general, as the ancient church, the vicarage, and the cottage with its thatched roof and white-washed walls, are wiped out by the "obliterator of historic records," or by the encroachment of factory upon farm lands. It is not altogether a pleasing picture, but to those interested in village life and customs, and our rural districts to-day, the picture is real enough, and is presented to the reader by an artist who reminds one at times of Flaubert, so impersonal is the description. Here are some passages from his novel: "Between eight and nine miles from Allington stood a square farmhouse, with a background of bleak hill. Around it the country was very thinly populated, dotted it wide intervals with cottages for the hinds, built of grey stone and roofed with slates, colourless where colour was most needed. The farm itself was of another style, it had originally been intended as a sort of villa residence with a pretentious stucco front, which had blistered here and there in ugly patches, emphasised rather than concealed by a thin coating of whitewash. The ugly, qualid house with its blistered walls

and sparse nettles at their base had a fascination for him. He had wanted change and beauty, and the straight, dark valley, bounded on either side by a low moist curtained wall of hills, had brought him to this. For miles round the trees were few and far between, most of them elms with bulky trunks and wild-like unluxuriant tops dotting the land on either side of the grey streak of road stretching away as far as the eye could see. The only hill for miles was the solitary mound which rose at the rear of the farm." In this quotation, which naturally suffers taken from the context, there is not only a description of rural architecture of to-day, but a certain architectural quality in the scene itself. The long valley, dotted with cottages, and bounded by the mist-curtained wall of hills, with the farmhouse at the far end, becomes very real to the reader. Mr. Lionel Johnson has almost compelled us to associate with favourite authors some symbol or image. Of Hardy he says: "My vision is a rolling

valley, much the same vision comes to her, perchance, as came to the Apostle John when sojourning on the island of Patmos, for he, too, dreamed of "a new Heaven and a new earth," he, too, saw the new Jerusalem, the city with walls "great and high," garnished with "all manner of precious stones," with shining streets entered through gates of pearl, and reached by "a golden road." G. L. L. M.

### The Study of Detail.

EACH of the great elements of architectural composition, such as mass, proportion and grouping has at one period or another received paramount attention. Mass was predominant in Thebaic Egyptian work; proportion in Grecian, and grouping in Gothic. Yet neither was sufficient, without perfection of detail, to produce a perfect architectural style. Detail in each of these three greatest of architectural periods waited upon the



ANCIENT MINT AND ALCAZAR FROM THE ERESMA, SEGOVIA.

down country crossed by a Roman road; here a gray standing stone, there a grassy barrow with its great bones, its red-brown jars, its rude gold ornament still safe in the earth; a broad sky burning with stars, and a solitary man. With the girl from the farm we learn to associate the valley bounded on either side, the lonely farmhouse, and the roads that intersect the valley, with cottages here and there. Near the end of the chapter the girl is standing in the outhouse attached to the farm with the man from Allington, her mind conjuring up beautiful visions of what life would be in the town beyond the hill. As they stand there "a ruddy shaft of sunset light pierced into the dimmest recesses of the outhouse, and both turned simultaneously to the door at the rear. The sinking sun had broken through the clouds, which flamed at their edges as though they burned with fire. A stormy crimson light suffused the open spaces of the sky, which grew rapidly wider, and were reflected in the pools, and long wet roads across the valley till they gleamed like fiery watercourses. The girl pointed to the widest and brightest of these. 'That's the way to Allington,' she cried. 'Look, it's a golden road!'" Here is the same scene, sunlit, transformed by the sun-god, and as the girl stands on the threshold of the outhouse, and looks across the

greater elements, subservient to them, embellishing without obtrusiveness, and in perfect harmony with the whole. Put differently, the architecture was commanding, over-ruling all, and the detail naturally corresponded, falling into the line. Not so has it been with revivals. With the comparatively recent Gothic revival it is well known, and almost within the memory of many of us, that an understanding of detail preceded an understanding of the full spirit of the works of the middle ages. Similarly we know that the Italian Renaissance was based on a study of Roman detail, the genius of the time developing the mass and proportion of the buildings of the time; and similarly the Roman itself was again based on the detail of the Greek, and the Ptolemaic Egyptian on that of the Thebaic work of a thousand years before. In all these instances the study of detail, first by way of copyism and then by development, has preceded the production of great architectural works. In matters of this sort, history has a great knack of repeating itself. The sequence of events in the past will probably be the sequence in the present and in the future. Of a great, elementary, original type of architecture, such as it has often been fashionable to twit the modern architect with not producing, there is at



present no indication, for there is apparently no one underlying essential motive of sufficient strength for its upspringing. On the other hand there has probably been no period of the world's history when the study of detail has been so intense and so universal as it is in England at the present time, and this study, due largely to the influence of William Morris, is carried on in no mere spirit of slavish copyism. We accept it as a matter of course that our wall papers, our table cloths, and our window curtains shall be elegantly designed, artistic as we say, in spirit; and this without thought of the significance of this introduction of beautiful detail into the commonplaces of daily life. If we are to judge by what has happened in the past, and that under much less favourable circumstances, we English of the twentieth century are bound to become, as we are indeed fast becoming, an artistic people, and the production of great architectural works is as sure to accompany universality of artistic perception now, as it did in Italy in the sixteenth century, and in England and France in the thirteenth and fourteenth. What lines these great works will follow we cannot tell, we dare not guess; but the detail is developing on well understood principles, based on the study of both the Gothic and Renaissance, and we can at least foster and assist in this development.

G. A. T. M.

### The Wayfarer in Paris.

THE Wayfarer tells me he set out for Paris with a feeling much like that which he used to have when entering a new office. Repeated experiences never seem to have brought him that serenity of mind characteristic of the wayfaring species; for whenever on some new quest he is taken short with a desire to retreat, to allow his tent, so to speak, to remain where it is. This time the symptoms were very bad, but at last, after a severe struggle, the tent pegs were lifted, materials were packed, and a sudden and erratic scuffle made for the sea-coast. After a disastrous journey, during which he lost his bag, his temper, and that modesty of demeanour of which he is so admirable an example, he arrived in Paris early in the morning. The streets of Paris, says the Wayfarer, are laid out in broad, clear and definite lines, and planned to give fine approaches to the public buildings. All the squares and gardens are similarly treated, without any miserly economy such as we find in London. In the general planning of large buildings, the laying out of streets and gardens, the Parisian is far in advance of the Londoner, and we might do worse than take a leaf out of his book and plan our municipal buildings, thoroughfares, and open spaces on more architectural lines. Not, mind you! ejaculated the Wayfarer, that I would for a moment adopt their street architecture, for that is just a trifle too monotonous and even dreary in dull weather; but we might at any rate, by the cultivation of more generous ideas as to what constitutes a public building, a street, and an open space, lose that insignificant and provincial air worn by many of the London streets. They are all too narrow, and the erection of new buildings is carried out without any regard one to the other. The first impression of a Parisian street is that they knew what they wanted to do, and straightway did it without hesitation, frequently sacrificing domestic arrangements to permit of a fine facade towards the boulevards. In justice to the Londoner it must be said that in the arrangement of flats he is ahead of the Parisian, who is either unable to grasp intricate planning, or puts a fine street before comfortable living apartments; as he lives more out of doors than the Londoner, it is perhaps wiser that it should be so. This, said the Wayfarer, hesitating a moment,

seems an inadequate explanation of the different ideas influencing French and English methods of planning and architecture. For my own part, he stuttered, there seems to be a closer sympathy between the Frenchman and the ancient Greek than with us; there is something of the studied simplicity in Parisian architecture that we find in the Parthenon. It is the same in detail. Take any single example of a street front in the Boulevard St. Germain, or the Rue de Rivoli, and examine the parts; not one, but nearly all are detailed with almost the refinement and clearness of a Greek, incarnated in the Parisian workman. Parisian streets, says the Wayfarer, summing up in a modest, but for him dogmatic way, don't appeal to me, their serenity, blitheness, and a certain air of completeness, coupled with a lack of variety are characteristic, exasperating to the Wayfarer in his contumacious moods. Row after row of windows, a seemingly never-ending parapet on either side of the principal streets, made the Wayfarer long for some change, something of the unexpected, which in Parisian street architecture never happens.

G. LL. M.

## OUR COMPETITION.

### FINAL ANNOUNCEMENT.

THOSE of our readers who intend to take part in our Competition for Designs for a Country House and have not already despatched their designs, are reminded that to-day (Wednesday, June 7th) is the

### LAST DAY

for doing so. We shall be obliged, by the conditions of the Competition, to disqualify any designs that reach us later than to-morrow.

There is every indication of a thoroughly successful competition, as no less than

### 122 COMPETITORS

have intimated their intention of submitting designs. After the adjudication has been made we shall publish a selection of the designs, which can hardly fail to prove both interesting and useful to many of our readers.

Up to mid-day on Monday designs had been received bearing the following mottoes:—

Ad Valorem, Albion, Appliqué, Bluebell, Build, Con M., Clerk of Works (two sets), Clodhopper, Comfort and Convenience, Craignez, Honte, Cypress, Dulce Domum, Endeavour, Firefly, 500 to 1 Chance, Flint, Gradatim, Hawthorn, Hospice, How, Joss, Man of Kent, Muff, XIX. Century (two sets), Ogee (two sets), Red Rose, Rustic, Sou' Wester, Tempus Fugit, 23, Unus, Yew, Young Will, Domi, Home.

Designs with the sealed envelope but without separate specifications have been received from Star and Othniel; the latter only sends two plans with the envelope. In these cases the specifications may be contained in the envelopes. We mention these details so that any competitor who has inadvertently omitted to send part of what is required by the conditions may rectify the error before it is too late.

## On Reflection.

### Birthday Honours.

THE titles and other distinctions that are awarded annually on the Queen's birthday are determined by so many other considerations than the merits of the recipients that it is with no surprise we find that the latest batch of persons selected for distinction includes very few names of real eminence. One or two there are, however, who rise prominently above the level of respectable mediocrity attained by the majority. In the knighthoods conferred upon Sir Lawrence Alma-Tadema and Sir William Henry Preece fitting honour has been paid to two men whose names will be prominently associated with the highest accomplishments of British Art and Science during the closing years of the nineteenth and—let us hope—the opening years of the twentieth century. One omission cannot fail to strike those who are concerned in the interests represented by this journal. Notwithstanding that several buildings of the first importance have been put in hand during the past few months no architect's name is included in the list. One might have hoped that at any rate the claims of the distinguished architect of the Victoria and Albert Museum would not have been passed over, especially as the Queen herself has shown so deep an interest in the new building. How long will it be before those in high places begin to recognise that the creator of noble architecture has a claim on the recognition of the State, certainly not inferior to that of the painter, the merchant, and the magistrate?

### A Needless Quarrel.

WE do not know whether either of the parties concerned in the recent dispute in the building trade considers that it has won "a famous victory." The settlement that has been arrived at seems to be a fair and reasonable one, but what must strike most observers is that the dispute might just as well have been settled without the stoppage of work for a single day. We have before expressed our opinion as to where the blame lies for this particularly needless quarrel. A group of hot-headed extremists amongst the operative plasterers, intoxicated by too much prosperity, precipitated a conflict of which many even of their fellow-workmen disapproved. But it is not always so. We do not take the view of the Liberty and Property Defence League that where friction arises between employer and employed it is always the British workman who is to blame. The unfortunate thing is that whatever the cause of the dispute, the story of its progress is nearly always practically the same: the strike or lock-out, the confident assertions of "no surrender" on both sides, the charges and recriminations, the loss of trade to the masters, the growing poverty of the men, and the sufferings of their families, and finally the coming together of the disputants in a somewhat chastened spirit, and the resumption of work on the basis of a compromise, which two or three reasonable men on each side might, at any time during the progress of the dispute have agreed upon after half-an-hour's friendly discussion. The present dispute, as it happens, has been less far-reaching than was at first expected. But at any time a similarly trumped-up dispute in another trade might involve us in a conflict between capital and labour so wide-spreading, as to be nothing short of a national calamity. It should be the object of men of good will both among employers and employed to establish in every trade some machinery, which will as far as possible ensure the blessings of industrial peace.



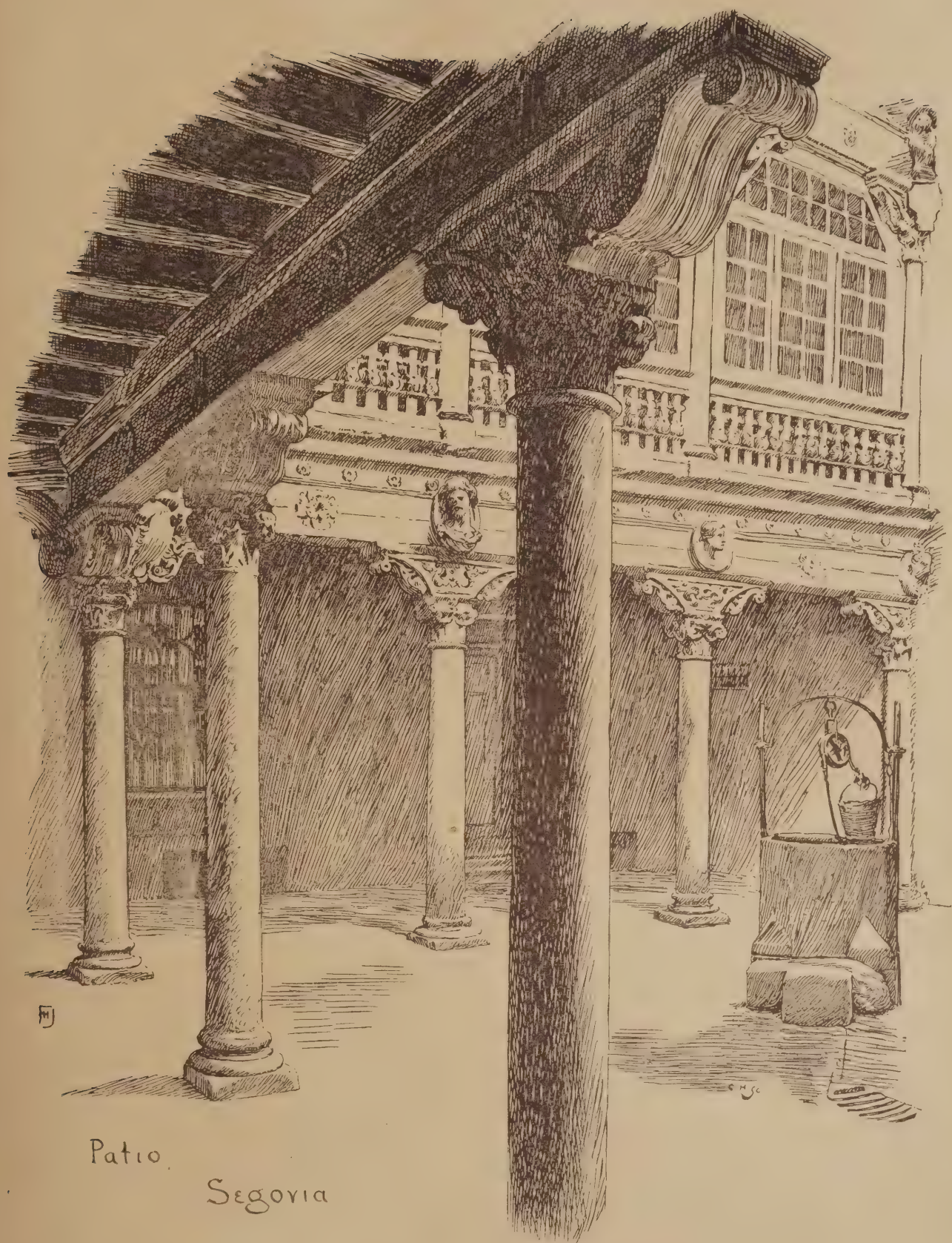






Cloister  
El Parral - Segovia





Patio

Segovia

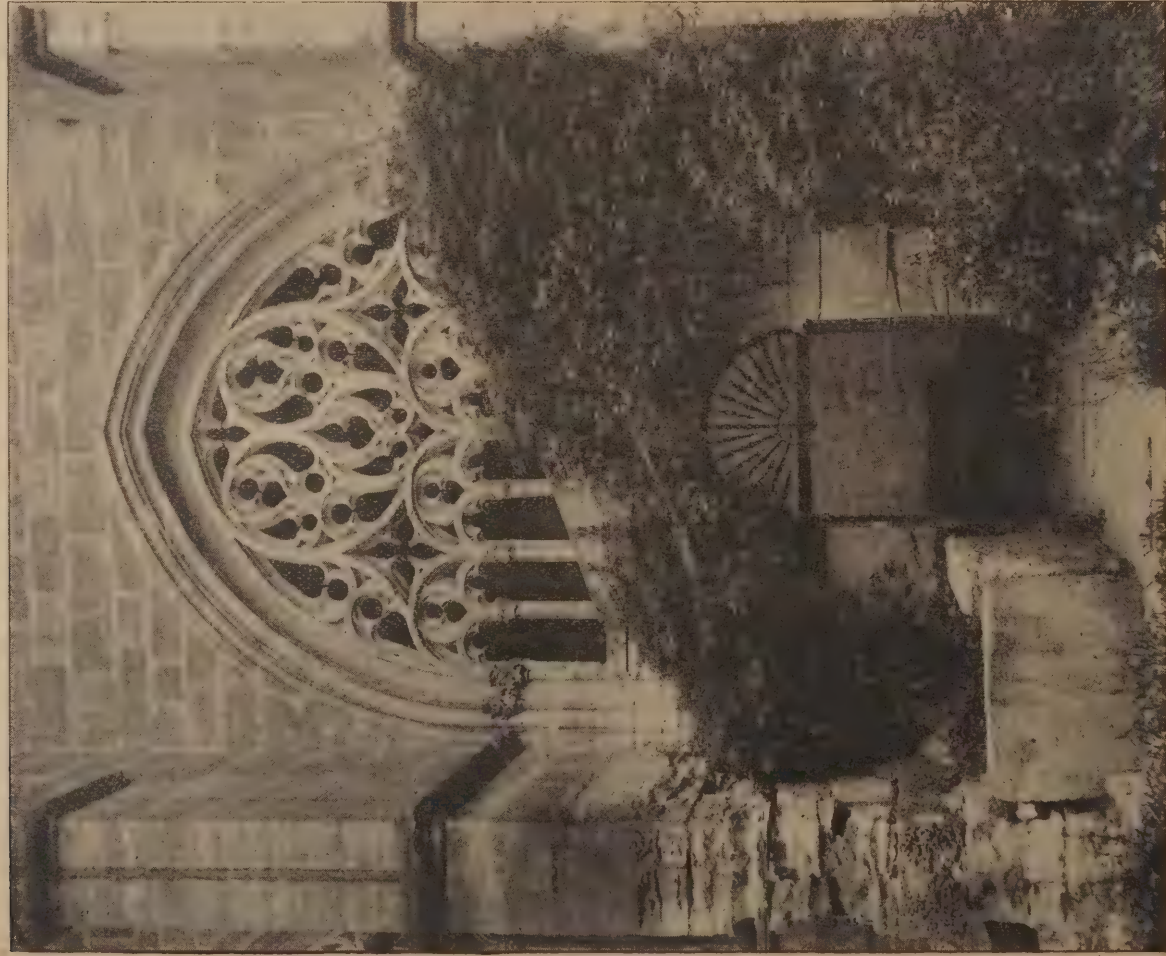


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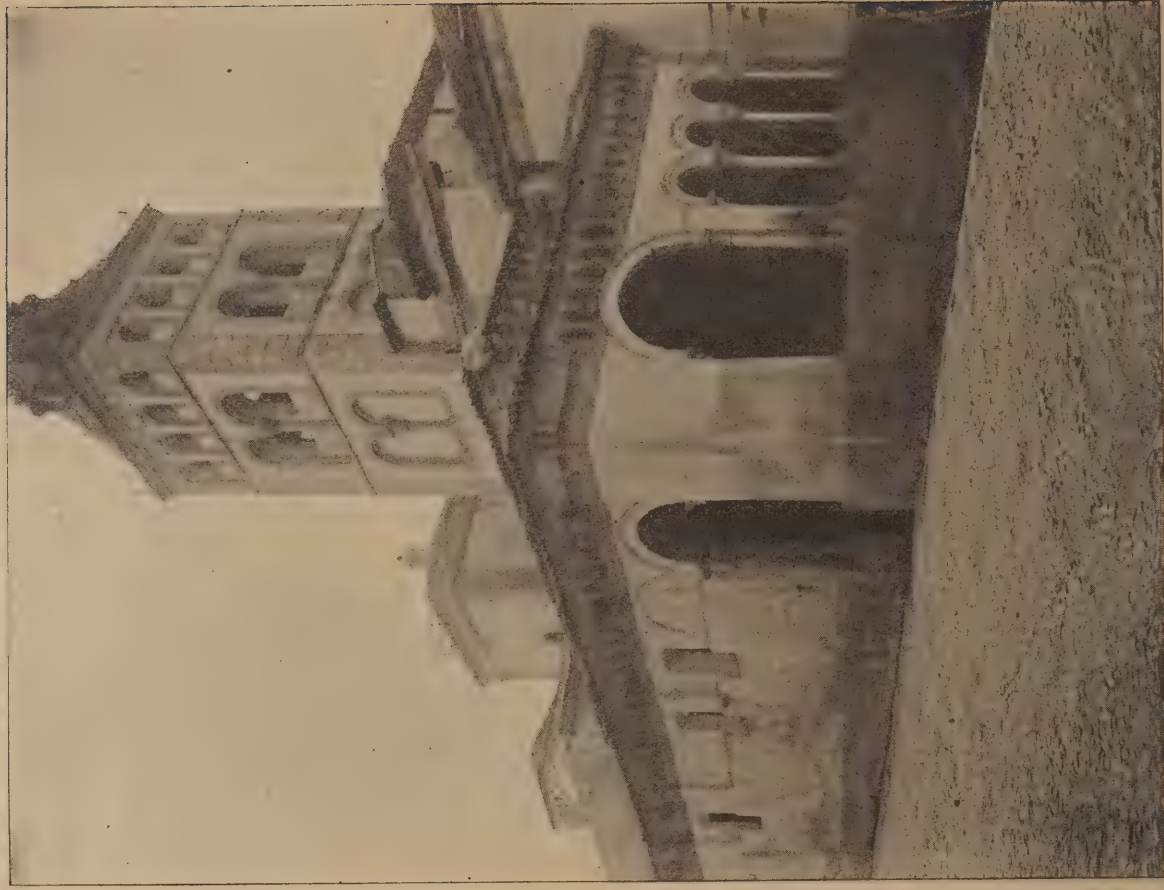






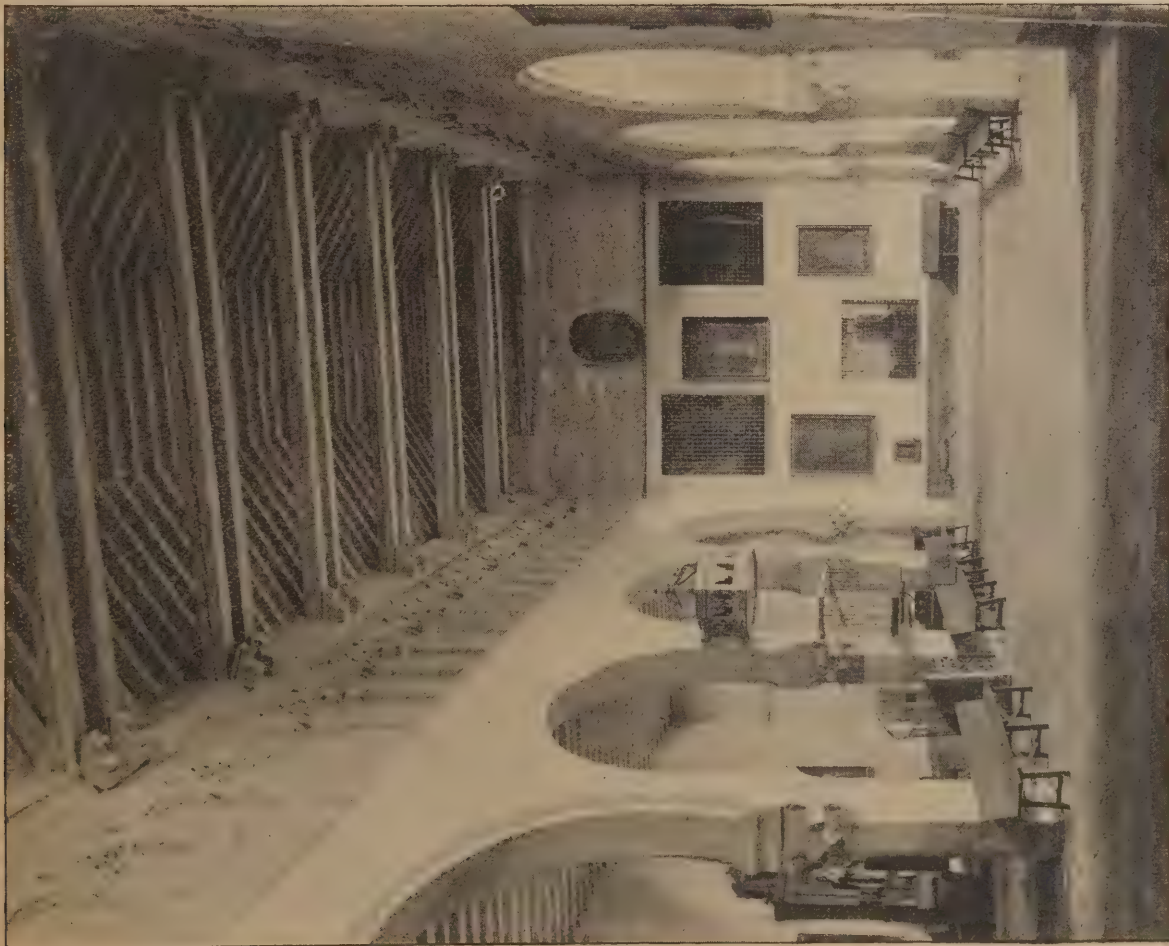


ENTRANCE TO CLOISTER, GARTH.



S. MARTIN, FROM N.W.





WEST END OF CORPUS CHRISTI.



CATHEDRAL: CLOISTER WALK.

SPAIN: ITS PICTURESQUE CITIES AND MONASTERIES: SEGOVIA. (*See p. 259.*)



1904  
of the  
University of Illinois



# SPAIN: Its Picturesque Cities and Monasteries.

## VIII.—SEGOVIA.

By F. HAMILTON JACKSON, R.B.A.

(Continued from page 232, No. CCXXIV.)

PASSING the Cathedral, one proceeds by the Canongia Nueva past a plaza planted with trees, between the trunks of which one sees again the hills, blue in the distance, to the Romanesque church of San Juan, which contains the tombs of some of the Conquistadores, and also that of Colmenares, the Segovian historian, and so to the Alcazar. This was burnt down in 1862, and is now restored, and looks quite nice and new. It was once a most formidable fortress, and is picturesquely situated at the extremity of a rocky promontory, round which the Eresma flows far below. It was designed and built at the end of the eleventh century by Alfonso the Learned, who wrote here several of his works. It was repaired in 1455 by Enrique IV., who resided and kept his treasures in it. At his death the governor, Andrés de Cabrera, the husband of Beatrice de Bobadilla, who was an early friend of Isabella, held the fortress and money for her, and thereby contributed to her accession to the throne.

From this alcazar she proceeded in state in 1474, when she was proclaimed Queen of Castile. Two years later the Segovian mob rose against this Cabrera, when the Queen rode out among them, and awed the mob by her majesty and presence of mind. It was ceded to the crown in 1764 by the hereditary alcaide, the Conde de Chinchon, whose ancestor had so hospitably entertained our Charles I. in 1623 on "trouts of extraordinary greatness." It was in this alcazar that Le Sage described Gil Blas as imprisoned. The keep has a number of those angle turrets which are so common in Castilian Castles, but the roofs are of slate, and very similar to the steep French tower roofs.

A road leads round beneath a sort of inner wall to the Puerta Castellana, the guard house of which has been made into a "Refugio." In front of the doorway and along the summit of the wall are benches upon which the old men sit in the sunshine and dream over their past lives. Passing through the gate below and descending the slope beneath the walls which tower above, one reaches the Alameda—a delightful shady road planted with trees—which runs between the river and the steep rock upon which the city is built. At the bottom of the descent is a bridge, crossing which one reaches by a wind-swept yet dusty road, the town boundaries, where the octroi officers examine all packages carried by those entering the town, and where a picturesque medley of beasts of burden and strange equipages with their drivers, may be seen, backed up by the walls and tower of an old church, while away in the distance the dusty road winds up over the barren hill till it disappears in a village the roof and towers of which bristle against the sky. But a short distance along this road on the right lies the ancient church of the Knights Templars, dedicated to the true cross. It consists of a central octagonal chapel to which one ascends by steps on either side, and beneath which one may pass under a pointed vault piercing the masonry from east to west and from north to south. The vault is surrounded by a broad aisle in which are three doorways corresponding, while to the east is a small choir containing an altar, on one side of which is a chapel and on the other the sacristy. The doorways are carved in the Romanesque manner, and above the altar is a much damaged painted reredos, but the building is fast going to ruin. It is built of the same yellowish stone as the cathedral and roofed with the same sort of highly-curved purplish tiles. The

Templars erected it in 1204. Returning towards the Alameda one sees the cliff from which criminals were cast down, called "La Peña Grajera," because crows nestled there to make sure of their hideous banquet. It was from this cliff that St. Maria del Salto—of the Jump—was cast down and reached the bottom unhurt. She was a newly converted Jewess, and an image of the Virgin played a great part in her miraculous leap.

The two bridges across the Eresma, one below and one above the Casa de Moneda, or Mint, were built by the same monk who repaired the aqueduct. His convent, El Parral, is just across the second. At this mint formerly the whole of the national coinage was struck, as the river afforded cheap power and the neighbouring Alcazar a safe treasury. It is now used as a flour mill. Crossing this upper bridge and turning a short way up the stream where the washerwomen are at work is a most charming view. A stretch of greensward shaded by tall poplars with patches of snowy linen spread to dry brilliant in the sunshine, while on the other side of the stream the wooded slope rises steeply towards

bricks deep, built so as to show pyramids of colour—yellow, black, and red.

Returning to the Alameda, and re-ascending to the town, by continuing up the slope in the same direction one arrives at St. Estéban, a church of the twelfth century, with a magnificent tower and those external cloister-like porticoes which are so characteristically Segovian. The view of this part of the town from the opposite slope is picturesque, and the church makes a very striking centre of interest, while from the same place the course of the walls may be well traced. Beyond St. Estéban, low on the slope of the hill, is the late Gothic church of Santa Cruz, a building with many pinnacles marking the places of the thrusts from the vaulting, the flying buttresses being included within the aisle walls. It has a very beautiful west doorway, carved all over with a profusion of delicate, lace-like ornament, the composition including figures and armorial bearings. In any other country but Spain this would look overcharged, and even in Spain itself it is scarcely possible to go farther, and the endeavour to produce greater richness led to the failures of the seventeenth and eighteenth



FACADE OF EL PARRAL, SEGOVIA.

the houses whose roofs may be just descried above the tree tops. Looking down the stream the view is equally interesting. In the foreground is a weir, over which the river flows with a delightful sound of rushing waters, while beyond the bridge may be seen the picturesque chimneys and low pitched roofs of the ancient mint embowered in trees, and further off the towers and roofs of the Alcazar crown the rocky promontory which stands boldly out from this point of view.

The convent of "El Parral," the vineyard, was once a real paradise, as the Spanish proverb declared. It was built in 1494 by Juan Gallego and still retains some of the costly decorations of the church, though in 1848 the chapels were used as pigstyes! It is now in decay, like so many other things in Spain, and there are but nine nuns to inhabit the long ranges of cells. There are three ruined cloisters, into which we went; how many more there once were I do not know. From the ground floor of one, one passes to the upper floor of the next, so steep is the slope towards the river. Through the windows of the ruined cells charming glimpses of the Alcazar and the town may be seen. I observed a curious and effective cornice made very simply. The crowning member consisted of three rows of curved tiles, set in a great deal of mortar, and arranged diagonally. Below were two rows of bricks set anglewise, and below them was a kind of frieze about four

centuries, which are so disgusting to a pure taste. The carving here is executed with a perfect mastery over the material and the difficulties of technique, the hand of the master appearing almost to play with the chisel, and leaves, twigs, and fruit, fill the hollows with the most charming balance of light and shade, freedom and stiffness.

The Dominican convent to which the church belongs was founded by Ferdinand and Isabella. In the north transept is a niche containing the remains of a companion of the Order, which are more ancient than the church, and said to date from 1218.

A little further on is another church in a deserted plaza, used for drying and bleaching clothes apparently, which also has a fine west doorway in an earlier style, though the external cloister has been built up. We may now work round to the right till we arrive at the upper part of the hill to which the aqueduct crosses, through the arches of which may be seen on the opposite slope two or three more of the characteristic Segovian churches, with trees beyond which grow in a little valley below the town watered by a rivulet. Descending to the point by the aqueduct, which we passed before, and, turning off to the left, after crossing another brook, one soon arrives at the church of St. Millan, a fine twelfth century building with a puzzling plan. One enters close to a gallery which contains an organ, and under which is a font inclosed within a locked



grille; from this point the nave stretches away towards an altar, but what seems to be the principal altar is in a chapel towards the right. When I visited the church a funeral was in progress, and the organist was in the gallery, to all appearance directing the service. He played for a time on the organ, then sang to his own accompaniment, then coming to the front of the gallery chanted for a time unaccompanied, and then went back to the organ. Meanwhile the coffin, surrounded by tall tapers and covered with a black pall, was far away down the nave, with mourners kneeling near it as silent as its occupant. The capitals of the nave piers are well and effectively carved, and outside some may also be seen half sunk in the wall; these belonged to the arcade, which has been built up for some reason. In this part of the town are to be found some fine massive doorways, with enormously deep vousoirs, wrought-iron door knockers and projecting grilles. By a gentle ascent the Paseo del Salon is reached, a pleasant promenade planted with acacias and orange trees, where white marble seats invite repose. It lies just under the Visi-Gothic walls, the half-round towers of which, mingled with modern buildings based upon and clustered round them form a picturesque background. Below is an inoffensive iron foundry, where cast-iron of good design is still produced, and a little beyond is a little chapel embowered in trees through which a road runs crossing the brook by a picturesque bridge. From the Paseo del Salon the Plaza de la Constitucion may be regained by way of the Old Jewry, or passing farther around the outside of the walls one may re-enter the town by a fine Moorish gateway, the Puerta de Sant' Andres, and by a steep ascent behind the cathedral arrive at the same place.

At Segovia one still sees usages centuries old. It strikes one as strange to see on the wall of the staircase of one's hotel a notice to the effect that after midnight application must be made to the watchman for the key of the house. The same arrangement is in force both at Burgos and Zaragoza, but it was only at Segovia that I saw the notice painted up. The watchman is called "El Sereno," from his cry, which one hears every now and then echoing down the streets, if wakeful: "Ave Maria purissima! las dos," or "las tres, e sereno," for the weather is so generally fine in Spain that "sereno" is his customary cry. He goes his rounds wrapped in his great cloak and carrying a lantern, while in the other hand he holds a long staff like a halberd without the blade. To see the group separate to their various beats in the evening is a suggestion for a painter. Merchandise is still carried about the town on donkey-back, the usual wheeled vehicles one sees being diligences, or the hotel omnibus, though strangely-shaped carts come in from the country behind long strings of five or six mules gaily bedizened with tufted and jingling harness, with tilts constructed of reeds and with strange props and supports swinging below the body of the cart. But in the narrow streets of the town the dustman goes his rounds with a small donkey bearing panniers, or rather saddlebags made of a sort of reed plaited closely, into which all kinds of rubbish are rammed, until one wonders how it can be possible to empty them! The baker's cart is a mule with real panniers of wicker-work. The flour merchant carries his stock upon donkey-back, heralding his approach with a long drawn unmusical cry of "Harina-a-a"! and most of the other traders in eatables carry them about themselves. One hears in the distance a strange cry which becomes comprehensible as the vendor approaches, and one sees perhaps the hot roll boy calling "Paneritos Calientes," or the milkman, whose cry is "Lechero-o-o," though milk is also advertised by a few notes from the goatherd's pipe as he leads his flock through the streets, stopping at the door to milk them as required. In the shops the trades are queerly mixed up, as in an English country town, the most curious mixture which I observed being wax candles and pastry and confectionery.

The hotel not being large enough to contain the whole of our party, several of us had to sleep out, which gave us an opportunity of

seeing what smaller Spanish inns were like. Our inn, the Fonda del Leone, was reached by a narrow passage leading from the market place to the little plaza in which it stood, full of small shops on each side in which vegetables, fruit, fish and other wares were displayed, forcibly recalling the smaller "calles" in Venice, by which name Spanish streets are also known. The ground floor looked like an ordinary Spanish drinking shop, on the first floor was the eating room, "Comedor," where several peasants were eating and drinking; still higher, through a door and up an involved staircase we went to our room. All was as clean as possible—matting on the floor, whitewashed walls and comfortable beds. Neither flying nor creeping insects disturbed our repose, and the only point about which there was any difficulty was the supply of water.

I must acknowledge, however, that I have heard from a friend a dreadful account of his sufferings at Mérida in a room which looked quite as clean as this of ours did, so it may not be safe to count our experience as typical. At Segovia we had an instance of the anxiety of the Spanish innkeeper to satisfy the requirements of his guests. One of our ladies did



S. ESTEBAN, SEGOVIA.

not quite like the fish brought round at dinner, and passed it. The waiter went to the gentleman who managed the business of the party, and entreated him to find out whether she was unwell, or whether she disliked fish, and, though he fenced the question as well as he could, a special course was brought consisting of *raw ham!* which the lady felt herself obliged to eat under the circumstances.

Spanish sunsets are sometimes quite tropical in their splendour and recall the dream-pictures of Egyptian afterglow. At Segovia we had the good fortune to see one which lit up the upper part of the Alameda and the town, the green valley by the river being left in darkness and coolness, from amid which the rushing of the water over the weir below sounded soft and refreshing. The glow flashed up the valley, reddening the summits of the hills, and turning the whitewashed houses scattered here and there to sparkling jewels. As it slowly faded from the town the colours of the houses changed from pale orange through red and rose-colour, to a curious, pale amethystine tint, which seemed to shine rather by inner light than by reflection, and had a most weird effect, and the clouds in the western sky cooled and became slaty against the pale gold of the heavens as the day sank to its death.

**The Opening of the New School of Art at Bury** took place last Wednesday. It has been built at a cost of about £2,000.

## SWEDISH COUNTRY HOUSES.

By R. KEITH JOHNSTON.

(Continued from page 246, No. CCXXV.)

AS a house built of wood always "settles down" to some extent after it is built, as the material becomes gradually drier and drier, the outside boarding is at first put on in a temporary fashion, and, after a year or so from the building of the house, is all taken off and replaced permanently—sometimes, indeed, the other covering is not put on at all until the house has had time to shrink, though the former is a better plan, as the boarding itself contracts to some extent when first put up.

For the same reason the papers put upon the walls in the first instance are of inferior quality, as the final papering cannot be done until the building has become thoroughly dry and will not alter any more. To prevent the outer-boarding from becoming saturated with wet, as well as from æsthetic motives, it is painted, and with this protection, which should be renewed every three years, the house may be regarded as weatherproof, and, beyond the replacing of an odd board now and again, requires no more external repairs than do our English homes.

In a country where heavy falls of snow occur every winter precautions must be taken to give it no opportunity of lying on any of the wood-work, so there must be a plentiful supply of "weather boards" to shoot off the moisture from any position which would otherwise afford it a lodging-place.

The higher a house is raised from the ground the longer is its life, of course up to a certain point and subject to any special circumstances of situation, but about four English feet is generally considered ample to raise it beyond the effects of any exudations from the soil. Instead of the thick paper with which the house is lined, the interior of the walls is now frequently covered with "lat and plaster" as in England.

The floors in a Swedish house at once attract the attention of an Englishman, firstly because, except in winter, they are not covered with a carpet, and secondly on account of their pleasant aspect as compared with "bare boards" in his own home. Great pains are taken to make these floors what they are. In the first place the joists, which are only logs roughly squared with the axe, are carefully levelled. For this purpose straight-edge and spirit-level are employed, and any irregularities are carefully adjusted. The joists are much heavier than we use here, but are placed at a greater distance apart (usually 2ft.), so that while strength is assured, a pleasant elasticity is given to the floor.

The boards forming the floor are carefully selected, free from knots and of good white colour, and are usually much narrower than we are accustomed to. The manner of laying them, too, differs greatly from ours. In the first place the boards are all "tongued and ploughed," that is, a narrow projection on one edge fits into a groove in the edge of the next board, so that when all are laid the whole floor is one united layer of wood. The nails are driven through the edges of the boards, in a slanting direction so that in place of the ugly nail-heads and hammer-bruises so much in evidence on our own floors there is no sign of nail or hammer mark on the whole surface!

I may add that although such a thing as a "flooring-cramp" is unknown in Sweden, the joints are so tight that in a well-laid floor it would be a difficult matter to insert a knife-blade between any two boards! This tightness of joints is effected by the use of wedges when laying the floor, though it is assisted by the good quality of the timber selected for the purpose, and maintained by the frequent washings which the floors receive, their whiteness being the source of great pride to the Swedish housewife.

The same reason which prevents the outer covering being fixed permanently to the walls at first, applies equally to the floors, which are in the first instance laid so that they can be easily raised for their permanent laying when the house is quite dry. All skirting-





LYCKORNA, SWEDEN: A FASHIONABLE SEA-BATHING RESORT.

boards, dados, mouldings, and other woodwork of a "finishing" nature are subject to the same rule.

Timber being one of the best known conductors of sound, steps must be taken in a modern house for deadening the reverberations aroused by footsteps overhead, and this is effected in the following manner:—Before the floors are laid, boards, which need not be of great thickness, are nailed across the undersides of the joists, thus forming the ceilings to the rooms beneath, and the long troughs thus formed are packed with sawdust, which, though of the same material as the timber, is found to be an effectual absorbent of sound. This may no doubt be explained in the same manner as the exclusion of frost from the cellars by the use of stones which do not run right through the walls. This sawdust, however, must not be employed underneath a stove, where the packing consists of broken brick rubbish, or of sand, so that there may be no danger of fire.

The cold in winter in Sweden being so much more intense than we, fortunately for us, ever experience, precautions have to be taken against it which would be considered quite superfluous here, though the adoption of many of them would add in no small measure to the comfort of some houses in this land. For instance, as I sit writing these words my feet are rapidly becoming colder and colder, which makes me wish the builder of my house had followed the Swedish plan of providing in each room a raised step or "threshold," against which the door presses when shut, so that draughts along the floor are prevented. The doors themselves are also made to fit much more closely into their frames, and the windows, though we should consider them absurdly thin and light, both as regards frames and glass, afford far better protection from the North-Easter than our own heavy plate-glass concerns. The "sash" window, I may add, is practically unknown in Sweden, where the kind that opens on hinges, like a door, are always used.

A single sheet of glass, however, is not found to afford sufficient protection against the rigours of the Arctic winter, so when the cold weather approaches, second frames are put in on the inside, there being a space of about two inches between the glasses of the outside and inside frames; the joints are all covered with strips of paper pasted down so that no draught can get through, and the cold is effectually kept out. "So is all fresh air," will be the natural thought of an Englishman, therefore I must explain that one window in each room is left so that the inner window can be removed and the outer one opened whenever desirable. The strips used for pasting are coloured to match the paint of the frames, and are, therefore, not unsightly.

When spring arrives the inner windows are taken down and stowed away in cellar or attic until next winter. This putting in and taking out of windows all over the house sounds a rather serious undertaking, but as the frames and glass are so much lighter than we use, it is not so arduous as one would think, still, it entails a good deal of work, and in the most up-to-date houses the permanent window-frames are double glazed, with a space of half or three quarters of an inch between the

glasses, the inner ones being mounted in hinged frames to admit of cleaning. The warmth obtained by means of the double windows is due to the "cushion" of stationary air between the glasses.

Having provided for the exclusion of cold air, we will now turn to the question of creation of warmth inside the house.

In this the Swedes are far ahead of us, and, though I have to the full a Britisher's appreciation of the cosy appearance of our open coal fires—though, to my thinking, a wood fire on an open hearth is still better—I often wish I had either of the Swedish systems of warming in my own house.

The older of these is as follows:—In each room is an earthenware stove faced with ornamental tiles, and so constructed inside that the heat rises from the hearth nearly to the ceiling, descends almost to the floor, down a second flue, rises again to the top of the stove, and sometimes makes a further descent and ascent before reaching the pipe which leads to the chimney. This stove is called a "Kakelugn," which, literally translated, means "Tile oven," a name very indicative of the character of the article.

The hearth is approached through an opening about 15in. or 16in. from the floor, and about 12in. wide by 15in. in height, this opening being closed by folding doors of sheet-iron, which have small apertures covered by swivelling shutters. The iron doors, when closed, are concealed by ornamental ones of polished brass. The hearth is composed of fire-proof material about 15in. thick, and is solid, there being no grate. In lighting the fire an armful of birch-wood, cut into lengths of about 14in., and split into pieces rather thicker than a man's wrist, is piled on the hearth, and great are the arguments for laying them in this or that particular manner, whether all one way, or crossed, or all leaning upright against the wall of the flue, so that it does not seem to matter much how they are disposed. A few splinters from one of the pieces of wood are then ignited, and the whole pile is quickly in flames.

The draught is regulated to a nicety by means of a damper at the top of the stove, which opens or closes the pipe leading to the chimney, and the iron doors, which latter, however, are generally left wide open until the whole of the fuel is reduced to a glowing mass without flame. The doors are then closed, as well as the damper at the top of the stove (this is worked, by means of a cord, from the floor), and in a very few minutes the entire stove, from floor to ceiling, is quite hot—sometimes too hot to touch with the hand for more than a second or two. The room quickly becomes comfortably warm, even in the corner farthest away from the stove, and one can sit in comfort in any part of it. The warmth engendered by the quantity of wood named is sufficient to maintain a comfortable temperature for six or seven hours, the fire being re-lit in the afternoon, earlier or later, according to size of room and external temperature.

The other apparatus used for warming, and which is now very largely employed in Sweden, requires one fire only to heat the entire house!

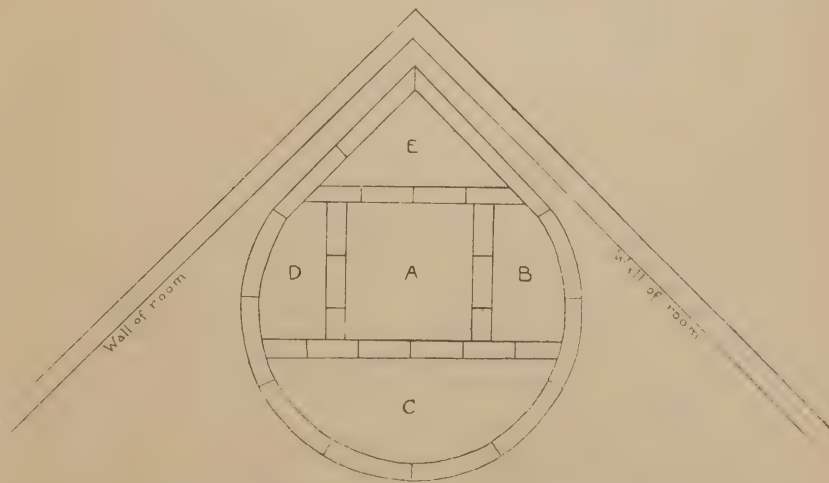
In the cellar is a stove, or furnace, of iron, in connection with which are iron pipes, or flues, leading to a point near the floor in each room, or passage, where warmth is to be supplied. The mouths of these flues are fitted, in the rooms, with dampers, by means of which the supply of heated air may be controlled, and there are other dampers near the ceiling, connected with flues leading into the chimney, by means of which the vitiated air is allowed to escape.

The apparatus (which burns coke, not wood) is so constructed that the heated air is fresh air warmed on its way from the outside of the house to the various rooms, and the fumes arising from the combustion of the coke are led away up the chimney and do not come into the hot air pipes at all. The air being treated in this way—much the same, indeed, as our circulating hot water supply—is not unduly deprived of its moisture, so that it is in no way unpleasant or unhealthy, but rather the reverse; in fact, this apparatus is now strongly recommended by the medical profession for delicate people of all sorts, more especially those suffering from pulmonary affections.

This apparatus, as will be readily understood, must be situated at a lower level than the rooms it is expected to heat, as the hot air being lighter than that unwarmed, rises of its own accord.

In other respects a Swedish country house is not very unlike one in this country, though the appointments, such as curtain-poles, blind-fittings, door-hinges, lock-furniture, &c., are generally of a more simple character, and not so ambitious as ours.

The foregoing description must not be taken to apply to a house in Gothenberg or Stockholm or any of the larger towns, where, as already stated, stone and brick is the order of the day, and the floors will, in most cases, be found as well furnished with carpets as any in



PLAN OF KAKELUGN STOVE BUILT IN CORNER OF ROOM.

A Hearth, and first (ascending) flue. B C D E Other flues through which the hot air circulates. The connection with the chimney is at the top of E.





CORONA, A MODERN HOUSE AT LYCKORNA, SWEDEN. EUGEN THORBURN, ARCHITECT, GOTHENBURG.



CORONA, LYCKORNA: GROUND PLAN.

Veranda=Verandah. Förmak=Drawing-room.  
Matsal=Dining-room. Cabinett=Boudoir or Study.  
Herrnsrum=The Master's room. Servering=Pantry.  
Kök=Kitchen. Norr=North.

London, the dining-rooms, however, being very frequently laid in parquet, with, perhaps, a square carpet in the centre. But the purpose of this paper has been to show how our neighbours in the land of the Vikings build their houses, and how comfortable the said houses are to live in, different though they may be from our own.

**A New Church for Walton** is to be erected at a cost of £6,500, and the memorial stone was laid recently. Mr. J. Francis Doyle is the architect.

**A New Male Infirmary** is to be erected in connection with the Ecclesall Workhouse at a cost of £25,000, and the foundation stone was laid last Wednesday.

**The Foundation Stone of New Schools** at Cann Hall was laid last week. The building, which is 157ft. long and 63ft. wide, will be erected in Cobbold Road, and is to accommodate 550 children.

**A New Wesleyan Church at West Stanley** was opened last Wednesday. It has been built from designs by Messrs. Green and Brocklebank, architects, of Liverpool, and has cost £4,800. It is Gothic in style.

**A Memorial to the Kent Martyrs**, who were burnt at the stake for allegiance to the Protestant cause during the reign of Queen Mary, will shortly be unveiled by Lord George Hamilton, M.P., in the nave of Canterbury Cathedral. The memorial takes the form of a granite obelisk, surmounted by a Canterbury cross, with an inscription recording their fidelity.

## SOME ESSEX CHURCHES.\*

By J. GARD PYE.

WHEN asked to read a paper upon Essex Churches, I felt the task of condensing a subject so full of interest within the limit of a short paper would be a difficult one, so thought it better to confine my remarks to churches in the neighbourhood of Colchester, much as I should like to have enlarged upon the interesting Chapel of Great Peter on the wall at Bradwell, and St. Andrew's at Ashingdon, the latter being the oldest church now existing in Essex, and a good type of Anglo-Saxon work.

Colchester is well-known amongst archaeologists as the ancient Camulodunum, the earliest Roman settlement of importance. History tells us that this ancient town played an important part in the days of Boadicea. The town walls, evidently of Roman construction, are considered to be the best specimen that we have left in England, for while the masonry is not so perfect as in York, its full extent round the town is more intact. The Balcerne Gate is a good specimen of Roman work.

It is not my intention to dwell upon the fine old Norman Castle of which Colchester is so justly proud, as my paper is on ecclesiastical buildings only, but I should strongly recommend any member of the Society when in the neighbourhood to visit this old building, containing, as it does, some interesting herringbone work, and old Norman fireplaces in a good state of preservation. A good number of the churches in Essex, especially round Colchester, are of Norman origin, being restored or rebuilt later on in the Decorated and Perpendicular periods—more in the latter than the former.

St. Botolph's Priory, which was reduced to its present ruinous state during the siege of Colchester in 1648, consisted of nave, central tower, transept, and choir. This is a remarkable instance of the use made of Roman materials for building, and, singularly enough, these materials were used for the ornamental part, as can be seen in the west front. The bricks used were of the fourth century, and some even earlier. When the Royal Archaeological Society visited this building in 1877, several members pointed out some bricks that were as early as the first century, being only lin. in thickness. The west doorway is a good specimen of a Norman arch, with its zigzag or chevron, and billet mouldings, with a rude hood mould formed of tiles, and the interlacing arches from which it is said the Gothic arch of

later years took its form; but I think this is theory only.

The gateway is all that is left of the once large and handsome abbey, now known as St. John's Abbey gate. It dates from the time of Henry II., and has been very truthfully restored some years back by Major-General Montagu, of the Royal Engineers. Fortunately for him, one of the pinnacles was discovered buried in a wall, and from this clue he was enabled to add the others.

In the priest's doorway, in the ruins of St. Nicholas' Church, at Colchester, you again see the introduction of Roman bricks reused from some old building that had been pulled down. These ruins have given place to a new church that was designed by the late Sir Gilbert Scott.

A very interesting specimen of a Saxon doorway is in the tower of Holy Trinity Church, Colchester. Here we have another example of the introduction of Roman brick, and the primitive idea of ornament in the rude formation of the shaft, with cap and base, with the hood mould, and, as a sign of the religious revival, the formation of the Cross in the key of the arch. Ardleigh Church is a specimen of an ordinary Essex church, Perpendicular in style, with its tower, nave, aisles, and chancel. The porch contains some fine work in flint and ashlar work.

I should like to add here that the churches of East Anglia are different from those in the West of England, though there is much Perpendicular in each, the style being largely ruled by the materials at the disposal of the builders. Here there was little stone to be obtained, and they had to use flint, with facings of fine stone, which is the characteristic treatment of the district.

Great Bromley Church is another good specimen of an Essex Perpendicular church. The nave roof is very elaborate, having double hammer-beams, richly carved and picked out in vermilion. This church stands in the beautiful vale of Dedham, was the subject of one of Constable's paintings, and was built by a father and his son whose marks still remain in the tower. In this church, on the south side of the chancel, is an oven with flue complete, for the baking of sacred wafers, the only instance, I believe, in England of an oven in a church. The stairs to the roof loft still remain. The north porch has a narthex or room over, used either for storing parish documents, or as a library to store those books given to the parish, as in those days books were scarce, and such a gift was in consequence valuable. When these rooms had a fireplace in them and a window opening into the church, they were usually used as watching rooms and chambers.

Lawford Church has an interesting group of chancel windows of an earlier period than are mostly to be found in this part of Essex. Internally are some elaborate stone carvings.

Another fine Perpendicular church is at East



VILLA AT JÖNKÖPING. GROUND PLAN. EUGEN THORBURN, ARCHITECT, GOTHENBURG.

Kuist=Porch. Veranda=Verandah.  
Huvudrum=Sitting-room. Matsal=Dining-room.  
Förmak=Drawing-room. Serveringsrum=Pantry.  
Kök=Kitchen. Entré=Lobby.  
Kapprum=Cloakroom. Toalette=Lavatory.  
Skaffi (Skafferit)=Larder.

\* A Paper read before the Society of Architects, on Thursday, May 25th, 1899.





A SUMMER VILLA AT LYCKORNA.

Bergholt; it has an unfinished tower. The bells hang in a cage in the churchyard. There are several brasses and tombs in this church, and a window to the memory of the painter Constable, who was born in this village, and here painted many of his pictures.

The north porch of Boxford Church is one of the oldest wooden porches in England un-restored. The south porch is stone, which must have been brought from some distance, as there are no quarries anywhere near. The ceiling is very handsomely groined. There is a good specimen of a late Perpendicular door richly carved and moulded, and also a very handsome screen of stone in this church. This and the last two churches are, strictly speaking, not in Essex, but in Suffolk, but as they are just on the border of the two counties, and interesting, I have included them.

Great Bentley has a good specimen of a Norman door, with its zigzag and rose mouldings. There are several other Norman features in this church, including five windows. The staircase to the rood still exists. Fingringhoe has a Perpendicular porch, built in rubble work, finished with flint and stone in the parapet. In the spandrels are the Archangel Michael and the Dragon, evidently symbolical of heaven and hell, as the church is dedicated to St. Andrew and not to St. Michael, as these figures would lead one to suppose. This church was considerably damaged by the earthquake of 1884, and has since been restored. There are some interesting frescoes, including one of St. Christopher carrying Christ over the river of the waters of life, and an old oak chest, richly carved.

Brightlingsea Church contains good specimens of Perpendicular work, although it is clear from the buttress level with the chancel, which is of earlier date than the rest, that it is a fourteenth century church changed at the end of the fifteenth as regards the aisles with battlements and the tower added. The late Professor Freeman describes this tower as being one of the finest of its kind in existence.

The church at Copford was undoubtedly of Norman origin, having a vaulted roof, but the destroying hand of time obliged the substitution of a wooden roof, which is acknowledged by archaeologists to be a beautiful piece of work, and was much admired by the late Sir Gilbert Scott. The walls, which are very thick, were mostly built of Roman brick. The noted features of this church are its frescoes. In the apse Christ is represented seated on a throne with a rainbow behind, and clouds under his feet, His right hand in the attitude of benediction, and his left resting on a book, the wounds being visible in the hands and feet; below are angels, and in the background the towers of New Jerusalem. On each side and four apostles under canopies. Excepting the chapel in Canterbury cathedral, the late Sir Gilbert Scott said that in his whole experience he had never seen anything to compare

with it. The south porch to the same church was considered by Sir Gilbert Scott to be the most beautiful specimen of a Decorated wooden porch in the country. The door leading from the porch to the church was covered with the skin of a man who had been caught in the act of sacrilege.

Close by are the famous towers of Layer Marney, with its terra-cotta work, but as it is a domestic building it is out of my province in this paper to describe it fully; it is well worthy of a visit, however.

Marks Tey is a thirteenth century church, curious in its having the upper portion of the tower of wood. Great Tey Church is very interesting, with its Norman tower heightened at a later period. The plan of this church was cruciform, the nave and chancel being rebuilt in the Early English and Decorated periods. The old wooden porch to Aldham Church is of the Decorated style, and is mentioned and illustrated by the late J. H. Parker in his "Glossary of Gothic Architecture."

Bures Church, like that of Little Oakley, has the buttress of the chancel pierced for the priest-door, another good specimen of East Anglia Perpendicular work. The south porch is a good specimen of a treatment in brick, but of course is of later date than the church itself.

Mount Bures Church is another specimen of a Norman tower, but was heightened a few centuries later. Coggeshall has a fine Perpendicular church of large proportions, the interior

being richly carved. It is the largest church in Essex.

Little Maplestead was originally attached to the Rectory of the Knights of St. John of Jerusalem, founded here in the time of Henry I. Though restored in 1854, it is still of special interest as being one of the four remaining round churches in England, built on the model of the Holy Sepulchre; the others being the Temple Church, London; St. Sepulchre, Northampton; and St. Sepulchre, Cambridge. The chancel is an apse; the nave circular, with peristyle of six clustered columns. The western entrance has quatrefoil border. This church is said to have had the privilege of sanctuary.

## NURSERY RHYMES FOR BUILDERS.

Prepared by the London County Council under the provisions of the 164th Section of the London Building Act, 1894.

One-Two..	Come buckle to.	...	(Sect. 7)
Three-Four	Concrete ground-floor.	{	(By-law 1891 [2])
Five-Six..	Pick out your bricks..	{	(By-law 1891 [3])
Seven-	Lay them straight. ...	{	(1st Schd. prelm.)
Eight...			
Nine-Ten.	Give notice like men..	{	(Sect. 145)
Eleven-	Foundations delve. ...	{	(By-law 1891 [2])
Twelve.			
Thirteen-	No earth import in...	{	(By-law 1891 [3])
Fourteen			
Fifteen-	Thames sand sift	{	(By-law 1891 [3])
Sixteen.	clean. ...	{	(By-law 1891 [3])
Seventeen-	Walls put slate in. ...	{	(By-law 1891 [3])
Eighteen			
Nineteen-	Here are rules in plenty; Pray good Jerry don't be a sinner. ...	{	(Sect. 150)
Twenty.			

### JERRY WAS A BUILDER-MAN.

(Sec. 170).

Jerry was a Builder-man,  
Of swindlers the chief,  
Jerry built a bad house,  
But he came to grief;  
The London County Council,  
When he was not at home,  
Pulled down Jerry's house,  
And left him in a foam.

### BALBUS THE BUILDER

(vide Latin Grammar).

(Secs. 103, 107).

Balbus, the Builder, built a wall,  
Which, when completed, threatened to fall;  
District Surveyor condemned it, when  
Balbus had to build it again.



A VILLA AT LYCKORNA.



## NOTES ON ART.\*

BY WILLIAM MEEK PAGE.

ART, we may premise, has had a life equal to that of mankind and consequently has a history interesting and educative in proportion to its length. Some remains found at La Madeleine belong to an age more than 50,000 years ago and show us that the sense of beauty existed in men who lived a painful and primitive life, making their homes in caves, but who had the impulse to adorn and to imitate natural forms. It is in Egypt, however, that we find the earliest works of art—dating probably from fifty centuries before the Birth of Christ. From that we can trace Art into Greece, where, from small beginnings, it developed to the highest perfection to which human labour has ever attained. Then in Italy, Grecian art in its decline revived into new forms and fresh life and vigour, through the great movement of the Renaissance, and thence down without a break to our own day.

## The Decay of Enthusiasm.

Through all this time Art flourished as a real live thing, and the people took an intelligent, active interest in matters artistic and made art a necessity almost of their lives. But now it cannot be said that enthusiasm for Art exists at all largely, and where it does is it not more in the form of amusement? Up to about the beginning of the present century the artists were allowed to pursue their mission as their art dictated. At this time, however, the public assumed to a great extent the rôle of teacher, and artists found that in order to live they had to pander to the uneducated public, and supply them with popular art. This was true to such an extent that James Smethan, an artist who lived some fifty years ago, was forced to exclaim that, in the pursuit of "the poetic," unless a painter could live independently of his art, he ran the risk of perishing on the mountains. This was the beginning of a dark time. Till now everything fashioned by man, from earliest times, was made, *in addition* to its primary purpose, with a desire to impart to it in form, ornament, or colour, something of beauty. Men now began to imagine that beauty was unnecessary to their happiness, and the march of civilisation had now quickened to a rush; buildings were thrown up regardless of the laws of beauty; engineering works disfigured our towns with unnecessary ugliness. Men lost sight of art in their eagerness to pursue and worship Mercury, and everywhere we have erections testifying, not to the nobility and philanthropy of the proprietors, but to their love of gain and utter want of good taste. And this has not ceased to-day by any means! Search your town from end to end, and you will not find more than a few modern buildings with any pretensions to beauty! Your suburbs are spoiled and rendered inconceivably dismal, and in the large cities huge, crowded tenements and frightful structures in iron testify to what I say.

## Popular Indifference.

Painters and architects, with few exceptions, alike suffered through being fettered and working for an indifferent, uncaring public, who did not, indeed, cease to give those artists commissions, but who insisted that the result should merely satisfy their passing fancy, and fulfil their utilitarian requirements. With this they are contented, and what is worse, they are proud of what they consider their achievement. The result is that to-day, at the close of the nineteenth century, the people for a great part are entirely indifferent to matters pertaining to art. "Why," you exclaim, "never was there so much heard about Art, never was it so popular, so universal, as it is to-day?" I will not deny that there is much talk about Art, but there is little Art spoken. I will not deny that Art, so called, is

popular, universal, but what is it in reality? "Oh," you say, "our sons and daughters paint, carve, and fret (a deal of it), and so adorn the home. Look at our children's work at school." But let us examine into it and see what it is all worth, what they attain. The boys carve before they can design, paint before they can draw, and fill our homes with useless "knick-knacks," and cover our walls with painted plaques and panels; here we have no art, but only a little technical skill. The girls are not taught the elementary principles of Art, and what is good and beautiful and what is not, at school, but are taught to pass the examination and earn the grant. I have known students to spend an entire session making elaborate drawings of a single cast or piece of building construction, while they might have been occupying their time to better purpose, studying and sketching a dozen others, and so acquiring a knowledge of their work and art. Here, I say, we have only a degree of technical skill. Designs are bought for so much per dozen and traced on, or copied with more or less accuracy from some perhaps not over correct print or plate. And then, moreover, why should art be confined in gilt picture frames? What does it avail if the knowledge of the beautiful and the good which is supposed to be acquired in the studio be confined there? And, as an evidence that Art is by most regarded only as an amusement, we have almost no art outside of the studio and its other acknowledged homes. Art should not be confined to the picture frame, to the gallery and exhibition, but should pervade and permeate everything and every place. It is not sufficient to have it in chalk and pigment, merely to beautify and adorn, we want it in material, we want to see it, feel it, understand and benefit by it and be artistic and cultured in all we do. Our towns have lost much of their charm, our streets are dismal, and our houses and homes are, with but few exceptions, quite the reverse of beautiful.

## Some Definitions.

And here, I think we might well pause and ask, "What is Art and what is an artist?" Shortly, Art is the interpretation of Nature and an artist is the interpreter. Or art may be described as the work of man expressing his ideas in painting, sculpture, or architecture. In the two former the artist accomplishes this by directly imitating Nature, but the latter, again, has to create its own forms and at the same time follow closely the laws and methods of Nature, especially where structure is concerned, only in the decoration of surfaces imitating natural forms of plant and animal life. An architect myself, I may be tempted to dwell at length on that department of art with which I am more particularly associated and omit to render—justice, I was about to say—due attention to the art of painting, which after all is a mighty factor in the world of Art even to-day, so I will make amends by dealing with it first. Those painters, I say, have missions, and right nobly do many of them pursue them. Wedded to their art as they are, they are great teachers. Theirs is often a hard life and they have trying work, for they have to conceive, feel, and suffer, or excitedly enjoy every new subject, and have to search the world over for ever new materials to enable them to realise their ideas.

## The Painter and Sculptor.

The artists are interpreters of Nature, they reveal something which we did not previously perceive, and our interest is awakened, and the indifference which was ours of old is usurped by a new delight, and we are led to look "from Nature up to Nature's God." What I have said regarding our painters applies equally well to the sculptors. They make the sculptured marble almost speak, who adorn our palaces with reproductions of the most beautiful thing in the world—the human form, giving us in the round representations of heroes of war, science, and art, and, which is better still by far, creations of their own imaginative genius, setting them on lofty pedestals whereon we may behold them, learn, and be elevated. And now we shall pass on to the consideration of that Art which has to do with the building, finishing, and decora-

tion of our houses and other edifices. I will the more easily show you what is good by first pointing out much that is bad, and, putting the two side by side, try to discriminate between them. We have learnt that Art is an interpretation of Nature. We may now attempt to define it at more length. The word "Art," according to its derivation, means that which is fit. Art is fitness, truth, directness of purpose, simplicity, sincerity, refinement, and, in order that a building may rank as a work of art, several things are very essential.

## The Essentials of a Building.

(1) Fitness for the purpose which it is intended to fulfil; (2) Good construction and workmanship in its erection; and (3) appropriate adornment, based upon its use and construction. That is to say, the building shall primarily fulfil all necessary conditions which are required by the occupant, whether as a home, factory, or public building. The construction shall be sound and genuine, and the workmanship of the highest order, employing the various materials in the most consistent manner. Added to this the building requires to be so grouped and disposed that its various parts shall each have sound proportional dignity, and, lastly, the decoration shall be such as is dictated by its character and construction. Do not let there be a scheme of elaboration on the exterior which is not carried out inside; or on one front and wanting on the others. Do not allow one part to contradict another, let there be no inconsistencies, but let the one idea, the one feeling, pervade the whole, expressing outwardly and inwardly the same thing. To the average man any talk about an artistic house and beautiful furnishings is quite unintelligible. It is sufficient for him if the drains are certified to be in good order, if the name of the house is in large gilt letters over the door, and there are the required number of rooms, provided with windows much too large, and high ceilings. Often when an architect is employed he is politely bowed out just when the bare house is completed, and then the worthy client proceeds to disfigure it with inappropriate furniture and decorations, carrying to an unworthy conclusion the architect's scheme. Hence we account for so many ignoble buildings, much of the sordidness of our cities. Hence those unsightly arteries stretching away into the green country with high, expressionless buildings, causing cold, draughty streets, and making a walk through them one long, monotonous progress.

(To be continued.)

**The Berlin Statue of Bismarck** is being erected in front of the Reichstag. The statue will be nearly 20ft. high.

**St. Michaels' Church, Shap,** was reopened last week, after alterations and repairs. The whole of the church, with the exception of the tower, the Norman arches, and a portion of the north and south walls, has been pulled down and entirely rebuilt under the supervision of Mr. Oliver, architect, of Carlisle, Mr. Grisenthwaite, of Penrith, being the contractor. The cost of the work has been about £2,900.

**A Great Hall for New York.**—A new Hall of Records is to be built at New York. Two million dollars are to be spent on the external building proper, and two and a half million dollars additional to complete the interior. It is estimated that the sculpture work will cost 85,000 dollars, and the mosaic work 10,000 dollars. No wood whatever will be used, the interior being entirely of coloured marble, and the window frames of copper.

**The Restoration of Rackenford Parish Church,** North Devon, has been carried out under the guidance of Mr. A. Bloomfield Jackson. It has just been reopened. A new roof has been given to the church, the old carved oak ceiling cleansed of whitewash, the sanctuary enlarged, a chancel formed, the whole church repaved and wood blocked, the seating modernised, and some oak choir seats, pulpit, and reading desk have been placed in the chancel.

\* Abstract of a paper read before the Perth Architectural Society on March 14th, 1899.



## ARCHITECTURAL ASSOCIATION.

## THE ANNUAL DINNER.

THE Annual Dinner of the Architectural Association took place last Wednesday evening at the Holborn Restaurant. The chair was taken by the president of the Association, Mr. G. H. Fellowes Prynne and about ninety members and guests were present. After the toast of "The Queen" had been duly honoured, the president proposed "The Church and State." After some general remarks on the relation of Architecture to the Church, Mr. Fellowes Prynne proceeded to refer to the

## St. Paul's Decorations.

After paying a tribute to the high aims of those who authorised the work, and of the artist who carried it out, the President said that as architects they were bound to take up a critical attitude. They looked upon St. Paul's Cathedral as a national monument designed and built by one of the ablest architects England ever produced. Therefore they had a right, as architects, to speak on such a subject. Sir William Richmond, in his famous letter to the "Times," put himself on a very high pedestal and ignored the views of architects. It was the wish of them all that nothing should be done that was in the slightest degree discourteous to Sir William Richmond; at the same time they could not look on at this noble monument being utterly ruined at the hands of one able man. The President rejected in emphatic terms the idea expressed by Sir W. Richmond that St. Paul's Cathedral is a magnificent skeleton to which colour must be applied to give life to it. If an artist wished to experiment, a great national monument such as St. Paul's was not the place for his experiments. The cheers of the audience clearly showed that they were in general agreement with this view of the matter. Proceeding to speak of the Houses of Parliament, Mr. Fellowes Prynne commented upon the general indifference of our legislators to architectural matters, and pointed out the contrast between the money spent on architecture in our wealthy England and that spent by a little nation like Belgium. The Law Courts and the Colonial Offices were mentioned as examples of the way estimates were cut down, so that the architects concerned had not a fair chance to produce worthy buildings.

## Archidiaconal Humour.

The Archdeacon of London, Dr. Sinclair, as a member of the Decoration Committee, had a somewhat delicate task to perform in replying to the toast. But he accomplished it with great skill and excellent taste; there was a dry humour in many of the Archdeacon's remarks, which was not the less appreciated by the architects present because it was directed against their own class. It was part of his duty, he said, to inspect the fabric of churches, and he found that many modern churches were rather thinly built, but the reason of that probably was that there was not sufficient money to carry them out in a substantial manner. He also found them often badly ventilated; when there was a large congregation the air became very foul, and the congregation often very sleepy. He would like to pass a law that all churches should have a row of goodly ventilators breaking the sky-line of the roof. He had lately inspected a church in East London, built by an eminent architect, of which the doors were so narrow and so beautiful that it was impossible to get a coffin through them. Not all modern churches, however, were thus defective, and the Archdeacon spoke in very appreciative terms of the work done at St. Saviour's, Southwark, St. Bartholomew's, Smithfield, and St. Philip's, Stepney. Modern architects were very conservative, but he could remember the ruthless way in which, under the purist impulse of the Gothic revival, many beautiful old things were swept out of our churches because they happened to be Renaissance or Elizabethan or Classical, and not consistent

with the original Gothic style of the church. "So when you are giving us the benefit of your advice, you must remember that the advice of your predecessors has not always been quite the wisest possible." In this bantering way the Archdeacon led up to

## An Important Pronouncement

on the subject of the hour, the St. Paul's decorations. He, in common with many members of the Committee (he was careful not to say all the members) welcomed the frankest and freest criticism. They did not set up to be eminently qualified to judge of this question. The Committee was at present too weak to bear the strain of so great a work, and they ought to have the assistance of some architects who were versed in the Palladian system, and able to separate Palladian ideas from Gothic ideas, and who were in full sympathy with Wren. They ought to get the most consummate advice possible, and he thought the committee should include the President of the Royal Academy, and he would even add the President of the Beaux Arts in France and someone of corresponding position from Germany. Passing on to speak of the history of the question the Archdeacon showed that he does not approve of all that has lately been done at St. Paul's. He expressed a hope that future generations would remove parts of the reredos and all the stained glass windows. Then in a few weighty words the Archdeacon practically endorsed the main criticism that has been passed on Sir W. Richmond's work. If, he said, he might venture to offer advice to any decorator, it would be: let him suit his ideas to the building, not the building to his ideas. Even if the great builder made mistakes in some points, the building should be left as he left it. It was true, as the papers had stated, that the committee had determined to take off the stencilled work and to reconsider the putting of panels upon the curtained walls. They had received a letter from Sir William Richmond, expressing his agreement with the resolution of the committee, and when the work was resumed Dr. Sinclair believed the result of this discussion would be satisfactory to the artistic minds, both of the artists and the architects of this country.

## Parliament and Architecture.

Sir Henry Howorth, M.P., who responded for the Houses of Parliament, admitted that neither in the Lords nor the Commons had the arts received that attention one might expect from a nation with such a long history. But when nations were making history they were very seldom artistic. Sir Henry then entered upon a rather curious defence of this Parliamentary indifference, the gist of which seemed to be that it was better for architects that they should be left alone by Parliament than that they should be hampered and restricted by the edicts of a public official. In spite of all difficulties we had had a succession of magnificent buildings, but there had been very few people indeed who had known how to decorate those buildings. Could anything be viler, he asked, than nine-tenths of the stained glass in this country?

## The R.A. and the R.I.B.A. defended.

The toast of "The Royal Academy and the Royal Institute of British Architects" was proposed by Mr. H. H. Statham. It was inevitable that the proposer of such a toast should take up an "official" attitude, but there were some interesting points in the speech. Mr. Statham made an ingenious defence of the Royal Academy. He pointed out that it was a modern characteristic to open new galleries as a kind of protest against the conservatism and prosaic character of the old ones. But he declared that there had never been a year in which you could not have taken out of the Salon and the Academy enough good pictures to crush the other exhibitions. He admitted that a lot of mediocre work was shown at the Academy, but hinted that the admission of such works might be defended on philanthropic grounds; the question was whether the family or Art should come first. Perhaps Mr. Statham's strongest point was his contention that neither the Academy nor

the R.I.B.A. could create genius; they could only promote artistic education, and uphold the standard of technical excellence. Thus the Academy was right in excluding Rosetti, who, though, no doubt, a greater genius than most of the Academicians, admitted that he could not draw the figure correctly. Similarly the R.I.B.A. could not decide that one man was an architectural genius, and another was not; it could only decide whether a man was a thoroughly educated architect from a practical point of view.

## An Example in Gallantry.

Mr. Aston Webb, A.R.A., responded in a brief and modest speech. He defended the Institute with much humour against those critics who maintained that its movements were of the steam-roller type. A few years ago, said Mr. Webb, a gentle tap was made at the doors of the Architectural Association, and ladies asked for admission. There was a great flutter in the Association, and the ladies were not allowed to enter. Of recent years the same tapping had been heard at the doors of the Institute. In this case the bolts were withdrawn, and now they had a full-fledged lady member. "You younger men will say," said Mr. Webb, "that your hearts are so warm and ours are so cold that the reason is obvious. I think, however, it is a sign that we are prepared to move with the times." Mr. H. L. Florence also responded.

## Sir Edward Clarke's Speech.

The toast of the evening, "The Architectural Association," coupled with the name of the President, was proposed by Sir Edward Clarke, Q.C., M.P. After speaking of the special position in the architectural world occupied by the Association, Sir Edward Clarke spoke of the difficulties of the architectural profession in general. Architecture was an art the study of which was, he thought, more difficult, more full of complex problems, making more demands upon the capacities of the men who devoted themselves to it than any other art he knew. That it was an art, no one could deny; but it was an applied art, with a scientific side to it, and he had always felt that among the many occupations to which a man could give his life there was none that combined a greater degree of enjoyment of artistic life with the responsibility of scientific study. The great art of Architecture was limited and controlled by considerations which did not affect what he might call the more ornamental arts. It was limited and controlled by considerations of expense, and of the convenience of those who were to use the works when produced. The best possible house that they could design was liable to be interfered with and spoilt by the man who was going, not to look at the house, but to live inside it. He might consider, for instance, that a serious modification ought to be made in the matter of a bath-room.

## In Praise of Architecture.

Sir Edward spoke with eloquence, and an enthusiasm rare in a layman, of the value of architecture to the world at large, especially in its application to religious buildings. In every creed, under every sky, whatever the character of the religion might be, the worshippers who went within the walls of the temple found inspiration in its architecture. After sitting in silence and contemplation in the marble cathedral at Milan or in St. Mark's at Venice one could not fail to understand that the architect had been through the ages of the past and would still be, if he was true to his mission, one of the greatest and noblest teachers, with one of the highest inspirations and missions it was possible for a man to have.

## What the A.A. is.

The President, in his response, reminded those who were visitors that the Association was practically the only society for the education of architects. Not only students were their members; amongst their 1,300 members only 200 were students, the others were men who had passed through its classes and retained their membership. He appealed to the profession at large to join their ranks, and to their own



students not to let their enthusiasm flag.—Mr. Beresford Pite, in proposing the health of "the guests," made some sensible and practical remarks on the need for tempering artistic enthusiasm with common-sense considerations. He referred to the Oxford Museum as an example of the indiscriminating application of artistic theories. It was a result of Ruskin's "Stones of Venice," and was much admired at one time, but had now become a mere laughing stock.—Alderman Hind, the Master of the Plumbers' Company, and Mr. Reginald Blomfield responded to the toast.—The remaining toasts were: "The Committee and Officers," proposed by Mr. F. T. W. Goldsmith; and "The President Elect," proposed by Mr. W. H. Seth-Smith.—Some capital musical selections were given during the evening by Messrs. S. Constanduros, H. Passmore, Gervase Bailey, F. D. Clapham, and G. B. Carvill.

## R. I. B. A.

### THE PLANNING AND CONSTRUCTION OF BOARD SCHOOLS.

BY T. J. BAILEY.

(Continued from page 249, No. CCXXV.)

UNDER the head of Buildings for the Training of Teachers, the author described a scheme of buildings for this purpose, which might be considered as very complete, and as embodying all that is likely to be required in the future. On the ground-floor are provided four classrooms for forty-two and thirty-six, two of each, seated with single desks; a central hall, 50ft. 6in. by 33ft. 6in., with staircases, &c.; at each end on the first floor are four classrooms, and a properly equipped gymnasium over the hall; on the upper floor an art room over the gymnasium, the remainder of the floor being devoted to chemical and physical laboratories, lecture room, balance and dark rooms. A basement is provided for the engineering apparatus, and also a kitchen for the preparation of luncheons. The site of the particular buildings dealt with was large enough to give space for lawn-tennis on the girl's side, and for football on the boys'. The buildings for

#### Industrial and Truant Schools,

which next came under consideration, must be of an essentially different character from other buildings of the Board, as they are Boarding Establishments. Descriptions were given of a building recently erected for this purpose in connection with the Shaftesbury Training Ship, and also of the Upton House Truant School, the only building yet erected specially for the purpose. The Board are negotiating for a large site of some fifteen acres in the neighbourhood of London for the purpose of erecting two establishments—an industrial school for about 120 boys, and a truant school for a like number. The two institutions will be entirely separate as far as their occupation and management are concerned, but will probably be under the control of one superintendent and body of managers. Details of the proposed plan and general arrangements of the buildings were given by the author. For the purposes of the administrative work of the Board, London is divided into eleven divisions, necessitating a corresponding number of office buildings. The offices for the East Lambeth Division, now being erected in the Peckham Road, were selected for description as a typical block. On the ground floor is the entrance hall, a large room 57ft. by 22ft. for the visitors to perform their clerical work, a room for the assistant superintendent, and an office for the check clerk, also the lavatories, w.c.'s, &c.; on the first floor a committee-room, used also by the superintendent, and a clerk's office; on the second floor the correspondents' and clerks' offices, and caretaker above.

In the few general remarks with which the paper closed, the subject of cost was dealt with.

The Princess May School, Kingsland, was cited as a typical case, and as tenders were received only so lately as March of the present year, it may be considered as up to date. The building is to be of three stories, to accommodate 1,548 children, on a site of about 1½ acres. The cost per head is estimated to be £13 18s. 4d. This includes building the whole of the brickwork in cement, also the provision of glazed bricks to staircases, corridors, and dados for classrooms and halls, but does not include furniture. The cost of inclosing the whole site with walls and railings, tar paving, drainage, and provision for deep foundations below a normal depth of 6ft., is about £5,000 more. The total cost will be some £750 within the limit allowed by the Education Department. There was a suggestion a few years back that unnecessary expenditure was incurred on architectural adornment, and the committee dealing with this branch of the work ordered two or three schools to be built of stock bricks and slate roofs, with no architectural features about them. It was found, however, that the difference of cost between bare utilitarianism and buildings designed in some sort of style and regard for materials and colour was rather less than 5 per cent.

### THE DISCUSSION.

The Hon. E. Lyulph Stanley, Vice-chairman of the London School Board, said that to build a public elementary school was a matter which could not be approached simply by architectural skill and knowledge, because the conditions were special. The best thing to do in planning schools was to follow the policy of the particular School Board or other managers of schools who employed them. In the planning of schools the architect had many difficulties to contend with in peculiarity of site and aspect, but to thoroughly know what a school ought to be he must be familiar with what had to be done in the school. Mr. Bailey had laid down a number of propositions as to what was best and most desirable, but at the same time his idea of what was best in some cases must have been limited by the parsimony of his employers. In describing what a classroom should be like, he mentioned that he would put glazed bricks as high as the dado, and then a wall of ordinary bricks. The speaker thought that if Mr. Bailey was to be employed by a provincial School Board—say Liverpool or Birmingham—he would probably find that

#### Their Standard of Requirements

would demand that the walls should be thoroughly finished with plaster, and not left in the rough brick; therefore he did not think because Mr. Bailey, working for economical, not to say parsimonious, employers, had indicated certain roughness of finish in the building that that really indicated the type of finish an architect, free to advise his employer, would consider was the proper one to adopt. He agreed with Mr. Bailey that the furthest scholars ought not to be more than 20ft. or 22ft. from the windows, getting their light from the left; but Mr. Bailey had not told them in how many of these matters the School Board for London had had to carry these points by force against the Education Department. They had even been invited quite recently to make their furthest row some 24ft. from the light. With reference to the

#### Use of Halls

in dealing with the discipline and education of children, that was a school-manager's question, not an architect's. If a room was to be used for one purpose, it had better be constructed for that purpose, and no attempt should be made to make it serve some other purpose. The department had sometimes suggested in the interest of supposed economy that they should put a class in the hall. It was apparent to architects how bad it was to have a class in a room 50ft. by 30ft. which was used as a passage for children going to and from their various classrooms. It also put a great strain on the voice of the teacher. Architects, in considering a school plan, should concentrate their attention first and foremost

on the arrangement of the classrooms. Mr. Bailey spoke about the

#### Stepping of the Floors,

but experts were not at all agreed as to whether the floors of classrooms should be stepped or not, and whether the platform from which the teacher delivered instruction should not be raised and the floor flat. These were things yet to be decided. The questions as to the size of a classroom and the cubic content depended very much upon the rapidity with which the air could be changed. There was not the slightest doubt that for the facility of a class seeing the blackboard, and for the diminution of the strain upon the teacher's voice, and for lighting the room quite to the back from the windows, it was not desirable to make the classroom a bit larger than was absolutely necessary for the health of the children. Teaching was much more pleasantly conducted in a moderate-sized room than in a large one; but they must have air. Mr. Bailey, he thought, had not fully brought out the importance of varying the

#### Size of the Classrooms.

The work of teaching in the more advanced classes made smaller classrooms necessary for the higher divisions, in order to lessen the strain on the teacher. There had been days when the Education Department recognised in its Code a class of eighty, and in those days an economical School Board built classrooms for eighty. One result of planning schools in that way in the earlier days was that, now that people had a higher idea of what was due to the teaching of children, a certain amount of space was wasted. Fifty children, for instance, were put into a classroom originally planned for sixty, with the result that ten places had to be written off and were unavailable. But it was policy that determined place, and it was not the architect who determined the policy; it was the Education Department, or the particular Board who employed him, and the public opinion of the country. He hoped that architects would make themselves acquainted with the requirements of school planning, so that they could make recommendations to the Board when they were called in, and their influence might do something to educate the Board who employed them.

#### A Schoolmaster's Views.

Mr. C. J. Dawson, Headmaster of the Alden-Street School, St. Pancras, said that he could only speak as a teacher in one of the schools which had certainly not been designed on the methods set forth in Mr. Bailey's paper. In the building he was engaged in there was one large room which accommodated over eighty scholars, and it was only separated from another room, which accommodated sixty scholars, by a sliding partition. Two others at each end of the building were separated by slight walls and partly sliding partitions there held over forty each. If they were taken together they were very inconvenient and too large for a teacher to properly manage, and if taken separately they were smaller than the Board and Education Department required to be placed under the control of a single teacher. The question of warming and ventilating was a combined question, because if scientific principles could be thoroughly applied, there should be a system possible by which the warming should help the ventilation and the ventilation assist the warming, in one way, by supplying cool air in the summer time and warmer air in the winter. If the system referred to by Mr. Bailey fulfilled all that was claimed for it, it ought to be put into operation in every school where it was possible—at all events, in every new school, unless the cost was so large as to be utterly prohibitive. But in many schools he was acquainted with the ventilation was an entire failure by the system provided. The points mentioned by Mr. Bailey that there should be no dark corners, and no pupil should be seated too far from the light, were important. Nothing had been said about the

#### Acoustic Properties

of the rooms. Many rooms in a school were not at all well-adapted for sound. Before he



came under the London School Board he had had to manage the whole of a school in a large room, over 60ft. by 30ft., and fully 20ft. high. Several classes were taught in that one large room, and the echoes were so confusing that it was a very great strain upon the teachers' voices, and they had a difficulty in making themselves heard distinctly by the scholars. This matter of acoustics certainly affected the question referred to by Mr. Stanley as to classes being held in school halls.—Mr. E. W. Mountford proposed a vote of thanks to Mr. Bailey for his interesting paper. The reference to the

#### Warming and Ventilating

of the buildings had interested him most, as some years ago plans of his had to go before the late Mr. Ewan Christian, acting on behalf of the Charity Commissioners, and he, with the later buildings of the Board before his eyes, absolutely refused to allow any kind of mechanical ventilation to be put into the building. Mr. Christian said he had been examining many of the London schools, and had come to the conclusion that there was nothing in the way of ventilating to equal windows. The "Plenum" system, which Mr. Bailey appeared to have adopted, was probably the best; but he should be glad to hear his opinion of that system in ten years time. It was said of the "Plenum" system that it was equally available in summer for forcing in cool air. That was a great mistake. People, he said, did not mind having air forced into a room so long as that air was warm, but when cold air was forced in, the inevitable result would be that the occupants of the room would block up the openings.—Mr. R. Phé Spiers seconded the vote of thanks, and said that he had built two of the first Board Schools, and he could now see that they were built entirely wrong, but they were built according to the policy of the Board at that time.—The vote of thanks was carried with much applause, and Mr. Bailey, in responding, said that he had tried to make the paper as comprehensive as he could, as he thought it right that they should be acquainted with details of the extensive work the School Board were carrying out.

#### Attractive Schools Wanted.

The Chairman considered that if children were put into rough, uncultivated, unattractive places they could not be expected to gain that admiration of form and colour which was so necessary to human happiness. He thought that the walls of their schools should be covered with beautiful tiles or enamelled bricks; that the best art England could supply should be constantly before the children when their attention was not engaged in their lessons; and that everything should be as simple as possible, but with a certain amount of grace, so that their faculties might be cultivated to admire the beauties of nature round them. He had found that even those students who were specially devoted to form and colour had a remarkably small observation of the objects of nature by which they were surrounded—the simple shells, flowers, and leaves. If that was the case with people who are trained to study, how much more so was it with those whose artistic faculties were left dormant, and who were surrounded with ugliness? He hoped the gentlemen interested in the work of the Board would give thought to the subject he had mentioned.

#### An Announcement.

After the discussion, Professor Aitchison announced that the next meeting would be held on Monday, June 12th, for the purpose of receiving the report of the scrutineers with respect to the election of the council and committee, and to elect the candidates for membership; also to discuss the report of the committee appointed to consider the administration of the building bye-laws in non-metropolitan districts, which report will be used to members with the next number of the journal; and, further, to consider a resolution on party structures, recommended by the committee, and approved of by the council.

## Views and Reviews.

### DURHAM CATHEDRAL.

Charles Lamb devided his library into two classes; one books, the other dictionaries, gazeteers, and the statutes at large. Were he living now, he would have no hesitation in which category to place Bell's Cathedral Series. The sixteen volumes which have appeared are painstaking, fairly accurate compilations; but they are not books. The one exception is the York volume, where Mr. Clutton Brock is refreshingly human in his vigorous criticism of the York design. If Mr. Ruskin's axiom be accepted, that the best work is that which gave the worker most pleasure, then the series will not rank high, for the books are but compilations; there is hardly a word in the volumes before us which one has not seen elsewhere. One hardly sees for whom the Durham volume is meant; if for architectural students, then why is the vaulting not shown on the plan, and some account given of the theories as to its chronology—the most difficult and important problem in English archaeology? The author does not even recognise that the problem exists. For the layman, on the other hand, the book is dry as dust and technical. As in most of the other volumes, the author seems never to have seen any church except the one he has been commissioned to write about. It is quite remarkable how he ignores the comparative method of treatment—a method which, in the hands of Professor Freeman, e.g., in treating of Peterborough, Ely, and Norwich together, gave such valuable and interesting results. We might have had here too what we have not, an account of the derivatives of Durham, viz., Lindisfarne, Dunfermline, Waltham, and Selby abbeys; and, on the other hand, a comparison of some of the Normandy churches, such as Cerisy, to which Durham is so closely akin. The author need have gone no further than Ruprich-Robert's "Architecture Normande." The result is that, having studied apparently only one church, Mr. Bygate sees nothing abnormal anywhere in Durham. He is not surprised that the magnificent Norman ironwork of one of the doorways is French, though it is almost unique. He is not surprised that the monastery was approached from the east, and that the monks' dormitory was on the west side of the cloister—probably being unaware how unusual such an arrangement is. He informs us that the ambulatory or eastern choir-aisle is far less common on the continent. It occurs in very early days in St. Martin, Tours; also at Vignory, Cluny, Paray-le-Monial, S. Benoît-sur-Loire, and is common in Burgundy and the south of France. Page 72 tells us that the Lady chapel was provided for the benefit of the ladies, as they might not enter the cathedral; he adds that women were allowed to enter the cathedral as far as a line drawn immediately west of the north and south doorways of the nave. Then we have long names introduced without any idea of their meaning. The Byzantines and the Lombards are here as usual. *Que diable allaient-ils faire dans cette galère?* How did they get to Durham? "Lombardic" capitals are figured in the crypt of the castle; they are just the ordinary Ionic capitals, which were in use all over Normandy and England in the latter half of the eleventh century. F. B.

"Durham Cathedral," By J. E. Bygate, price 1s. 6d. London: George Bell and Co.

### HADDON HALL.

This is no ordinary guide-book. Mr. Cheetham has chosen a hackneyed subject, but he has treated it in a manner that is refreshingly original. Without troubling much about historical and antiquarian details, which would interest only a small proportion of visitors, the author makes his appeal to the ordinary tourist, and tries to show him the significance of many matters that the ordinary guide book overlooks, and the ordinary tourist lacks knowledge to discover for himself. Mr. Cheetham's chief aim is to make Haddon Hall interesting to the tourist as a piece of architecture. He

begins with a few remarks—necessarily of a very elementary character—on styles of English architecture, and then proceeds to discuss the development of domestic architecture in England in the middle ages, from the Norman Castle to the Elizabethan mansion. This brief study in architectural evolution is a model of clearness and simplicity, and is admirably calculated to awaken in the non-professional reader a new interest in matters architectural, and to render a visit to Haddon Hall a far more interesting and profitable undertaking than it would otherwise have been.

Mr. Cheetham then proceeds to apply the general principle he has been explaining to the particular case of Haddon Hall, and clearly shows, with the aid of a plan, the various periods to which different parts of the house belong. He then button-holes the reader, so to speak, and conducts him through the various rooms, pointing out the special points of interest in each. In an interesting chapter on "Some General Characteristics of the Building," the author points out the remarkable unity of architectural character which Haddon Hall displays, although the various parts were built at so many different periods. The Elizabethan work, for instance, is far more Gothic in character than might be expected. This, the author considers, is largely due to local workmanship. "We can imagine several generations of builders and craftsmen, perhaps belonging to the same families, following one another in the work at Haddon, and getting so accustomed to Gothic treatment and forms of mouldings as to continue unconsciously to build in that style, having little or no knowledge of the outside world."

A few historical notes are added and the book is illustrated with a number of sketches by Miss Josephine Norris and the author. We could do with more guide books of this sort. It would tend towards a more general appreciation of architecture if those in charge of other historical buildings frequented by tourists would arrange for the publication of an explanation of their architectural characteristics, as lucid and intelligent as that supplied by Mr. Cheetham in the case of Haddon Hall.

"Haddon Hall: Being Notes on its Architecture and History for the use of Visitors." By F. H. Cheetham. Price 1s. Bakewell and Buxton; C. F. Wardley, "High Peak News" Offices.

### HAMMERED AND REPOUSSE SILVER.

It is difficult to feel enthusiastic over Mr. Gilbert Marks' exhibition of hammered and repoussé silver work at the Fine Art Society's gallery, though one would like to be able to do so. Every attempt to lift the applied arts out of the mud deserves our sympathy and help, and we would wish to give them freely to Mr. Marks. But somehow he irritates us, and we hardly know why. It is hardly kind to call his work commonplace, and perhaps it is not quite true; but there is in some of his things such an entire lack of design, of feeling for form and arrangement; and then, perhaps, we detest reproduction of natural flowers in hammered silver. There is a set of tea pot, jug, and basin; well—most people would prefer a Queen Anne or early Georgian. Because a thing is hammered and repoussé, that is no excuse for poverty of form. Of Nos. 3 and 28 what more can be said? We prefer Nos. 48 and 50, which have some shape and richness of effect, even though much of the ornament consists of naturalistic flowers; and Nos. 55 and 57, large plates purchased by the Vintners Co.; and No. 53, another large plate. The fact is that we are rather out of touch with Mr. Marks' style of work; it is not the sort of thing we would like to do ourselves, so perhaps we are blinded to many good points in it by lack of sympathy; but after all, much worse things than these would still be far better than the late Victorian teapot of commerce.

**A New English Church at Weimar.**—The foundation stone of a new English church was laid at Weimar by the Grand Duke last Thursday.



## Correspondence.

### SMALL COMPETITIONS: ARE THEY DESIRABLE?

To the Editor of THE BUILDERS' JOURNAL.  
LONDON, N.

DEAR SIR,—I don't agree with your correspondent H. W. W. It is all very well for men who are well established in the profession to object to these small competitions. But for the beginner they are an undoubted boon. No one will give a commission to the young man just starting business for himself; the client assumes that the older and more experienced men must be able to carry out his wishes more satisfactorily. But if he enters an open competition, the beginner's designs are considered on their merits only; he stands an equal chance with the man who can write the magic initials F.R.I.B.A. after his name. With many eminent architects the winning of a small competition has been the first step on the ladder which has led to their present exalted position. Let them not, then, kick away the ladder by which they rose.

By all means let us have fair and reasonable conditions in all competitions, but do not let us condemn the system because sometimes it is badly carried out.—Yours faithfully,  
ASPIRANT.

### REGISTRATION OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.  
LONDON, S.W.

SIR,—I have read with interest the letters you have received upon this important subject, and I notice that the professional seems to have swamped the artistic view of the matter. Allow me to put in a plea for the non-registration of architects. The great merit of the Bill is stated to be that it will create a higher status for the architect. Now, if we were to have registration, would that raise the architect in public estimation? I think not, while we have such abominations put forth every day by the men who have passed examinations of the Institute and Society of Architects. It is put forward that gradually we are progressing towards a higher appreciation of art, and that there is hope for the attainment of this by the registration of architects. This is a misapprehension. The men who are doing the best for Architecture, are not the men who have passed such examinations as the Society of Architects would offer. In the past there was no such passing of theoretical examinations. The architect was a man who had worked at "Arts and Crafts," had taken part in the actual building operations, and no one can surely deny that architects were held in far greater esteem then. Their buildings stand as witnesses of their skill. To my mind there is hope in the entry into the arena of persons unpossessed of a solely theoretical knowledge. In spite of all the examinations, there are many, members of the Institute, &c., who have passed these examinations who could not erect a satisfactory building were it not for the practical knowledge of the builder, and as for their designs, well, there is plenty of witness to my statement that they are a reproach to our state of civilisation. I welcome the influx of these "incompetent and unqualified persons," who will eventually revive the old craftsmanship spirit, and build for us beautiful buildings, practicably and workably planned, healthy, and safe.

Your correspondent, "Architect," calls for an "Architectural Union" for the protection of the interests of architects; rather call it a "Guild" and model it on the old lines, then should we obtain our recognition by the public and in law, and be able to guard against the cutting of fees. In your last issue Mr. Middleton states that the acquisition of a generally accepted minimum of knowledge and skill is no bar to genius. I quite agree with him in this, but everyone is not possessed of this genius, certainly not the majority of those who have passed these much talked of examinations. With regard to the "common

or garden kind" of architect, I consider it is wrong to force him to submit to an examination drawn up on the wrong lines, thus turning him upon the wrong metals, and wasting his time at that period of his life when it is most needed for the attainment of some practical skill and knowledge in the art of Architecture. If we had registration, those who had just managed to scrape through these examinations would, without doubt, be considered on much the same level as those who have a greater knowledge, for the generality of the public are unable to judge differently.—Yours, &c.,  
PRACTICAL.

## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### THE PRACTICE OF ENGINEERING.

To the Editor of THE BUILDERS' JOURNAL.  
DEVIZES.

SIR,—Will you kindly inform a constant reader whether a civil engineer has to pass any exam. before he can practice as an engineer. As you are aware, an architect has no exam. to pass to qualify him for practice, and I shall be glad to know through your columns whether this applies to civil engineering.—Yours faithfully,  
J. M. P.

Anyone is at liberty to call himself and to practise as an "engineer," and use the letters "C.E." after his name, but, of course, he cannot use the title of any of the engineering societies unless he is a member of them.

### CONCRETE MIXING.

To the Editor of THE BUILDERS' JOURNAL.  
ASTON.

DEAR SIR,—Would you kindly say what book you would recommend to a young starter, where there is a lot of concreting? Does mixing concrete at 6 to 1 mean 6 bushels of rubble, &c., to 1 bushel of cement and lime? What is the weight of a bag of ground lime, and how many bushels does it contain?—Yours, &c.,  
A BEGINNER.

Mixing concrete in the proportion of 6 to 1, means 6 parts—bushels or yards—of aggregate to 1 part of matrix. Aggregate for concrete foundations generally consists of broken bricks, stones, gravel, or similar hard and cheap materials; these are most readily obtained in the district of the proposed buildings. Aggregate for concrete paving, fireproof stairs, and similar works, consists of crushed granite, slag, used singly or in combination. Portland cement is the best matrix. Hydraulic lime is sometimes used for concrete foundations. One ton of quicklime = 27 bushels of ground lime; 3 bushels of ground lime = 1 sack; 9 sacks = 1 ton. "Plastering, Plain and Decorative," published by B. T. Batsford, 94, High Holborn, London, contains full instructions and illustrations concerning the use of concrete for all building purposes.  
W. MILLAR.

**Ilfracombe Improvements.**—Some time ago the Harbour and Pier authorities obtained an Act of Parliament sanctioning the construction of a breakwater, &c., at an estimated cost of £200,000. During the next twelve months it is intended to spend £17,000 upon a pavilion, and £10,000 upon dredging operations, and preliminaries in connection with the breakwater. The pavilion will be first opened on Easter Monday, next year, and will accommodate 2,000 persons. In connection with the pavilion will be a dining hall, refreshment rooms, cloak and dressing rooms, two lavatories, and a balcony right round the building forming a fine promenade. The breakwater will run out 60ft. from the present pier, and dredging operations are expected to deepen the water about 30ft. throughout.

## Bricks and Mortar.

EFFINGHAM HOUSE, ARUNDEL STREET,  
LONDON, W.C.

June 7th, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkish carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### Picturesque Guildford.

It is a commonplace observation that we are apt to treat with much greater respect objects of interest and beauty that can only be seen with difficulty and expense than those which lie almost at our doors. Guildford is an example of a place, which, if it were located, say, in the Black Forest, would be much belauded by Baedeker and much visited by tourists. Mr. A. H. Powell, therefore, has done a useful piece of work in calling attention in the June number of the "Architectural Review" to the natural and architectural beauties of this interesting old Surrey town. Mr. Powell's article is illustrated by some charming sketches of his own, and we feel sure that after reading it many of our London readers, at any rate, will take the earliest opportunity of cycling or otherwise transporting themselves to Guildford, and making acquaintance, or renewing it as the case may be, with the Abbot's Hospital, St. Mary's Church, and perchance also the Angel Inn.

### An Excellent Number.

The article above referred to is but one of many good things in the current number of the "Architectural Review." The Academy Supplement given with this number contains twenty-three plates illustrating some of the most notable designs in Architecture and Crafts in this year's Academy; as not more than one design by any individual artist is given the collection is a very representative one. The editors seem to have succeeded in obtaining the right to reproduce practically all the most important designs, and there can be no doubt that the Supplement published last month, together with that in the present number, and a third supplement, which is announced for publication with the July number, will constitute the best and most complete record obtainable of the Academy architecture for 1899. Among other features of the June number are the concluding part of Mr. E. Guy Dawber's article on "Clocks and their Decoration," a second instalment of a well illustrated article on Toledo by Joseph Louis Powell, and an article in which all lovers of Nature will delight, entitled "Reminiscences of a Lincolnshire Stream," by R. B. Lodge. The ninth of Mr. F. L. Emanuel's series of plates illustrating "Disappearing London," which is given as a supplement with this number, consists of two small illustrations showing views of Milford Lane, Strand, and Booksellers' Row. We should not be surprised if these are regarded by many as quite the most charming drawings that have yet appeared in this series.



**Bricks as an Investment.**

THE "Financial News" published an article the other day in which the following reference was made to the present flourishing condition of the brick-making industry. "An examination of the accounts of the principal concerns suggests that the disinclination of shareholders to part with their shares is chiefly due to the lucrative nature of the business in which they have become interested, and to the handsome returns which are in many instances made in the way of dividend. The companies for the most part are moderately capitalised; but the dividend distributions in several cases are so considerable as to render it doubtful whether shares could be obtained anywhere in the neighbourhood of par."

**Tudor House.**

MR. HUGH BLAKISTON, the secretary of the National Trust for Places of Historic Interest or Natural Beauty, in a letter on the subject of the debate on Tudor House, Bromley, says that "by appointing a committee for the survey of the memorials of Greater London, the Council have admitted that architectural worth and historic interest are matters worthy of consideration. That such an admission should have been made by the greatest local governing body in the country is a precedent of great importance, and it would, therefore, be a great misfortune if, in the first case which came before them, the council were to ignore this admission. Further, the Parks Committee argue that the demolition of the house would provide more open space for the children to play in. The insinuation is, of course, that to preserve the house would be to postpone public utility to a mistaken aestheticism. Now are we, or are we not, to recognise that Art and History are not the hobbies of a few, but have a direct practical bearing on the lives of the people?" One of the most crying evils in the East End is the ghastly monotony which everywhere prevails, and although, as Mr. Blakiston remarks, beautiful surroundings are not a panacea for all ills, if the London County Council wish to make the lives of the people more healthy and more human, the preservation of such places of interest as Tudor House is one of the ways by which they can attain the desired end.

**Improvements in Aberdeen.**

AN arrangement was made some time ago between the Aberdeen Town Council and Mr. George Watt, architect, for the improvement and widening of a portion of Skene Square. A number of houses on the west side of the street are to be pulled down, and the new building line has been fixed so as to add 14ft. at one point to the width of the street. When this has been effected the west side of Skene Square will be one uniform line from Baker Street to Rosemount Place, with the exception of a small portion of open ground. Altogether six houses are to be demolished. One of the houses to come down is the birthplace of John Phillip, R.A., who was born there on April 19, 1817. His birthplace was suitably marked by a bronze tablet, and it is to be hoped that in any new building that may be put up care will be taken to mark in an appropriate manner the birthplace of the artist.

**The "Uglification" of Chelsea.**

A SHORT time ago attention was called to a very hideous shaft which the London County Council had erected on the Chelsea Embankment to ventilate the low-level sewer. The Chelsea Vestry, however, do not seem to appreciate its hideousness. Their artistic authority is Dr. Parkes, the Medical Officer of Health; he has examined the abomination, and at the last meeting of the Vestry reported as follows:—"The shafts are ornamental in appearance, with enlarged fluted bases and decorative tops, and do not, in my opinion, in any way detract from the beauty of the Embankment. A specimen one has been painted in three shades of green, which harmonises well just now with the surrounding foliage, and will, no doubt, have toned down to a somewhat more neutral tint with the

fall of the leaf." The italics are ours. Dr. Parkes admits that the ventilator at Battersea Bridge, not being screened by any neighbouring trees, and standing at a somewhat high level, is certainly a somewhat intrusive feature in the surrounding scenery, but it is difficult, he says, to see what other position could have been found for it. On the whole, however, he seems quite pleased with the proposed scheme, which, he says, "will be highly effective in preventing the nuisances which have been so long complained of, and will not in any way detract from the ornamental, architectural, or artistic features of the neighbourhood." We wonder whether the new councils will be more alive to the beauties of their neighbourhood than the present local authorities are.

**Fire Tests.**

THE British Fire Prevention Committee is showing further increased activity at its testing station, and a most important series of investigations is again in hand. Among these tests is one with a floor of steel joists and concrete filling, the concrete being of the aggregate lately allowed by the L.C.C. Another floor under investigation is one by the Columbian Fire-Proofing Company, U.S.A., which is to be subjected to very high temperatures. Various forms of doors of wood, armoured wood and iron will be under investigation, also silicate partitions and ceilings by Messrs. Anderson and Messrs. Broadbent; some patented partitions and plasters, some plain electro-glazed windows by the Luxfer Prism Syndicate; and lastly, some of the non-flammable materials. A set of ordinary partitions have also been recently tested. Nearly all the great public authorities are now represented at the committee's tests, and at the last test representatives attended from the leading insurance companies by special invitation. Owing to the numerous applications to visit the station, the executive has asked us to remind would-be visitors that the attendance is still strictly limited to the members by rotation, and a few special guests.

**The Consistory Court and St. Dunstan's.**

DR. TRISTRAM, Chancellor of the Diocese of London, sat last Wednesday to hear the application for a faculty to purchase the land next to St. Dunstan's Church. Mr. L. T. Dibdin appeared for the petitioners, and Mr. J. B. Aflay for the Law Life Assurance Society, and Mr. Hugh Blakiston for the National Trust for Places of Historic Interest of Natural Beauty. This latter's opposition was subsequently withdrawn. At the conclusion of the evidence the Chancellor reserved his formal judgment until next week, but said he should grant the faculty. We are very sorry that the considerable opposition which was raised to the hemming in with buildings on both sides of this fine tower was entirely withdrawn, so that the promoters of the scheme had it all their own way at the hearing of the application.

**Discoveries at the Tower of London.**

DURING the laying of the foundations of the new guard-room and other offices near the White Tower, the workmen cut through a Roman wall, probably belonging to the second century, beyond which were found a number of perfectly preserved flue-tiles, for the diffusion of hot air from the hypocaust. They are excellent specimens of their kind, measuring 15½ in. in length, 6½ in. wide, and 4½ in. in depth. Near by a Roman well has been uncovered, in good preservation, having a diameter of 4ft. 6 in. Several of the tiles are being found, and there is every probability that with such useful indications the Legion by which the constructions may have been carried out will be identified.

**Ancient Egyptian Building Materials.**

IN a recent issue of "Engineering" an article appeared on the architecture and chief building materials of the old Egyptians. It states that the chief building material of the old Egyptians was clay, dried, but not baked. The bricks

measured 5.5 in. by 14.9 in. by a minimum thickness of 4.3 in. Walls rose in step fashion. The sand-saw, made of wire, cord, or thin plates, and the bow were important tools. The enormous blocks of the statuary were first sawed in rough outlines with straight, or rather slightly curved, faces—the obelisk faces are all curved—and then worked down to proper shape. We cannot agree with the writer of the article that the workmanship of the architects of Egypt was poor. The workmanship of the Egyptians has always excited admiration, and certainly cannot be classed as poor. The writer says that the architecture cannot have descended from Nubia and the troglodytes; but the clay industry may have come from Chaldaea. The bricks of the Chaldeans, about 1ft. square, bore the Royal mark. It has been ascertained with practical certainty that they were chiefly used in the crude, soft condition. The Egyptians used mortar more like that employed in plaster than in ordinary masonry.

**The Tomb of Pelayo.**

THE Cathedral of Burgos are notable for their architecture and also for the tombs in them. The ornament which we here illustrate is in the Gothic Chapel of Santa Ana, and is on the sepulchre of Pelayus or Pelayo (date 1490), the conqueror of the Moors, at Cangas de Onis in the Asturias. By this battle of Cangas, Pelayo, who was the Cid of his time, gave the first serious blow to the Moors in Spain. The carving of the grapes and vine leaves is a good example of the free hand in sculpture possessed by Spanish artists. The vine was a favourite subject, being often combined with figures, birds and animals. Our illustration is drawn by Mr. Thomas R. Macquoid, R.I.

**A Portrait Exhibiton.**

ALL interested in portrait painting should make a point of attending an exhibition of the works of M. Benjamin Constant, which is to be opened in a few days at the Fine Art Society's galleries in New Bond Street. M. Constant is probably the most eminent of living French portrait painters, and he has lately received a commission for a portrait of Her Majesty the Queen. Among other works on view at the forthcoming exhibition will be portraits of Mlle. Emma Caloe, the Duchess Paul of Mecklenburg, Sir William Ingram, Bart., Madame Houssage, M. Paul Sohège, Comte Henri Delaborde, M. Chaplain, M. Bertrand, and others.



FROM THE TOMB OF PELAYO AT BURGOS CATHEDRAL. DRAWN BY THOMAS R. MACQUOID, R.I.



## Professional Practice.

**Bocking.**—A new church, erected in connection with the Franciscan Convent, was opened recently. The new building has been carried out in the Gothic style of architecture, with a belfry at the side, the materials used being red facing bricks with stone dressing, and windows of cathedral tinted glass. It comprises, in addition to the church, all the necessary accommodation for the nuns. The church is divided into three portions, the sanctuary, with the high altar, 20ft. by 25ft., the flooring being of stone and coloured tiles, and the front of the altar of glass mosaic. The reredos, of Hoptonwood marble and stone, is not yet completed. Facing the altar is the nave, 42ft. by 24ft.; this is fitted with oak stalls, the woodwork of which goes up and forms the gallery for the organ. At right angles with the sanctuary is the transept, 25ft. by 45ft., fitted with chairs for public use. The colouring of the ceiling of the church has been very artistically carried out, the sanctuary being blue, the chapel green, and the transept vermillion red, the combination of the colours having a very fine effect. At the rear of the church, the new portion of the convent forms a quadrangle with the old, around which are the refectory, kitchens, laundry, &c. The doors are panelled. Above the kitchens are ten cells or sleeping apartments for the nuns. The walls throughout are of grey plaster, and the floorings of wood. Mr. J. F. Bentley, of London, was the architect, and Messrs. A. Brown and Son, of Braintree, were the contractors.

**Mountsorrel.**—The enlarged chancel and vestry, new organ, reredos, choir stalls, and pulpit were dedicated recently at Christ Church by the Right Rev. Bishop Suffragan of Leicester. The chancel has been lengthened to 22ft. to accommodate the choir and organ. A simple but well-carved reredos has been erected at the east end. It has five panels, four for the Creed, Lord's Prayer, and Ten Commandments, and a centre having the symbolised vine and olive tree surmounted by the initials I.H.S. The organ consists of two manuals, great, swell, and full compass pedal organ. The manual action is on the Trackit system. The tubular pneumatic action is used for the pedal organ, and there are some interesting couplings in the stops. Mr. V. Dearden designed the combination, and Messrs. S. Taylors, of Leicester, were the builders. The oak choir stalls, executed by Mr. J. Dilks, of Mountsorrel, are nicely carved. The pulpit is of old oak of the church at Spondon, Derby. The contractors for the chancel, organ chamber, and reredos were Messrs. Scarr Jowell and Co., of Barrow, and the architects Messrs. Goddard and Co., of Leicester. The alterations will cost about £800.

**Portsmouth.**—A new drill hall is to be erected for the 3rd (Duke of Connaught's Own) V.B. Hampshire Regiment from plans prepared by Major A. H. Bone. The foundation stone was laid last Saturday. The frontage will be to Stanhope Road. The material will be dark red brick, with Portland stone dressings, and there will be a large square tower, with a miniature tower on it over the main entrance, castellated towers at the three angles, and a small circular tower at the Edinburgh Road corner. A further feature will be the large square bay to the officers' mess room, formed of Portland stone. The building consists of a large drill space, round which are grouped the various offices. The drill hall occupies the ground floor, its dimensions being 144ft. by 120ft.; the roof will be carried up by six wrought iron lattice principals; and there will be two galleries. To the right of the main entrance, and leading from the large hall, will be the gymnasium and recruits' hall. There will also be an extra hall and large gymnasium. The dimensions of the second hall are 60ft. by 46ft., and dressing rooms are attached. Over this portion of the building is the Officers' mess room and ante room. On the ground

floor to the left of the main entrance there are Commanding Officer's room, orderly room, armoury, men's recreation room, junior N.C.O.'s room, band room, and stores. On the first floor over the band room is the committee room; and another feature, the Sergeants' mess, 60ft. by 26ft., is over the N.C.O.'s room and part of the men's recreation room. Adjoining the Sergeants' mess is a room which will be set apart for the use of the Hampshire Yeomanry, and to accommodate large stores for the Quartermaster. The building will be mainly of two storeys, a third storey and a portion of the block being the caretaker's apartments.

**Reading.**—H.R.H. Prince Christian recently visited Reading for the purpose of unveiling the Murdock Memorial tablet in the pavilion erected on the Berks County Cricket Club ground at Elm Park. The memorial tablet is inserted 6ft. 6in. from the ground in the wall dividing the luncheon room from the members' dressing-room. It has been made from a richly-veined block of alabaster, and has a bold moulding, and the inscription, which states that the pavilion was completed as a memorial to the late Mr. Charles Townsend Murdock, the first chairman of the club, is incised in plain gilded block letters. The pavilion has been erected from designs by Mr. G. W. Webb, F.R.I.B.A., of Reading, and is a very commodious structure. It is in old English, half-timbered style, and of red brick, with ornamental brick patterns between the timbers, and surmounted by a bell turret, while in the central gable is a large clock. The roofing is in dark red tiles. The principal apartment of the building is the central luncheon room, which measures 40ft. by 20ft. The luncheon room is about 22ft. high, with open timbered roof, and four clerestory windows. On the left of the main entrance is the members' dressing-room, measuring 25ft. by 15ft., with adjoining separate bathroom lavatory, and other offices; while on the right of the luncheon room are a committee-room, about 15ft. square, a visitors' room, about 18ft. by 15ft., also with separate bathroom, lavatory, and offices, and a room and offices for professionals. Attached to the building on this side is a large covered stand, with terrace, which is reserved for the use of professionals. The floor of the pavilion is throughout raised some 5ft. from the level of the ground, and the terrace inclosure extends about 20ft. in front of the building. On the first floor the principal feature is the spacious balcony running along the front, and measuring 45ft. by 7ft.; this is approached by outside staircases. There is also a scorers' room, 14ft. by 16ft., with a balcony for the use of the scorers, and a large workshop and store room, 30ft. by 14ft., for the use of the ground men, each approached by a separate outside staircase.

**Roundthorn.**—Four foundation stones were laid recently on the site of the new chapel school to be erected at Roundthorn in connection with the Methodist New Connection Circuit. The style of architecture is Gothic, and it is to be built of brick, with stone and Ruabon dressings. The roof is to be open timbered to collar beam, and all the joiners' work will be of best pitch-pine and varnished. The access to the new school is by two entrances, from Roundthorn Road and from the old road, in which is a staircase leading to the gallery and to a corridor between the old and new schools, 6ft. wide, which gives access to both buildings. The large room is 52ft. by 34ft. 6in. There is a minister's vestry 14ft. 6in. by 12ft. The gallery over the main entrance is four sittings in depth. The outside facings to wall are to be of Newhey bricks. The glazing will be in ground sheet glass with lead lights above the transeam. The centre window in the front elevation is formed in a gable with buttresses on each side; this window will be all of stained glass in lead lights. The roof is to be covered with Welsh slates and Ruabon ridge cresting. The lighting of the school will be principally by ornamental coronas from the ceiling. The ventilation will be effected by fresh air wall inlets and outlets in the ceiling connected with patent exhaust ventilators on the roof. The

heating will be effected by hot water, low pressure. The total cost will be about £1,400, which includes lighting, heating, and ventilation. The schoolroom and the gallery will accommodate about 550 persons. The contracts have been let as follows:—Excavating, drainage, brickwork, and concreting, Mr. Whitworth Whittaker; stonework, Messrs. S. and J. Whitehead; joiner's work, Messrs. J. Hewkin and Co., of Greenfield; slating, Mr. R. C. Fletcher; plumbing, glazing, and varnishing, Messrs. Butterworth and Son; plastering, Mr. W. Lodge. The whole of the works are to be carried out from the designs and under the superintendence of Mr. John W. Firth, architect, of Oldham.

**Westbar.**—A new fire and police building is being erected for the Corporation of Sheffield on a corner site at the junction of Westbar and Westbar Green. The elevation is in the eighteenth century Renaissance style. Welsh bricks are being used for the facings, and Scotch stone is brought into requisition for the dressings. The tower rises to a height of 80ft.; the upper part is fitted as a look-out, and the lower is to be used for drying hose pipes. The police department is to the left of the tower, and consists of waiting, charge, telephone, and search rooms, inspector's office, four cells, parade in yard with glass roof over, and stable for twelve horses. The fire department, to the right of the tower, will have space for several engines and an escape, and stable for four horses, also a house for the superintendent. The whole of the upper floor is arranged as bedrooms, with lavatory and bathrooms, for twenty men, and the first floor has a kitchen, dining, and recreation rooms. White glazed bricks have been used for the walls of the fire engine house, police offices, and cells, and the floors will be of smooth surfaced concrete. The general contract is in the hands of Messrs. Ash, Son, and Biggin, of Furnival Street, Messrs. Charles Sedgwick and Sons have the slating and plastering, Messrs. Braithwaite and Co. the plumbing and glazing, Mr. Frank Tory the carving, Messrs. Bright Bros. the heating, the Gas Light Company is laying on the gas, and the building will also be fitted up with the electric light. The clerk of works is Mr. Walter Davison, and the architect, Mr. Joseph Norton, of Alliance Chambers Sheffield.

**Yarmouth.**—Last Wednesday afternoon the opening and dedicatory services took place in respect to St. Luke's Church, Cobholm. The building stands on a corner site in the principal thoroughfare at Cobholm, and has been built from plans prepared by Mr. Sidney Rivett, architect, of South Quay. It is in the simple Perpendicular Gothic style, and is built of red brick to the height of 6ft. 6in. from the ground line, and from thence is in half timbered work to the eaves, which are 13ft. from the floor line. The nave is 55ft. by 31ft. 6in. inside measurement. The chancel chamber is 11ft. 6in. by 11ft., the transept 11ft. by 11ft., and the chancel 23ft. by 17ft. The extreme height of the building is 28ft. The roof is of open timber work. The floor is of pitch pine blocks set on concrete, and the church is built on strong concrete foundations put in at considerable cost, on account of the marshy nature of the soil. The total building contract was for £930 and £52 for choir stall and other furniture. The church is seated to hold about 300 persons. The following were the various contractors:—Mr. A. E. Bonbrickwork and masonry; Mr. A. J. Willimon carpentry, &c.; Mr. W. T. Spencer, plumbin and painting; Mr. W. R. Weyer, of Norwich coloured glazing.

**The Coalbrookdale Company, Limited.**—The premises of this company at 1, Victor Embankment have become too small for the requirements, owing to the growth of their business in London, and they have been compelled to move into larger and more convenient show-rooms at 141, Queen Victoria Street, London, E.C.; the entrance for goods is at 231, Upper Thames Street, E.C.



## Keystones.

**Mr. John Smart, R.S.A.**, a well known painter of Highland landscapes, died at his residence in Edinburgh last Thursday.

**Woodford Diamond Jubilee Hospital** was declared open last Thursday by the Duke of Connaught. Mr. Kingwell Cole and Mr. Kenneth Wood were the architects.

**The Chancel of Holy Trinity Church, Aberystwyth**, was opened last Wednesday. The cost of the erection of the chancel, together with choir stalls, has been £3,000.

**Some of the bronzes ordered by Mr. Rhodes** to adorn the monument over the grave of Allan Wilson's patrol are on view at Earl's Court. They are the work of Mr. Tweed, the Scotch sculptor.

**The New Offices** of the Wandsworth and Clapham Board of Guardians are to be erected according to the designs of Mr. Cecil A. Sharpe, A.R.I.B.A., of 59, Fenchurch Street, London, E.C.

**Mr. Abraham Graham** has just died at the age of sixty-six years. The deceased was the head of the firm of contractors, Messrs. Abraham Graham and Sons, whose business is carried on at Longroyd Bridge.

**The Bury Fire Brigade's New Station** was opened last Wednesday. It is situated on the south side of the School of Art. The station proper measures 35ft. by 20ft. Adjacent is an orderly room, 14ft. by 17ft.

**An Altar Table** of oak has been placed in St. Andrew's Church, Lincoln. The work was carried out by Mr. S. C. Basker, the carving having been executed by Mr. A. J. Tuttell. The architect was Mr. Pratt, of Nottingham.

**A New Church at Denaby**, the foundation stone of which was laid last week, will cost about £3,500, and will accommodate 500 persons. The building will be of local stone, with pitch pine roof and red tiles. Mr. Fowler, Durham, is the architect.

**The Primitive Methodist Chapel at Loddon**, when completed, will seat about 200 persons. It will cost close upon £1,000, and is being erected by Messrs. Chaston and Grimson, of Loddon, Norfolk, from plans by Messrs. Kerridge and Sons, of Wisbech.

**The Foundation Stones** of the New Wesleyan Sunday School at Sileby, Leicestershire, have just been laid. The building, which is being erected by Mr. Sleath, of Rothley, from the plans of Mr. A. E. Sawday, of Leicester, is to seat 400 persons. The material used for the exterior work will be chiefly local bricks.

**A New Church**, to be known as the Church of St. Simon, has been erected in Saltram, Somerset, Paddington. The church, of which the chancel remains to be erected, is a handsome building of red brick and Bath stone dressings. The cost so far has been £4,500, but £2,000 more will be necessary to complete the original designs of the choir and chancel.

**A Bridge over the River Spey**, at Boat Garten, has been erected to take the place of the chain boat, which has hitherto connected the Duthil and Kincardine sides of the river. The bridge, which has a span of 350ft., is of timber, with stone piers and abutments, as designed by Mr. A. Mackenzie, of Kinrossie, and the contractor was Mr. Charles Mackay, of Inverness, the sub-contractor for the mason work being Mr. A. Macpherson, of Newtonmore.

**A Proposal to Keep the Sea on Southend** has been submitted to the Southend Town Council by a London capitalist, who is willing to construct a huge sluice sea wall at a cost of not less than £600,000. The only privilege the promoter seeks is that he shall be allowed to erect extensive generating plant, and use the tidal force for its working, with the idea of supplying the metropolis with electric motive power. The proposer is willing to guarantee that there shall never be less than 3ft. 6in. of water upon any part of the beach, which now remains uncovered for twelve hours out of every twenty-four.

**Aberdeen's New Fire Station**, in King Street, has been erected at a cost of £12,000. It is built of Kemnay granite, the walls rising to a height of about 52ft. A tower 100ft. high is attached to the building.

**A New Town Hall for Oldham** is wanted, and the Corporation have decided to obtain the advice of Mr. A. Waterhouse, F.R.I.B.A., upon the matter. The cost is roughly estimated at £100,000.

**St. Mary's Church, Waterloo Park, Liverpool**, is to be completed by the extension of the church three bays to the west. This will give a further accommodation of 250 sittings, bringing the total up to 800 sittings. The estimated cost is £3,000.

**A Suspension Bridge** is to be erected at Calais at a cost of about £70,000 in order to provide a direct connection between the town and the fine stretch of sands there. It is to be commenced at once. Tenders have been invited from French, English, and American firms.

**The Decoration and Repair of St. James' Church**, Hampstead Road, London, N.W., has been carried out by Messrs. Percy Bacon and Bros. The sanctuary floor has been raised and laid with wooden blocks; the walls have been panelled with carved oak, and a baldachino has been erected over the altar, with paintings of two censing angels above. Outside the church a wrought-iron structure of artistic design has been erected.

**Heckingham Church** has been opened after restoration. The building, which is dedicated to St. Gregory, is an ancient structure of the Norman period. The restoration has taken the form of a thorough renovation of the interior of the church. The old box pews have been replaced by substantial oak benches, new floors laid throughout, and the walls re-coloured. The interior of the roof of the nave has been covered with stained deal, and the exterior, which is of thatch, repaired where necessary. An entirely new roof has been placed over the north aisle. The chancel has been restored, and a new vestry has been provided by the erection of a panelled screen at the west end of the north aisle. The pulpit has also been remodelled. The work of restoration has been carried out by Mr. R. Morriss, of Ditchingham.

**Restoration of St. Edith's, Anwick, Lincolnshire.**—Archæologists will be glad to hear that the greater part of the outer arch and the tracery of the original chancel window heads have been found in the foundations. It will be remembered that the chancel was mutilated by pulling down the eastern bay and reducing the height; and it was during the excavation for the restoration of this bay that this interesting discovery was made. The priest in charge, the Rev. A. H. Staffurth, will be glad to show anyone with archaeological tastes over the church. The plans for the restoration have been drawn by Messrs. Brewell and Baily, Nottingham and Newark, so we feel sure all features of historical interest will be considered, and the old tracery built into the new bay. An appeal is being made for contributions towards the £150 required to complete the chancel.

**The Plans for the Restoration of Paisley Abbey** have been approved of by the Executive Committee. The architect, Dr. R. Rowand Anderson, has arranged for the work to be done in sections, so as to interfere as little as possible with the public worship in the church. The first portion to be undertaken will be the restoration of the transepts and the four great arches of the centre tower, and then will follow the rebuilding of the choir, the foundation and lower walls of which are still intact. The final portion of the work will be the completion of the tower. Some contention has taken place as to whether it was a tower or a spire which adorned the abbey in olden times, but the architect states that the probabilities point to its having been a tower only, finished with a cape and saddle-back, as in the Dundrennan, Sweetheart, and other abbeys. The total cost of the restoration will be about £40,000.

## Under Discussion.

### TRADE UNIONISM.

The subject for discussion at a meeting of the Toynbee Hall Economic Club on Tuesday evening last week, was "The Future of Trade Unionism." The debate was opened by Mr. Francis E. Douglas, who considered the possibility of forming a national federation of trade unions. He believed that the future would see the launching of some great federal scheme, but such a federation should not be looked upon as a menace to trade, but as a safeguard of the interests of the workers and of their future advancement. Some of the schemes which had been put forward might be justly looked upon by employers with suspicion, and any scheme that was a standing menace was not likely to be of advantage either to employers or employed. The scheme put forward last year at the Manchester conference began at the wrong end. Before there could be a comprehensive measure, there must be sectional federation, and the structure must be built up from the bottom and not from the top. The only way to obtain permanent cohesion was by a community of interests, and the federation of kindred trades presented least difficulty. Were such sectional federations first launched, it would be easy to combine them into a national organisation. Mr. R. Bell, secretary of the Amalgamated Society of Railway Servants, fully agreed that there must be federations of kindred trades before there could be a federation of the whole, but instanced the difficulties that had prevented the union of the three organisations of railway men as typical of what might be expected in other trades.

## New Companies.

### Artillery Mansions, Limited.

Messrs. Godden and Co., of 34, Old Jewry, London, E.C., registered this company on May 10th, with a capital of £100,000 in £5 shares. Its object is to acquire, complete, and furnish the hereditaments and premises known as Artillery Mansions, Victoria Street, Westminster, and the land belonging thereto, and for that purpose to adopt and carry into effect an agreement to be made between J. C. Wood of the one part and this company of the other part; to build and maintain maisonettes, flats, or suites; to lay out pleasure grounds, gardens, &c.; to erect kiosks and conservatories; as wine and spirit merchants, hotel keepers, boarding and lodging-house keepers, ice manufacturers. The first subscribers (each one share) are: J. C. Wood, W. Rolfe, J. H. Randall, J. E. C. Wood, W. Godden, J. Calder, and E. Crutchloe. The first directors—of whom there shall be not less than three nor more than six—are W. Rolfe, J. C. Wood, J. E. C. Wood, and J. H. Randall. Qualification, £100. Remuneration, £300 per annum, divisible.

### Carl Hentschel, Limited.

This company has been formed to acquire, and to extend and carry on, the business of photo engravers, designers, electrotypers, and stereotypers carried on by Carl Hentschel and Co., of London, Manchester, and Liverpool. The share capital is £60,000, divided into 39,500 six per cent. cumulative preference shares, and 20,500 ordinary shares of £1 each. The company also acquires half-interest in the Studio of Design, Limited, Effingham House, Arundel Street, London, W.C., the other half being held by Mr. Harry Furniss. The company acquires half the ordinary share capital of the Carl Hentschel Colortype Co., Limited, which was formed at the commencement of this year to work a new colour process, and which owns freehold premises at West Norwood, fitted up with plant and machinery. The purchase price for the businesses has been fixed by the vendors at the sum of £48,000, payable as to £20,500 in ordinary shares issued as fully paid,



and as to the balance, £10,000 in preference shares and £17,500 in cash or preference shares, at the option of the company. Subscriptions are now invited for 29,500 preference shares. The company was registered on May 24th by Martin and Co., of 29, Queen Street, London, E.C. The first directors—of whom there shall be not less than two nor more than seven—are Carl Hentschel, C. Akers and J. Grego. Qualification, £1,000. Remuneration to be fixed by the company.

#### George Freeman, Limited.

This company was registered on May 19th, by H. W. Watkins, of 11, Queen Victoria Street, E.C., with a capital of £50,000 in 49,000 ordinary and 1,000 "B" shares of £1 each. The object of the company is to acquire the business carried on as George Freeman at Gordon House, Frederick Place, Brighton, and at Conway Street, Hove, and to adopt an agreement with F. W. Freeman, and to deal in builders' and contractors' materials, cement, stone, marble, sand, lime, bricks, tiles, terracotta, &c.; to acquire and turn to account any real or personal property, patents, patent rights, and inventions; to construct and maintain rail and tram roads; to carry on the business of a mining and trading company in all its branches; to lay out towns and villages, &c.; to construct gas works, &c., rail and tram roads, &c.; as stock raisers, farmers, and graziers, &c.; stock and share dealers, bankers, and financiers; to undertake and carry out all kinds of agency, guarantee, and trust business. The first subscribers (each one share) are: Mr. and Mrs. T. W. Freeman, Mr. and Mrs. J. G. Williamson, and Messrs. E. Wilson, P. R. Jackson, and W. O. Williamson. The number of directors is to be not less than two nor more than five; the first are F. W. Freeman (chairman and managing director) and J. G. Williamson. Qualifications, £500. Remuneration as fixed by the company.

#### Hedingham Brick Company, Limited.

This company was registered on May 29th, by E. S. Beard, Headgate, Colchester, with a capital of £25,000 in £1 shares. Its object is to acquire and carry on the business of a brick, tile, and drain pipe manufacturer carried on by E. West as the Purls Hill Brick Company at Great Maplestead and Sible Hedingham, both in Essex. The first directors—to number not less than three nor more than five—are E. S. Beard, G. Comer, and W. H. King. Qualification, £100. Registered office: Headgate, Colchester.

#### Midland Brick Company (Wellingborough), Limited.

This company was registered on May 25th by Jordan and Sons, Limited, of 120, Chancery Lane, London, W.C., with a capital of £15,000 in £10 shares, to acquire from G. Hensen certain lands at Wellingborough, Northants, and to manufacture and deal in bricks, tiles, earthenware, fireclay, &c. Registered office, 29, Church Street, Wellingborough, Northants.

### CURRENT PRICES.

FORAGE.			
	£ s. d.	£ s. d.	
Hay, best ... ..	per load	3 0 0	3 10 0
Sainfoin mixture ... ..	do.	3 0 0	3 15 0
Clover, best ... ..	do.	3 10 0	4 5 0
Beans ... ..	per qr.	1 5 6	1 5 9
Straw ... ..	per load	1 4 0	1 16 0

OILS AND PAINTS.			
	per cwt.	£ s. d.	
Castor, French ... ..	per cwt.	1 4 6	1 5 8
Colza, English ... ..	per cwt.	1 3 0	—
Copperas ... ..	per ton	2 0 0	—
Kerosine, water white ... ..	per cwt.	1 5 0	1 15 0
Lard ... ..	per cwt.	1 8 9	1 9 0
Linseed ... ..	per cwt.	0 19 7½	1 0 0
Neatsfoot ... ..	per gal.	0 2 6	0 4 0
Paraffin ... ..	per cwt.	0 10 2	0 19 0
Pitch ... ..	per barrel	0 8 0	0 8 6
Tallow, Town ... ..	per cwt.	1 2 6	1 7 6
Tar, Stockholm ... ..	per barrel	1 6 6	—
Turpentine ... ..	per cwt.	1 13 6	—
Glue ... ..	per cwt.	1 14 0	2 18 6
Lead, white, ground, carbonate per cwt.	per cwt.	0 19 0	—
Do. red ... ..	per cwt.	0 17 0	—
Soda crystals ... ..	per ton	2 15 0	—
Shellac, orange ... ..	per cwt.	3 8 0	—
Do. sticklac ... ..	do.	2 2 6	2 15 0
Pumice stone, ... ..	do.	0 8 9	—

METALS.			
	per ton	£ s. d.	
Copper, sheet, strong ... ..	per ton	88 0 0	—
Iron, bar, Staffs. in London ... ..	do.	6 15 0	8 10 0
Do. Galvanised Corrugated sheet ... ..	do.	12 0 0	12 10 0
Lead, pig, Spanish ... ..	do.	14 3 9	—
Do. English common brands ... ..	do.	14 8 9	—
Do. sheet, English, 6lb. per sq. ft. and upwards ... ..	do.	16 10 0	—
Do. pipe ... ..	do.	17 5 0	—
Nails, cut clasp, sin. to 6in. ... ..	do.	9 0 0	10 0 0
Do. floor brads ... ..	do.	8 15 0	9 15 0
Tin, Foreign ... ..	do.	117 7 6	117 17 6
Do. English ingots ... ..	do.	116 0 0	117 0 0
Zinc, sheets, English ... ..	do.	27 10 0	28 10 0
Do. Vieille Montaigne ... ..	do.	31 0 0	—
Do. Spelter ... ..	do.	28 0 0	28 5 0

TIMBER.			
Soft Woods.			
	per load.	£ s. d.	
Fir, Dantzic and Memel ... ..	per load.	3 0 0	4 0 0
Pine, Quebec Yellow ... ..	do.	4 7 6	6 5 0
Laths, log, Dantzic ... ..	per fath.	4 10 0	5 10 0
Do. Petersburg ... ..	do.	4 0 0	6 10 0
Deals, Archangel 2nd & 1st per P. Std. ... ..	do.	10 15 0	18 10 0
Do. do. 4th & 3rd. ... ..	do.	12 0 0	12 5 0
Do. do. unsorted ... ..	do.	7 5 0	8 5 0
Do. Riga ... ..	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow ... ..	do.	14 15 0	—
Do. do. 2nd ... ..	do.	12 0 0	—
Do. do. Unsorted ... ..	do.	8 0 0	10 10 0
Do. do. White ... ..	do.	7 15 0	9 15 0

	£ s. d.	£
Deals, Swedish ... ..	do.	11 5 0
Do. White Sea ... ..	do.	12 5 0
Do. Quebec Pine, 1st ... ..	do.	16 10 0
Do. do. 2nd ... ..	do.	12 0 0
Do. do. 3rd &c. ... ..	do.	7 0 0
Do. Canadian Spruce, 1st ... ..	do.	9 0 0
Do. do. 3rd & 2nd ... ..	do.	6 5 0
Do. New Brunswick ... ..	do.	7 5 0
Battens, all kinds ... ..	per P. Std.	6 5 0
Flooring, Boards, 1 in. ... ..	per square	0 11 3
Do. prepared, 1st ... ..	do.	0 10 6
Do. 2nd ... ..	do.	0 8 9
Do. 3rd &c. ... ..	do.	0 8 9

#### HARD WOODS.

	per load	£ s. d.	
Ash, Quebec ... ..	per load	3 17 0	4 1 0
Birch, Quebec ... ..	do.	3 12 6	3 1 0
Box, Turkey ... ..	per ton	7 0 0	15 0 0
Cedar, Lin., Cuba ... ..	per ft. sup.	0 0 4	0 0 0
Do. Honduras ... ..	do.	0 0 4	0 0 0
Do. Tobacco ... ..	do.	0 0 4	7 16 0
Elm, Quebec ... ..	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras ... ..	per ft. sup.	0 0 4	27 32 0
Do. African ... ..	do.	0 0 3	9 32 0
Do. St. Domingo ... ..	do.	0 0 4	23 32 0
Do. Tobacco ... ..	do.	0 0 5	15 32 0
Oak, Dantzic and Memel ... ..	per load	3 5 0	3 5 0
Do. Quebec ... ..	do.	4 12 6	5 0 0
Teak, Rangoon, planks ... ..	do.	9 15 0	14 0 0
Wainscot, Riga (Bauk) ... ..	do.	3 15 0	5 1 0
Do. Odessa Crown ... ..	do.	3 15 0	5 1 0
Walnut, American ... ..	per cub. ft.	0 2 6	0 4 0

### COMING EVENTS.

#### Wednesday, June 7.

INSTITUTION OF CIVIL ENGINEERS.—Engineering Conference, to be opened with an address by Mr. W. Preece, President. 10.15 a.m.

ROYAL ARCHAEOLOGICAL INSTITUTE.—(1) The Work of the Chancellor Ferguson, F.S.A., on "Consistory Courts and Consistory Places." (2) Mr. Albert H. Horne, F.S.A., on "Samuel Daniel and Anne Cliff Countess of Pembroke, Dorset, and Montgomerie." 4 p.m.

BRITISH ARCHAEOLOGICAL ASSOCIATION.—(1) Mrs. H. on "Some Medieval Châteaux and Dwellings in France." (2) Mr. Arthur Oliver on "Symbolism." 8 p.m.

BUILDERS' FOREMEN AND CLERKS OF WORKS' INSTITUTION.—Ordinary meeting of the Members. 8 p.m.

INSTITUTE OF SANITARY ENGINEERS (Incorporated). Meeting of the Election Committee at 2.30 p.m.; the General Purposes Committee at 3.30 p.m.

#### Thursday, June 8.

INSTITUTION OF CIVIL ENGINEERS.—Engineering Conference (continued).

SOETY OF ANTIQUARIES.—Meeting at 8.30 p.m.

ROYAL ARCHITECTURAL MUSEUM AND WESTMINSTER SCHOOL OF ART (TUFTON STREET, S.W.)—Annual general meeting. Sir Wyke Bayliss on "The Bog of the Studio—An Address to Art Students on the Question of the Day." 4 p.m.

#### Friday, June 9.

INSTITUTION OF CIVIL ENGINEERS.—Engineering Conference (concluded).

INSTITUTION OF JUNIOR ENGINEERS.—Visit to Bankside Works of the City of London Electric Lighting Company. 6.30 p.m.

#### Monday, June 12.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Business Meeting. Annual Elections. 8 p.m.

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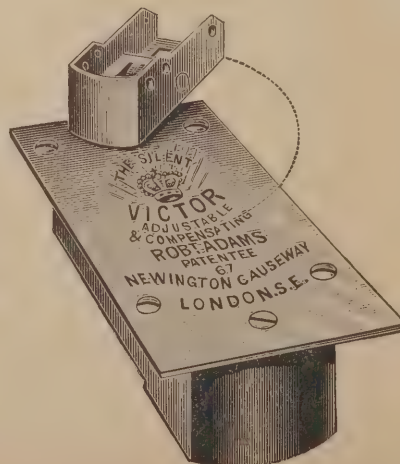
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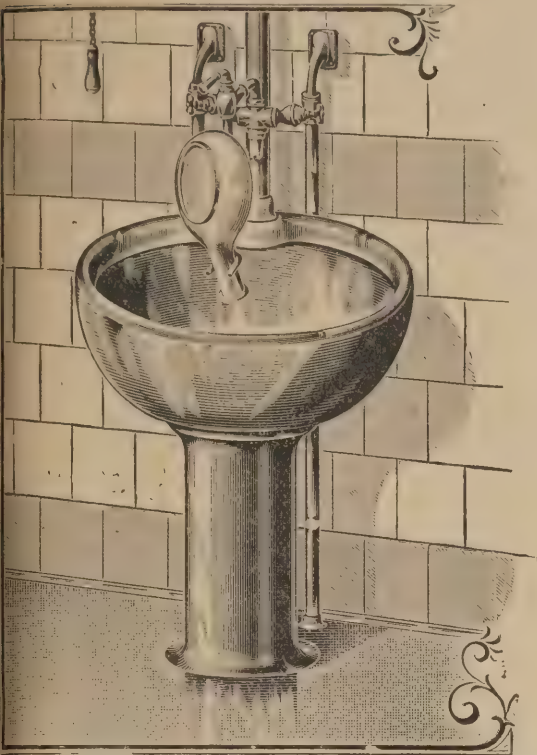
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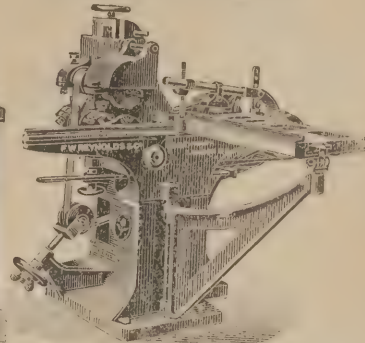
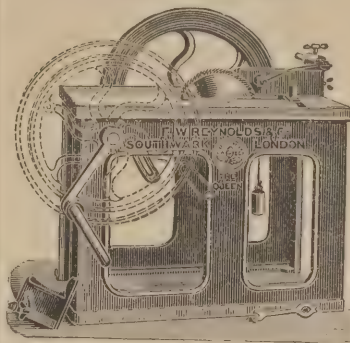
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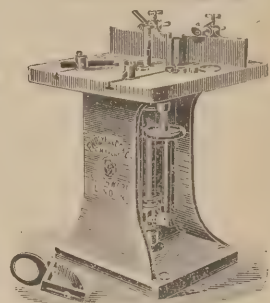
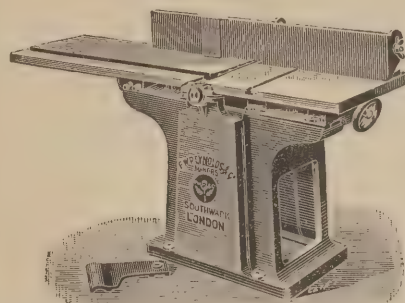
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## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

**ABERDEEN.**—For the erection of schools, Mile End, for the School Board. Mr. A. H. L. Mackinnon, architect, 245, Union-street, Aberdeen. Quantities by architect:—

Masonry.—James Gauld* ...	£5,965 0 0
Carpentry.—Alex. Hall* ...	3,229 0 0
Sluicing.—Adam and Co.* ...	169 15 0
Plumbing.—J. F. Anderson* ...	610 0 0
Painting.—Mason and Son* ...	445 17 9
Plastering.—Stephen and Gibb* ...	968 0 0
Ironwork.—George Bisset* ...	299 13 0
Steelwork.—George Bisset* ...	406 17 11

[All of Aberdeen.]

\*Accepted.

£12,024 3 8

**BARRY (Glam.)**—For additions to school, Clive-road mixed department, for the School Board. Mr. G. A. Birkenhead, architect, St. Mary-street, Cardiff. Quantities by the architect:—

James and Son ...	£3,480 0 0	Jones Bros. ...	2,594 0 0
D. Davies ...	3,345 0 0	Barry Dock* ...	2,894 0 9
A. Richards ...	3,130 0 0	Richards and Evans ...	2,840 0 0
G. Rutter ...	3,116 1 4	Thos. Davies ...	2,700 0 0
T. Evans ...	3,080 4 0	W. Britton ...	2,692 0 0
Price and Sons ...	3,058 0 0	Architect's Esti- mate ...	3,104 0 0
F. Couzens ...	2,998 0 0		
J. Front ...	2,975 0 0		

\*Accepted.

**BECKENHAM.**—For erecting St. Michael's Church, Birkbeck, Beckenham, Kent. Mr. A. H. Hoole, architect, Charing Cross, W.C. Quantities by Mr. J. H. Thomas, Acton, W. Section 1, chancel, vestries, and chapel; section 2, two bays of nave:—

	Section 1.	Section 2.
General Builders, Limited ...	£4,766	£1,726
Stephens, Bastow, and Co., Ltd. ...	4,199	1,797
Bunning and Sons ...	4,149	1,800
P. J. Kick ...	4,018	1,815
F. W. Green (accepted) ...	3,548	1,503

**BOURNEMOUTH.**—For the erection of certain sections of the New Boscombe Hospital. Mr. G. A. Bligh Livesay, architect. Quantities by Messrs. Jennings and Goater:—

George & Hard- ing ...	£10,333 0 0	Hoare and Sons ...	£9,661 0 0
Kingerlee ...	9,902 19 4	Jenkins & Sons ...	9,179 0 0
Bastow and Co. ...	9,716 0 0	Miller & Sons* ...	8,940 0 0

\*Accepted with operation block omitted.

**CARDIFF.**—For the erection of shops and offices in James-street, Bute Docks, for Messrs. Rose and Co., engineers. Mr. Edgar G. C. Down, A.R.I.B.A., architect, Queen-street, Cardiff:—

T. Small ...	£2,618 0 0	Geo. Griffiths ...	£2,474 0 0
Knox and Wells ...	2,550 0 0	James Allen ...	2,439 18 9
Siepton & Sons ...	2,534 10 0	Rees and Thomas ...	2,399 0 0
Jones Brothers ...	2,515 0 0	W. Thomas & Co. ...	2,367 0 0
W. Symonds & Co. ...	2,515 0 0	E. R. Evans Bros. ...	2,332 0 0
Lattey and Co. ...	2,487 0 0	E. Turner & Sons* ...	2,296 0 0
Cox and Bardo ...	2,483 0 0	Blackler Bros. ...	2,292 13 8

\*Accepted.

**CHESTER.**—For the erection of public baths, Union street, for the Corporation. Messrs. Douglas and Minshall, architects, Abbey Square, Chester. Quantities by the architects:—

Hughes and Stirling ...	£12,230	John Mayers ...	£11,654
Woods and Son ...	12,170	Jones and Son ...	11,600
Parker Bros. ...	11,947	W. W. Freeman, Chester* ...	11,600
Hamilton and Son ...	11,880		

\*Accepted.

**CORK.**—For additions to Myrtle Hill House, Cork. Mr. Arthur Hill, architect, Cork:—

T. A. O'Connell ...	£1,577	D. Hegarty ...	£1,300
E. and P. O'Flynn ...	1,412	Delany and Co. ...	1,100
S. Hill ...	1,350		

**HANDSWORTH (Staffs.).**—For the erection of new Fire Brigade Station, &c., for the Urban District Council. Mr. E. Kenworthy, Surveyor to the Council:—

George Webb, Handsworth* ...	£2,026
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\*Accepted.

**HERNE BAY.**—For erecting eleven villa residences in Albany-drive. Mr. J. Huxtable, architect, 6, Clarence-road, Sea-street, Herne Bay:—

Marchant and Hirst ...	£5,520	West and Pigott ...	£4,625
C. W. Welby ...	4,992		

**LONDON.**—For the erection of premises in Johnson's-court, Fleet-street, for Mr. R. S. Cartwright:—

J. Marsland ...	£9,965	Rider and Son ...	£9,810
Howell J. Williams ...	9,876	Turtle and Appleton ...	9,164
Hornsey ...	9,875	Newton and Sons ...	9,071
Dove Bros. ...	9,845	Burman and Sons ...	8,965

**KINGSTON-ON-THAMES.**—For erecting a female infirmary and new mortuary at the workhouse, Kingston-on-Thames. Mr. W. B. Hope, architect and surveyor:—

Whitehead and Co., Limited ...	£30,680 0 0
Gough and Co. ...	29,156 0 0
E. E. Nightingale ...	28,755 0 0
Turtle and Appleton ...	27,350 0 0
C. J. Saunders ...	27,000 0 0
Goddard and Sons ...	26,070 0 0
Martin Wells and Co. ...	25,866 0 0
Pattinson and Sons ...	25,863 0 0
Stephens, Bastow, and Co., Limited ...	25,798 0 0
Merredew and Wort ...	24,900 0 0
Shelbourne and Co. ...	23,950 14 7

**LONDON.**—For rebuilding nine houses, with shops and workshops, Sidney Street, Whitechapel, E., for Mr. Charles Martin. Mr. E. H. Abbott, architect, 6, Warwick Court, Holborn, W.C. Quantities by Mr. A. Johnson, Imperial Buildings, Ludgate Circus, E.C.:—

A. Fordham ...	£6,990	Balaam Bros. ...	£5,750
S. Salt ...	6,938	A. E. Symes ...	5,698
Wells and Son ...	6,517	Thos. Grant ...	5,500
Wall and Co. ...	5,811	R. and E. Evans ...	5,498

**LONDON.**—For work required to be executed at Woodberry Down Chapel, Seven Sisters-road, N. Messrs. W. Bradbear and Co., architects and surveyors, Canonbury Station, N.:—

	General Estimate.	External Pointing.	Total.
Crowe ...	£1,304 0	£495 0 0	£1,799 0 0
Pearse ...	970 0	180 0 0	1,100 0 0
Campbell, Smith, and Co. ...	684 0	379 0 0	1,063 0 0
Richards ...	691 0	356 0 0	1,047 0 0
Simpson and Cove ...	762 0	267 0 0	1,029 0 0
Wilson ...	660 10	396 0 0	960 10 0
Stapleton ...	705 0	237 0 0	942 0 0
Buckeridge ...	649 0	246 0 0	895 0 0
Groves ...	517 0	319 0 0	836 0 0
Holliday and Green-wood ...	565 0	260 0 0	825 0 0
Britton ...	650 0	160 0 0	810 0 0
Bradford ...	548 0	240 0 0	788 0 0
Kelsey ...	363 14	302 5 6	665 19 6
Woolaston ...	549 12	—	—
Stewart ...	494 0	54 15 0	548 15 0
Dudley ...	305 0	125 0 0	430 0 0

**LONDON.**—For additions to "Springcroft," Hornsey lane, N. Mr. Alfred Conder, architect, Palace Chambers, 9, Bridge-street, Westminster:—

E. Toms ...	£1,142	Akers and Co.* ...	£911
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\*Accepted.

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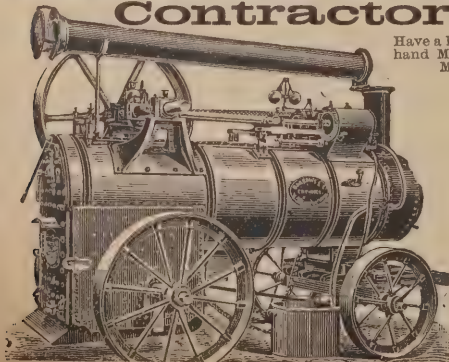
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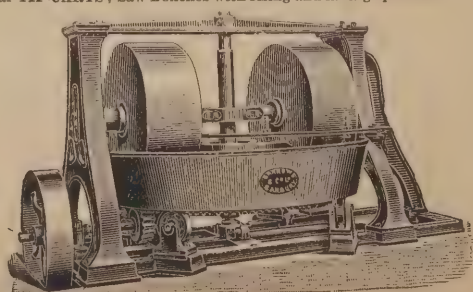
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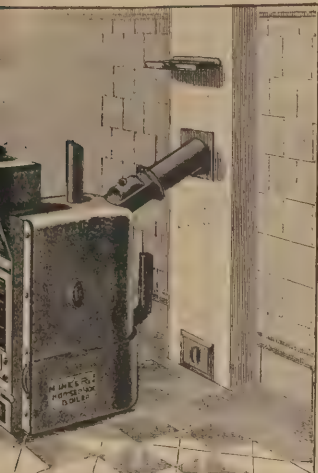
**ONDONDERRY.**—For alterations to premises, for Messrs. Geo. Austin and Co., Ferryquay-street and Diamond, Londonderry. Messrs. Forman and Aston, architects, Castle-street, Londonderry. —  
Dickson ... £2,498 | McKee and Son, Dunduff ... £2,000  
W. Stewart ... 2,375 | gannon\* ...  
Colhoun ... 2,200 | \*Accepted.  
**ONDONDERRY.**—For additions to Ebrington Factory, Messrs. Young and Rochester. Mr. D. Conroy, architect, 2, Bishop-street, Londonderry. Quantities by Mr. J. McCaffrey ... £2,600 12 | R. Colhoun, Strand-ke and Sons ... 2,350 0 | road, Londonderry\* £2,300  
\*Accepted.  
**XFORD.**—For proposed additions to St. John's College, Oxford. Mr. E. P. Warren, architect, Westminster, S.W. Quantities by Mr. J. B. Lofting, Westminster, S.W. —  
Simpson and Co. ... £7,330 | Simpson and Co. ... £6,117  
phens, Bastow and Co. ... 6,098 | Holloway Bros. ... 6,098  
S. Limited ... 6,098 | Sim and Co. ... 5,977  
nell and Sons ... 6,456 | Bensfield and Loxley ... 5,910  
**XFORD.**—For additions and alterations to Athelston College, Summertown, Oxford, for Mr. E. J. Brooks. Mr. Herbert Quinton, architect and surveyor, 15, Magdalen-st., Oxford. —  
kins Bros. ... £505 | G. Innes\* ... £340  
erle and Sons ... 474 | \*Accepted.  
**XFORD.**—For additions and alterations to No. 10, Lincolns-road, Oxford, for Mr. P. A. Steedman, M.R.C.S. Herbert Quinton, architect and surveyor, 15, Magdalen-st., Oxford. —  
att and Son ... £380 | Wilkins Bros. ... £317  
utchins ... 358 | J. Wooldridge\* ... 314  
erle and Sons ... 380 | \*Accepted.  
**ALTASH (Cornwall).**—For the erection of stabling, and extension of quay, for Messrs. Bennett and Palmer,

Mr. Edgar M. Leest, architect, Public Hall Chambers, Devonport. —  
J. Painter ... £648 0  
Taylor and Mutton (Saltash)\* ... 557 10  
\*Accepted.  
**SOUTH SHIELDS.**—For alterations to business premises for Messrs. Redmayne and Walker, Ocean Road, South Shields. Henry Grieves, architect, Albany Chambers, South Shields. —  
W. I. Robertson, South Shields ... £263 7 1 | S. Sheriff, South Shields ... £220 0 0  
A. Ross, South Shields ... 255 0 0 | M. Hall, Jun.\* ... 210 0 0  
Shields ... 255 0 0 | \*Accepted.  
For Marble Work.  
\*J. Angove, Newcastle ... £74 10 0  
Tilers' Work.  
\*H. Walker and Son, Newcastle ... £47 18 6  
\*Accepted.  
**SOUTHEAD-ON-SEA.**—For proposed house, Victoria Avenue, Southend-on-Sea, for Mr. S. Parrish. Messrs. Thompson and Greenhalgh, architects, Southend-on-Sea. —  
A. E. Symes ... £1,529 | Shelbourne and Co. ... £1,422  
F. Dupont ... 1,490 | F. E. Woodhams ... 1,392  
Stewart and Co. ... 1,485 | Davis and Leane\* ... 1,328  
\*Accepted.  
**TROWBRIDGE.**—For the erection of the first portion of a technical school at Trowbridge, Wilts, for the Committee. Mr. Thos. Davison, architect, London. Quantities by Mr. Geo. Fleetwood, F.S.I., 3, New-court, Lincoln's-inn, London. —  
Stephens, Bastow, and Co., Ltd. ... £5,712 0 | Hayward and Wooster ... £5,090 0 0  
J. Williams ... 5,459 0 | G. Moore ... 4,898 18 11  
Long and Sons ... 5,130 0 | Ed. Linzey ... 4,716 0 0  
Wm. Webb ... 4,638 9 0

CONTRACTS OPEN.

**ISLE of THANET UNION.**  
**TO BUILDERS AND CONTRACTORS.**  
The Guardians propose to ERECT COTTAGE HOMES BUILDINGS at Manstone, and to make certain ADDITIONS to the School at that place.  
Detail plans and specifications may be seen at the Board Room, Minster, and also at the offices of the Architect, Mr. LEONARD GRANT, High-street, Sittingbourne, from June 7th.  
Bills of quantities and forms of Tender may be obtained from Mr. GRANT, on payment of £3 3s. which will be returned to unsuccessful competitors.  
Tenders, marked on covers "Cottage Homes," must reach me through the post, by WEDNESDAY, JUNE 21st, next.  
The Guardians do not bind themselves to accept the lowest or any Tender. By order,  
CHAS. TAYLOR, Clerk.  
Board Room, Minster, Ramsgate.  
May 31st, 1899.

**HERTFORDSHIRE COUNTY LUNATIC ASYLUM at HILL END, near ST. ALBANS.**  
**TO BUILDERS AND CONTRACTORS.**  
The Visiting Committee appointed by the Hertfordshire County Council to provide Asylum Accommodation invite TENDERS for the ERECTION of FARM



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Applications for bills of quantities, accompanied by a deposit of £2, which will be returned on receipt of a bona-fide Tender, to be made to the Architect of the Committee, GEORGE T. HINE, Esq., F.R.I.B.A., 35, Parliament-street, Westminster.

Tenders, addressed to the Clerk to the Committee of Visitors, to be delivered at the Hill End Asylum, near St. Albans, not later than TEN a.m., on TUESDAY, JUNE, 27th, 1899.

N.B.—Neither the lowest nor any Tender will necessarily be accepted.

C. E. LONGMORE,

Clerk of the Hertfordshire County Council.

Clerk of the Peace Office,

Hertford.

May 18th, 1899.

## CITY OF SHEFFIELD.

The City Hospitals Committee of the Corporation invite TENDERS for the whole, or any portion, of the work required in the ERECTION OF INFECTIOUS DISEASES HOSPITAL, at Lodge Moor, Sheffield, comprising Six Pavilions for Scarlet Fever Patients, Two Isolation Pavilions, One Receiving Pavilion, Administrative Buildings, Nurses and Maids' Homes, Water Tower, &c.

Also Tenders for HEATING APPARATUS and for COOKING APPARATUS, &c.

Drawings and specifications may be seen, and bills of quantities obtained, on application to the Architects, Messrs. FLOCKTON, GIBBS, and FLOCKTON, 15, St. James's-row, Sheffield, on and after WEDNESDAY, JUNE 7th.

Tenders, endorsed "Lodge Moor Hospital," to be sent in not later than JUNE 20th, 1899, addressed the Chairman and Committee, &c., Hospitals Committee, Town Hall, Sheffield.

The Committee do not bind themselves to accept the lowest or any Tender.

By order,

HENRY SAYER,

Town Clerk.

Town Clerk's Office,

Town Hall, Sheffield,

May 25, 1899.

N.B.—The contract will comprise the fair wages and conditions of labour clause which has been adopted by the Sheffield Corporation, particulars of which will appear in the general conditions.

## BECKENHAM URBAN DISTRICT COUNCIL. TECHNICAL INSTITUTE AND PUBLIC SWIMMING BATHS. SEPARATE CONTRACTS. TO BUILDERS.

The Beckenham Urban District Council invite TENDERS for the ERECTION of (1) a TECHNICAL INSTITUTE, and (2) PUBLIC SWIMMING BATHS, including a covered bath, 100ft. by 30ft.; an open air bath, 80ft. by 25ft.; fifteen slipper baths, together with administrative laundry, boiler house, &c.

The site of the proposed buildings is in Beckenham-road, near Clock House Station.

Drawings may be seen, and bills of quantities, specifications, and forms of Tender may be obtained on deposit of a £5 Bank of England note, which will be returned on receipt of a bona-fide Tender.

A clause will be inserted in the contract providing that the contractor shall pay to the workmen employed

in the execution of the work, the wages generally accepted as current for workmen engaged on similar work in the district.

Tenders, duly sealed, and endorsed "Tenders for Institute and Baths," to reach the undersigned not later than FOUR p.m. on MONDAY, JUNE 19th, 1899.

The Council do not bind themselves to accept the lowest or any Tender.

By order,

F. STEVENS,

Clerk of the Council.

May 17th, 1899.

## CROYDON SCHOOL BOARD. NOTICE TO BUILDERS.

Builders who are desirous of TENDERING for the ERECTION OF SCHOOLS, for 1220 Children with Central Hall, in Ecclesbourne-road, Thornton Heath Croydon, in accordance with the plans and specification prepared by Mr. H. CARTER PEGG, A.R.I.B.A., Architect, of 6, Sudbury-road, Thornton Heath, are requested to send their names and addresses to me, the undersigned, not later than TUESDAY, the 13th inst.

Quantities will be supplied on payment of Five Guineas, which will be returned on receipt of a bona-fide Tender.

A declaration will be inserted in the Tender and contract stating that the contractors will not sublet the work, nor any portion thereof, without the consent of the Board.

The Board does not bind itself to accept the lowest or any Tender.

By order,

BARROW RULE,

Clerk.

School Board Office,

Katherine-street, Croydon,

June 1st, 1899.



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*2, Army and Navy Mansions, Victoria Street, London, S.W.*



# CANADIAN NOTES.

## II.—THE PORTLAND CEMENT INDUSTRY IN AMERICA.

By J. RAWSON GARDINER, of Montreal.

IN the article under this heading which appeared last week, mention was made of the manner in which the American manufacturer was forcing his goods into the market. Let us take Portland cement, and see what is being done on the American continent in regard to this article, which is of so much importance to both engineer and architect.

The market for Portland cement in the United States has been growing very steadily, and at the same time has been undergoing a great change, as will be seen by the following figures:—

Portland cement made in United States	1891 barrels.	1894 barrels.	1897 barrels.
States	455,000	798,000	2,678,000
Imported	2,783,000	2,638,000	2,090,000
	3,243,000	3,436,000	4,768,000

These figures show that while the imports have been decreasing slightly the amount produced in the United States has been increasing very rapidly, until in 1897 the home-made article exceeded the imported. Of these 2,678,000 barrels 75 per cent. were manufactured in the Lehigh valley district by some five or six manufactories. Of the 2,090,000 barrels imported, Germany has nearly 50 per cent. to her credit, England and Belgium about equal quantities, and France completes the list.

These five or six American manufacturers have been improving the quality of their cement, so that at the present time they are trying to compete against well-known German brands, such as the "Dykerhoff," "Germania," and "Mannheimer" brands. It was to the German that the American turned for his methods of manufacture, as it was the German who held the palm for high-grade cements. This point of recent years is rarely disputed, although now the American manufacturer is claiming that his cement is at least equal to the German standard.

English cement seems to be gradually but surely growing in disfavour in the American market, whereas, ten years ago, English cement held the place taken now by the German article.

This, no doubt, has been caused, to a large extent, by the newer works and machinery used by the Germans, which are turning out a finer and more uniform product than that turned out by the majority of English firms. The kilns used by the Germans are usually "continuous," on somewhat the same principle as the well-known "Hoffman" brick kiln; whereas, the English, and formerly nearly all American firms, used a modified lime kiln.

To show somewhat the feeling in the United States in respect to German versus English cements, let us take the following quotation from a well-known American architectural paper:

"The principal reason the English manufacturers lost their grip on this market was due to the question of fineness. Until quite recently they stubbornly refused to meet the importers' demand and furnish a hard-burned cement, ground fine enough to meet the requirements of the engineering profession in this country. To the German manufacturers is due the credit of educating this country (the United States) up to requiring a finely ground cement, but it must be said to the credit of the American Portland cement manufacturers that they have been prompt in meeting this issue."

Now let us compare some tests made for the Engineering Commission of the District of Columbia, which shows—

Average of 6 German cements	Passed a No. 100 sieve.
" 5 American "	92.8 per cent.
" 2 English "	93.1 "
	83.0 "

Or again some tests made by the Survey Department of Philadelphia in 1893.

	GERMAN.	Passed No. 50 sieve.
"Dykerhoff" .....	...	99.52 per cent.
"Germania" .....	...	100.00 "
"Mannheimer" .....	...	99.42 "
	ENGLISH.	
"Brooks Shoobridge Co." .....	...	96.25 "
"Burham" .....	...	95.58 "
"Gostling" .....	...	94.00 "
	AMERICAN.	
"Saylor's" .....	...	100.00 "
"Whitakers" .....	...	99.80 "
"Egypt" .....	...	99.21 "
	BELGIUM.	
"Dagger" .....	...	99.25 "
"Bell" .....	...	98.13 "

These quotations and tests show fairly well how English cement is looked upon by the American engineer when compared with high grade German, and, of latter years, the best American grades. American Portland cement is no doubt going ahead, as they have splendid raw material and the ingenuity to turn the knowledge acquired by the German to suit their needs. The rapidity with which it has pushed itself to the fore in the last four years is phenomenal. Here are two tests taken from the "Whitaker" deposit and the "Glen Falls" deposit:—

	"Whitaker."	"Glen Falls."
Silica .....	14.44	21.50
Carb. Lime .....	75.17	63.50
Alumina, Sesquioxide of Iron .....	5.91	10.50
Magnesia .....	.77	1.80

In both cases the deposit is very uniform, with hardly any perceptible change in the analysis, and both lists show a very high percentage of lime.

In respect to Canada, the following returns give a fairly good idea of the Portland cement market:—

	1892.	1894.	1896.
Great Britain .....	216,000	190,000	134,000
Germany .....	11,000	2,000	15,000
Belgium .....	22,000	60,000	79,000
United States .....	23,000	33,000	22,000
France .....	2,000	4,000	11,000

The above figures show that English cement holds the Canadian market, although even here the amount is on the decrease. There are some four or five manufacturers in Canada, the most prominent being in Ontario. The industry shows signs of turning out a high grade of cement, and usually passes a very good test for fineness and also for strength. The following is a clipping from a Montreal paper of March, 1899: "We quote spot prices, ex store, as follows: English brands, 2dols. 35cents, to 2dols. 45cents; German, 2dols. 50cents, to 2dols. 60cents; and Belgian, 1dol. 90cents, to 2dols. 10cents."

Of the countries in South America importing cement the chief are Brazil, Chili, and Venezuela. Brazil imports from Germany alone some 200,000 barrels, while Chili imports about 70,000 barrels.

The above notes will give those interested in the Portland cement industry some idea of "things as they are" on this side of the Atlantic, and they will be able to draw their own deductions therefrom.

**The Bradford Rural District Council** held a meeting last week, at which a letter from the Local Government Board, inclosing formal sanction to the borrowing of £1,760 for works of water supply for the parish of Gotham, was read. The sanction was given conditionally that all the pipes be laid with a covering of at least three feet, measuring from the top of the pipe to the surface of the ground.

**Street-Paving at Goole.**—An inquiry was held at Goole last week by a Local Government Board Inspector, respecting the application of the Goole Urban District Council to borrow £10,700 for purposes of wood and granite road making. It was stated that the Council had decided that wood paving and granite would be better than either tar macadam or plain macadamised road. The streets to be paved are Market Square, Boothferry Road, Dutch River Bridge, Bridge Street, and Marmers Street.

# THE FAWCETT FIRE-RESISTING CONSTRUCTION.

THE destruction of life and property by fire is one of those calamities which we look forward to with dread, combined with an amount of expectancy savouring almost of fatalism; yet the safeguarding of our dwellings, business premises, and public buildings, by the adoption of some system of fire-resisting construction is a matter in which progress is very slow. One of our national characteristics being extreme conservatism and cautiousness, we oftentimes seem to lag behind in the march of progress, especially when keeping abreast of it implies the adoption of something which savours of being new-fangled, untried, or unproved. But if we move slowly perhaps we move none the less surely, and when we find the Government somewhat extensively adopting for all their new and important buildings a patented system of fire-resisting construction, the obvious inference is that that special system has points of merit which raise it above the level of mediocrity.

In all systems of fireproof construction iron or steel is largely employed; but, as is well known, when subjected to high temperatures both become so weakened as to be unable to overcome the strain and stress of the load they bear, and, consequently, collapse. Any system, therefore, which affords thorough protection to the supporting girders and joists, at once gives an additional and a very high factor of safety. Fawcett's system fully accomplishes this by not only entirely casing all steel, but also by providing continuous ventilation throughout the floor, wall, or ceiling.

These protective casings (see Fig. 1), are technically termed "lintels;" they are made of red chimney-pot earth, and are hollow from end to end. Each end is notched to fit over the lower flanges of the joists, and the abutting ends of adjacent bays of lintels form an air space from end to end beneath the flange of each joist (see Fig. 2, which is a longitudinal section through the centre of abutting bays of lintels), so that a Fawcett floor is thoroughly ventilated in both directions. Another feature of this system, as will be seen by reference to Fig. 3—a cross section through the lintels—is that a perfectly flat ceiling is obtained, the underside of each lintel being flat and being provided with longitudinal dovetail grooves to afford a key for the plastering. The steel framework having been laid, with the joists arranged 2ft. from centre to centre, the lintels (previously sorted to exact length) are rapidly slid into position, the diagonal method employed for fixing them facilitating this operation, and also allowing of very close jointing. Lintels and steel framework are then covered in with concrete, composed of the ash and clinker from steam boilers, passed through a riddle and mixed with Portland cement. This mixture provides another fireproofing element, as the concrete contains nothing that is in any way combustible, and at the same time it possesses all the good qualities of breeze concrete by affording a very secure fixing to whatever is nailed to it; and whilst it is harder than the latter material, it is just as readily cut away when necessary.

The system referred to is that invented in the year 1888 by Mr. Mark Fawcett (Mark Fawcett and Co., 50, Queen Anne's Gate, Westminster), its initial adoption into Government work being in connection with the National Portrait Gallery in 1891, since when it has also been introduced into the Houses of Parliament, Buckingham Palace, Marlborough House, South Kensington Museum, the Public Record Office, the General Post Office, the Patent Office, the Royal Mint, the New Admiralty Buildings, and other Government buildings. In addition to this extensive official use, the system has been adopted in upwards of 2000 other buildings of all descriptions in the United Kingdom and in the U.S.A.

Now for the "proof of the pudding." Messrs. Fawcett claim that no building in which their system has been adopted, and in which a fire has occurred, has been destroyed or seriously



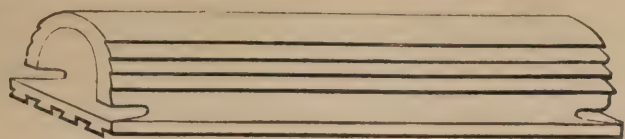


FIG. 1.

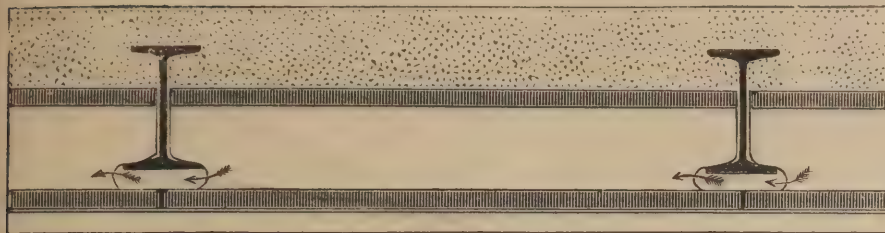


FIG. 2.

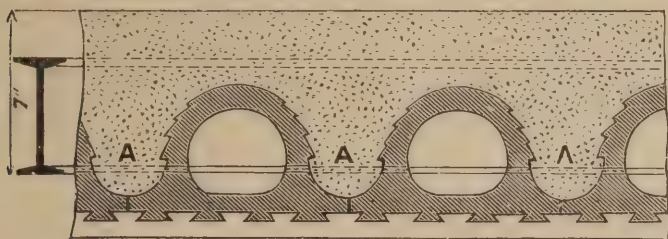


FIG. 3.

damaged. The report of a test by the building department of the City of New York is also instructive. A room 11ft. by 14ft. by 10ft. high, with walls 12in. thick of common brick in mortar, was covered with a "Fawcett" floor loaded to 150lb. per square foot over the whole area. A fire was started at 9.33 a.m., and continued until 12.16 p.m.—the heat reaching as high as 2200 deg. F.—when a stream of water at 60lb. pressure was turned on for fourteen minutes. The report terminates: "At no time did the fire penetrate through the floor, nor did the fire stream cut through at any point."

Recently, by invitation, we had the pleasure of inspecting Block II. of the new Admiralty Buildings, now approaching completion at Spring Gardens, Charing Cross. This block of buildings—to all intents and purposes a replica of Block I. (commenced in 1892, and now in use)—offers plenty of scope for the display of constructive ingenuity in adapting a fire-proofing system to particular needs. Owing to the natural characteristics of the site—the name suggesting the presence of water—the floor of the basement is hollow, and in construction is treated precisely as all the other floors of the building. Except for the brickwork shell the whole block is practically—to coin a word—"Fawcettized" throughout, not only the floor, but the roof and nearly all the partition walls being fire-proofed on the Fawcett system. Of the adaptability of the "boiler-ash" concrete to fixing purposes we found ample evidence; the Westmoreland Green slating on the front sloping portion of the roof is nailed direct to it, as also are the rolls for the lead on the inner almost flat portion; the metal also is dressed to it without any preparation. The plumbers, too, seemed to have discovered the advantage of being able to secure their tanks without the intervention of plugs and blocks, the presence of the latter being so noticeable where piping had to be carried across and secured to the face of brickwork. Fig. 4 is a photographic reproduction of a portion of the Admiralty Buildings, showing the work in progress of fixing the lintels and filling in over them with concrete.

"Good wine needs no bush," and, possibly, Fawcett's system of fire-resisting construction may stand in no need of laudation by us; still, we have pleasure in introducing to the notice of our readers something which, evidently, has merits above the average.

## THE DISPUTE IN THE BUILDING TRADES.

### TERMS OF SETTLEMENT.

THE dispute was satisfactorily settled at the meeting, on May 30th, between the representatives of the two associations, and the men are to resume work on or about June 12th, on terms which seem to meet the wishes of both parties. In considering the conditions of the settlement, the masters were certainly ungrudging in their concessions. Many would have held them justified in holding out much longer against some of the demands made of them, but they probably felt that the sooner such an unpleasant matter ended the better, and therefore met the men in a very friendly spirit.

At the meeting, which took place at the Salisbury Hotel, Fleet Street, E.C., under the chairmanship of the editor of the "Daily News," Mr. E. T. Cook, the following gentlemen represented the National Association of Master Builders:—Alderman Holdsworth, president; Mr. B. I. Greenwood, London; Mr. C. W. Green, Liverpool; Mr. Geo. Nichols,

Leicester; Mr. James Higson, Manchester; and Mr. J. W. Sugden, president of the National Master Plasterers' Association, Bradford. The representatives of the Operative Plasterers were Mr. Mark Jones, president; Mr. M. Deller, secretary; Mr. Dan Hennessy, London; Mr. A. McLeon, Newcastle-on-Tyne; Mr. Geo. Jackson, Manchester; and Mr. Henry Duckett, Birmingham. There were also present Mr. J. A. Hassal, Secretary of the National Association of Master Builders, and Mr. Clement Edwards.

The questions concerning compelling foremen to join the Union, boycotting and black-listing, demarcation, and refusal by the men to work on buildings where some of the workmen employed may not belong to a trade union have been settled according to the basis stated in our issue of last week. It was agreed that the question of the limitation of apprentices should be referred to a special Joint Committee of both sides to draw up working rules to govern the matter. The conference was of opinion that the difficulty with regard to the proportion of apprentices could be best solved by every apprentice being legally bound. At the conclusion of the conference, the Joint Committee of the two associations, which was appointed to deal with the apprenticeship question, came to a decision on two of the points under this heading. It was agreed that no employer should engage any additional apprentices whilst the number of his apprentices exceeded one-fourth of the number of journeymen plasterers then employed by him. It was also decided that all apprentices should be legally bound, but as the delegates could not agree upon the age at which apprentices should begin work, the matter is to be further discussed at a subsequent meeting of the committee. The employers maintained the right to apprentice boys at any age, but the operatives insisted that a boy should not be bound above the age of sixteen years. It was provisionally agreed that the lock-out order should be withdrawn on June 12th.

At York last Thursday the 75 per cent. of the bricklayers who had not been locked-out by the suggestion of the Yorkshire Federation took the matter into their own hands and struck work. On the same day the lock-out of 25 per cent. of the union men in the building trades in Scarborough became effective; this step affects about sixty men.

**Surveyors' Institution.**—At the annual meeting of the Surveyors' Institution last week Mr. T. M. Rickman was appointed the President for the ensuing year. Mr. Gate gained the Institution Prize, Mr. Arthur George Bradshaw the Special Prize of Ten Guineas, Mr. Geo. Freeman the Penfold Silver Medal and the Driver Prize, Mr. Sidney Arthur Smith the Penfold Gold Medal, Mr. Bowden the Crawler Prize, and Mr. A. Neate the Students' Prize.



FIG. 4.



## Masters and Men.

**Paisley Labourers** have gained the advance from 5½d. to 6d. per hour for which they struck work.

**The Chester Bricklayers' Labourers** to the number of about 150 have struck for an advance of wages from 5½d. to 6d.

**Edinburgh and Leith Joiners' Strike.**—Thirty-three masters, employing about 380 men, have accepted the men's terms.

**The Masters who have conceded** to the men's demands in connection with the Edinburgh plumbers' strike now number fifty-three.

**The Strike in Sunderland** of builders' labourers has resulted in the men accepting 6½d. per hour, and time and a quarter for overtime.

**Bolton Stonemasons** went on strike last Wednesday for an increase of ½d. per hour and an alteration in the apprentice and overtime rules.

**The Joiners at Fleetwood** have struck for an advance of ½d. per hour, which will bring their wage up to 8½d. About 150 men came out last Thursday.

**Arbroath Masons** have gone on strike for an increase of wages from 8d. to 8½d. per hour. At a mass meeting it was stated that Mr. Adamson, the contractor for the new post office, had signed the by-laws, and the whole of his men have remained at work.

**The Lock-out in Denmark** still continues. The employers of Christiania, Malmö, and Gothenburg, according to telegrams received from those places, have decided not to give employment to those who are out of work owing to the lock-out in Denmark.

**Strike at Lowestoft.**—Between 200 and 300 carpenters, joiners, bricklayers, and labourers went on strike last Wednesday. The men demanded 1½d. per hour advance for artisans, but the masters would only agree to ½d. advance. Another point in dispute is that the men desire that overtime shall commence at the conclusion of the "ordinary" day's work, but the masters demand that it shall not commence until 7 p.m. Two firms in Lowestoft are paying the sum demanded, viz., 7½d. per hour.

**Newport Building Trade.**—In answer to an inquiry made by the secretary of the National Building Trades' Federation, the secretary of the Master Builders' Association states that the latter are offering employment at the following wages: 8d. per hour until December 1st, 1899, when the figure will be 8½d. per hour, and there will be a new code of rules. Labourers will receive 5½d. on the same date. The bricklayers alone have accepted these terms. The Newport Master Builders' Association have established an office to receive applications from men for employment.

**Labour Disputes in Germany.**—A Bill has been submitted to the Reichstag for the protection of the position of workmen in industries. The measure visits the use of physical force, threats, defamation, or boycott in labour questions with imprisonment not exceeding one year, or, in case of extenuating circumstances, a fine not exceeding 1,000 marks. Should, in consequence of the unyielding disposition of the parties approached, a strike or lock-out have been forcibly brought about, or should, from the same cause, the security of the empire or of a federal state have been jeopardised, or life and property have become endangered, the penalty shall be hard labour not exceeding three years, except in the case of the ringleaders, for whom the maximum penalty shall be five years.

## Engineering Notes.

**The New Board Schools, Llanelly,** have been fitted with the latest improved hot water heating apparatus by John King Limited, engineers, Liverpool.

**Railway Extension in Donegal.**—Mr. Gerard Balfour, accompanied by Lady Betty Balfour, visited Cardonagh, co. Donegal, on May 23rd, for the purpose of cutting the first sod of a new railway to be constructed between Cardonagh and Buncrava, which will open up the populous peninsular of Inishowen.

**Liverpool to Manchester in Twenty Minutes.**—The joint committee of Liverpool and Manchester representatives, who have been considering the scheme by Mr. Behr for establishing an electric express railway on the mono-rail principal between Liverpool and Manchester, have reported favourably. A meeting of the committee was held last Wednesday, at which a resolution was adopted setting forth that some such scheme would be of public advantage. The estimated cost of construction is £1,500,000.

## Builders' Notes.

**The Acomb Board Schools, York,** are being warmed and ventilated by means of Shorland's patent Manchester grates and patent Manchester stoves, supplied by Messrs. E. H. Shorland and Brother, of Manchester.

**A Mechanical Bricklayer.**—A consulting engineer of Birmingham, and his son, have just secured British and international protection under the Patent Acts for an invention entitled "a mechanical bricklayer," for use in automatically laying, cementing, and levelling bricks, slabs, stones, and the like, in buildings of every description. The inventors expect to save two thirds of the time occupied in laying bricks by hand.

**A Recipe for Mortar used in Leeds.**—The Building Clauses Committee of the Leeds Corporation, at a recent meeting, passed a resolution requiring that in future all mortar used for buildings in Leeds shall consist of not less than one part of lime to two parts of good engine ashes, or clean river sand. This resolution was the outcome of a report presented by Mr. Fairlie, the city analyst, showing that many samples recently analysed fell far below this standard. As a result of the action of the committee the building inspectors of the Corporation will have power to take samples of any mortar being used for building purposes, and have them submitted for analysis.

**Building Offences at Ossett.**—At the Ossett Borough Court, on May 29th. Mr. John Cooper and Mr. Moses Ellis, builder, were summoned for erecting a dwelling-house without leaving sufficient space at the rear as required by the by-laws. An undertaking was given by the defendant to acquire the necessary land, and the adjoining owner, Mr. Percival Terry, expressed his willingness to sell it to him. Upon this understanding the Bench only inflicted a penalty of 5s. and costs upon the builder, and 10s. and costs upon the owner, with a further continuing penalty of 1s. per day, which was not to be enforced if the requirements of the by-laws were complied with in two months. The case against Mr. William Broadhead for converting a building formerly used as the Gawthorpe Liberal Club into two dwelling-houses without submitting plans to the Corporation, was dismissed. Mr. William Wilcock, rag merchant, and Mr. James Hemingway, builder, were summoned for erecting an engine and boiler house for the former without submitting plans to the Corporation. The Bench fined the owner 5s., and the builder 2s. 6d.

## Surveying and Sanitary Notes.

**Bacterial Treatment of Sewage.**—The Sewage Committee of the Blackburn Corporation have recommended the bacterial treatment of sewage by Dibdin's process. They recommend the laying down of five acres of bacteria beds at a cost of £21,000, and estimate that an actual saving can be effected on the method now in use. Experimental bacteria beds have been in use at the Samlesbury Sewage Works for twelve months, with satisfactory results.

**The Disposal of Bingley Sewage,** at a cost of £26,000, formed the subject of a Local Government Board inquiry last Wednesday. The District Council sought power to borrow the amount for the purpose of completing the disposal works and laying the necessary main sewers for the conveyance of the sewage from the whole of the district around Bingley, including Wilden and the Harden Valley. The cost of these sewers was estimated at £8,040, the extension and completion of the works at £10,487, land and easements at £4,001, engineers' costs, law costs, &c., at £1,350, and contingencies at £2,121.

**Sanction has been refused** by the Local Government Board to the Barnsley Rural District Council's application to borrow £6,500 for a sewage scheme at Cudworth. Objection was taken to the site for the outfall works as too near the highway, also to the unsuitability of the site for sewage treatment, and the fact that the sewage from all the houses was not treated at one outfall works. It was stated at the meeting of the Council that the requirements of the Local Government Board were unreasonable and would cost about £10,000, while it was almost impracticable to include all the property in one outfall works. The matter was referred to the Parochial Committee.

**York Street, Leeds, Insanitary Area,** was the subject of a Local Government Board inquiry, held at the Leeds Town Hall, last week. Col. J. T. Marsh, R.E., conducted the inquiry with reference to the provisional order, confirmed by the Act of 1896, in regard to the housing of working people displaced under the York Street insanitary area scheme. What the Corporation ask is the exclusion from the scheme of a lodging house in Harper Street, and of certain land adjoining the North-Eastern Railway, and the sanction of the Board, under Article 3, sub-section 5, of the Order, to the disposal of certain land comprised in the scheme for purposes other than the erection of suitable dwellings for the accommodation of persons of the working class. The number of persons to be rehoused is 2,000. There was no opposition to the application.

**Wigan Gas and Sewage Works.**—A Local Government Board inquiry was held by Mr. W. A. Ducat into applications made by the Wigan Corporation to borrow £8,000 for sewage disposal works, and £5,000 for gas works purposes. The town clerk explained that the sewage works proposed were certain settling tanks and filter beds at the sewage farm. The application to borrow £5,000 for gas works improvements was next brought before the inspector. The town clerk said that sums totalling £39,000 were sanctioned in 1893, and the amounts had been spent in all cases except in those of the new retort house, where they had a balance of £1,131 13s. 6d.; the sidings extension, balance £213 12s. 3d.; the new purifier, balance £204 16s. 7d.; meters, balance £1,173 7s. 3d. The total balance underspent was £9,403 1s. 11d., and on the other hand, on other items they had overspent to the amount of £4,349 8s. 7d., which was chiefly made up of new mains £2,300, new services £855, and the washer scrubber £1,028, which was especially sanctioned.



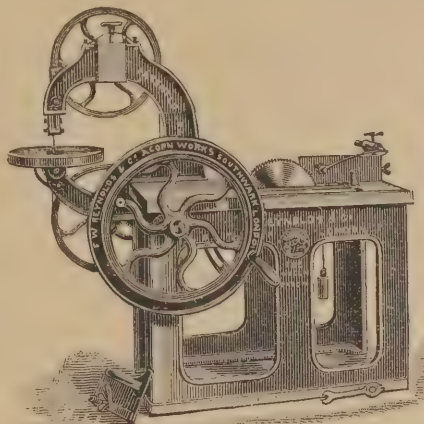
**Sowerby Bridge Sewage.**—The District Council desire to borrow £2,000 in connection with their sewage scheme, and applied to the Local Government Board for permission to do so. An inquiry into the application was held last Wednesday. The scheme, it was stated, was originally sanctioned in 1880. A site for outfall works was then purchased in the Holmes for £4,000, and the amount granted for works was £10,643. Nothing whatever, however, was done by the Local Authority until 1893, when the Holmes site was abandoned, and a fresh site for outfall works secured at Milner Royd. In the construction of the sewers, the purchase of easements, &c., the amount sanctioned had already been exceeded to the extent of the £2,000 now applied for. To complete the scheme, and to carry out the outfall works, a further expenditure of about £7,000 would be necessary. It was also stated that the District Council had agreed to accept the sewage of the adjoining district of Sowerby, and that, if the Local Government Board insisted on their present requirements as to land, about 280 yards of sewer already laid would have to be taken up in order to extend the site to the necessary dimensions.

**Discoveries in Leeds.**—During the process of laying eleven fresh cables for the conveyance of electric light from the generating station of the Leeds Corporation in Aire Street to the centre of the city, the workmen came across a splendidly-preserved stone arched vault in Aire Street. Its area was 20ft. long, 12ft. wide, and 10ft. high to the crown of the arch. Subsequent excavations showed that it was one of a series of five beautifully-preserved arches of similar dimensions, the walls between the arches being about 4½ft. thick, and well preserved. It was discovered later that, in addition to the vaults having communication with each other, there was in the one farthest from Wellington Street an entrance to a subterranean passage.

Trade and Craft.

WOOD-WORKING MACHINERY.

The hand-power circular sawing machines of Messrs. F. W. Reynolds and Co. are perhaps too well known to our readers to need describing, but the "Queen" is one which is most likely not yet quite so well known, although



"QUEEN" COMBINATION CIRCULAR AND BAND SAW MACHINE.

its merits are sure to bring it to the front. It is constructed with a self-contained driving shaft, from which power is communicated to the saw spindle by means of a strong and durable driving chain below the table. The flywheel may be used on the saw spindle for ripping. The circular saw being made to rise and fall, the height of its teeth above the table may be regulated at pleasure to suit the depth of the rebate, groove, or tenon. It will cut 4½in. deep, and also cross-cut any length.

The "Queen" hand-power combined circular and band sawing machine is similar in every respect to the above-mentioned, with the addition of the band saw apparatus. It has the advantage that the circular saw can be used independently of the band saw, as the driving gear of the latter is made so as to be instantly disconnected when desired. The 12in. planing, jointing, trying-up, and moulding machine, No. 4 pattern, can be made to do a large variety of work, and the quality of the work turned out is excellent. Its approximate weight is, without countershaft, 8cwt., with countershaft, 9cwt. The vertical spindle moulding machine, No. 2 pattern, is specially suitable for making circular, irregular, and ornamental mouldings, which can be worked against the collars on the spindle or from a template. Architraves, sash bars, and straight mouldings, of all descriptions, can also be worked against the fence-plates. It is adaptable for planing, thicknessing, trying-up, chamfering, &c., and will work timber up to 4½in. deep. No. 3 pattern is fitted with a rising and falling spindle, worked by hand-wheel and screw, and is made both with collars and a square cutter block for holding the cutters. Its qualities can be summed up in a very few words; it is a reliable machine. The power tenoning machine, with self-contained countershaft, type B, is a very useful size for joiners and cabinet makers. It is very strong, and occupies little space. The table can be removed when it is not in use, and the swing bracket closed. The design of the patent guards for circular saws has certainly been considered with a view to securing the greatest possible amount of safety to the workman, and the least amount of hindrance to his work. It always remains in the same position, and does not require adjustment for every different thickness of wood, so that it is not a source of trouble or waste of time to the workman. The address of the firm is Acorn Works, Edward Street, Blackfriars Road, London, S.E.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—</b>			
June 9	Great Yarmouth—Destructor Buildings, &c. ...	Town Council ...	J. W. Cockrill, Borough Surveyor, Great Yarmouth.
" 9	Balham, S.W.—Post Office ...	H.M. Commissioners of Works ...	J. Wager, Offices, Storey's Gate, S.W.
" 9	Portsmouth, Cornwall—Coastguard Buildings ...	Admiralty ...	Director of Works Department, 21, Northumberland-av., W.C.
" 9	Brighton—Portland Cement ...	Town Council ...	F. J. C. May, Borough Surveyor, Town Hall, Brighton.
" 9	Bristol—Library ...	Libraries Committee ...	W. V. Gough, 24, Bridge-street, Bristol.
" 9	Dewsbury—Classrooms, Conveniences, &c. ...	National Schools ...	Holton and Fox, Architects, Westgate, Dewsbury.
" 9	North Shields—Schools ...	Tynemouth School Board ...	F. E. N. Haswell, Architect, Tyne-street, North Shields.
" 9	Portrush, Ireland—Rectory ...	Urban District Council ...	H. Seaver, 123, Royal-avenue, Belfast.
" 10	Ashby-de-la-Zouch—Farm Buildings, &c. ...	H. Spencer and Co. Ltd ...	J. B. Everard, 6, Millstone-lane, Leicester.
" 10	Keswick—Inn ...	Workhouse Guardians ...	D. N. Fape, Surveyor, Lake-road, Keswick.
" 10	Cardiff—Boundary Wall ...	Building Club ...	E. Seward, Architect, Queen's-chambers, Cardiff.
" 10	Cwmaman, Aberdare—30 Houses ...	Royal Asylum ...	L. L. Smith, 20, Commercial-street, Aberdare.
" 10	Fochabers, Scotland—Building (9 Contracts) ...	Industrial and Provident Society, Ltd. ...	Estates Office, Fochabers.
" 10	Montrose—Villa ...	Urban District Council ...	J. Sim, 160, High-street, Montrose.
" 10	Workington—Alterations, &c., to shop ...	Blean Union Guardians ...	W. G. Scott & Co., Architects, Victoria-bldgs., Workington.
" 12	Barry, Wales—Destructor Buildings ...	Brewery Company ...	J. C. Pardoe, Surveyor, Holton-road, Barry.
" 12	Herne Common, Kent—Additions, &c., to Workhouse ...	County Council ...	Master of Workhouse, Herne Common, Kent.
" 12	Newbury—Rebuilding Inn ...	School Board ...	J. H. Money, Architect, Newbury.
" 12	Southampton—Police Cottages and Cells ...	District Waterworks Co. ...	W. J. Taylor, County Surveyor, The Castle, Winchester.
" 12	Brothertoft, Lincs.—School Enlargement ...	T. Parratt ...	J. H. Tooley, 6, Bridge-street, Boston.
" 12	Wolsingham—Two Cottages ...	Wallasey Urban District Council ...	—Askwith, Resident Engineer, South-rd., Bishop Auckland.
" 12	Whitby—Two Dwelling-houses and Shops ...	County Council ...	R. Lennard and Son, Architects, Cliff-street, Whitby.
" 12	Seacombe, Cheshire—Boundary Walling ...	Trustees of Municipal Charities ...	W. H. Travers, District Engineer, Public Offices, Egremont.
" 12	Hartley Row, Hants—Police Cottages, &c. ...	E. E. Bevan ...	W. J. Taylor, County Surveyor, The Castle, Winchester.
" 12	Gloucester—Cattle-shed &c. ...	Town Council ...	T. Cadle, Lynwood, Denmark-road, Gloucester.
" 12	Cadoxton, near Neath—Hotel and 5 Dwelling-houses ...	District Gas Company ...	J. C. Rees, Architect, Neath.
" 12	Cwmavon—Extension, &c., to Public-house ...	Joint Hospital Board ...	J. C. Rees, Architect, Neath.
" 13	Kidderminster—Lodge ...	Union Guardians ...	A. Coomber, Borough Surveyor, Town Hall, Kidderminster.
" 14	Shotley Bridge—Foundations for Gasholder Tank ...	North-Eastern Railway Co. ...	T. Newbigging and Son, 5, Norfolk-street, Manchester.
" 14	Ulverston—Raising Stone Wall, &c. ...	Watch Committee ...	C. W. Dean, 3, Benson-street, Ulverston.
" 14	West Ham—Water Tower ...	Commissioners ...	Clerk, Workhouse, Leytonstone.
" 14	Crewes—Chimney Stack, &c. ...	W. P. Eglish ...	Hopkinson and Talbot, 29, Princess-street, Manchester.
" 14	Hull—Quay and Shed ...	Urban District Council ...	T. M. Newell, Engineer, Dock Office, Hull.
" 14	Lurgan, Ireland—School Building ...	Urban District Council ...	Young & Mackenzie, Architects, Donegal-sq., E., Belfast.
" 15	Warrington—Police Buildings and Offices ...	Urban District Council ...	Borough Engineer, Town Hall, Warrington.
" 15	Clydebank, Scotland—Burg Buildings, Baths, &c. ...	Urban District Council ...	J. Hepburn, Clerk, Burgh-chambers, Clydebank.
" 16	Chartham Downs—Alterations to Lunatic Asylum ...	Urban District Council ...	W. J. Jennings, 4, St. Margaret's-street, Canterbury.
" 16	Sowerby Bridge—Foundry, Mechanics' Shops, &c. ...	Urban District Council ...	A. C. Williams, 29, Southgate, Halifax.
" 19	Beckenham—Institute, Swimming Baths, &c. ...	Urban District Council ...	J. A. Angell, Surveyor, Council's Offices, Beckenham.
" 19	Wimbledon—Alterations, &c., to Cottage ...	Urban District Council ...	C. H. Cooper, Council's Engineer, The Broadway, Wimbledon.
" 19	Ardrossan, Scotland—Hospital ...	Urban District Council ...	Fryers and Penman, Architects, Largs.
" 19	Penlee Point, Cornwall—Fog Signal House, &c. ...	Urban District Council ...	E. G. Verity, 31, Golden-square, W.
" 19	Tunbridge Wells—53 Cottages and 5 Blocks of Tenements ...	Urban District Council ...	Borough Surveyor, Tunbridge Wells.
" 19	Southall, W.—Infirmary and Cottages ...	Urban District Council ...	A. S. Snell, 22, Southampton-buildings, W.C.
" 20	Sheffield—Infectious Diseases Hospital ...	Urban District Council ...	Flockton, Gibbs, & Flockton, 15, St. James's-row, Sheffield.
" 20	Sheerness—Schools ...	Urban District Council ...	L. Grant, Architect, High-street, Sittingbourne.
" 20	Penarth—Alterations to Schools ...	Urban District Council ...	Seddon and Carter, Bank-buildings, St. Mary-st., Cardiff.
" 21	Basingstoke—Hospital ...	Urban District Council ...	J. Gibson, 3, New-street, Basingstoke.
" 21	Manstone—Cottage Home Buildings, &c. ...	Urban District Council ...	L. Grant, Architect, High-street, Sittingbourne.
" 22	Lawrence Cove, co. Cork—Coastguard Station ...	Urban District Council ...	Carpenter-in-Charge, Queen's College, Cork.
" 27	Hill End, near St. Albans—Hospital Block, &c. ...	Urban District Council ...	G. T. Hine, 35, Parliament-street, Westminster.



COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—Continued.</b>			
July 27	Brighton—Alterations, &c., to Library, Museum, &c....	Corporation .....	F. J. C. May, Town Hall, Brighton.
No date.	Brighton—Public Library Extension .....	Corporation .....	S. Hunt, 129, Queen's-road, Brighton.
"	Worthing—Wes'ean Church and Schools .....	Corporation .....	J. Wills, Architect, Victoria-chambers, Worthing.
"	Grays, Essex—Four Pairs of Semi-detached Houses, &c.	National Schools .....	C. M. Shiner, 3, Bond-court, Walbrook, E.C.
"	Harrietsham, Kent—Schoolmaster's House .....	National Schools .....	H. Benstead, Architect, Maidstone.
"	South Croydon—Private Residence .....	National Schools .....	W. Towell, 21, Buckingham-street, Strand, W.C.
"	Willenden—Three Cottages .....	National Schools .....	T. F. Shaw, 60, Nicholl-road, Harlesden.
<b>ENGINEERING—</b>			
June 10	Port Talbot, Wales—Main .....	Margam Urban District Council .....	J. Taylor, Sons and Santo Crimp, 27, Great George-st, S.W.
" 10	Naples—Harbour and Docks .....	Corporation .....	Public Works Department, Rome.
" 12	Huddersfield—Electric Equipment to Tramways .....	Corporation .....	Borough Engineer, 1, Peel-street, Huddersfield.
" 12	Denbigh—Concrete Dam, &c....	North Wales Counties Lunatic Asylum .....	J. T. Ward, 3, Cook-street, Liverpool.
" 12	Lanark—Waterworks .....	Upper Ward of the County .....	Warren and Stuart, 115, Wellington-street, Glasgow.
" 12	Lochgillhead—Waterworks .....	Argyll County Council .....	A. Frew, 175, Hope-street, Glasgow.
" 12	South Shields—Water Tanks .....	Corporation .....	Porous Engineer, West Holborn, South Shields.
" 12	Huddersfield—Copper Rail Bonds for Electric Traction .....	Corporation .....	Borough Surveyor, 1, Peel-street, Huddersfield.
" 13	London, N.E.—Electricity Supply Mains .....	Hackney Vestry .....	R. Hammond, 64, Victoria-street, Westminster.
" 13	London, S.W.—Fire Float .....	London County Council .....	Clerk's Department, County Hall, Spring-gardens, S.W.
" 13	Manchester—Widening Line .....	London County Council .....	Engineer's Office, Hunt's Bunk, Manchester.
" 14	Shotley Bridge—Gasholder Tank .....	London County Council .....	T. Newbigging and Son, 5, Norfolk-street, Manchester.
" 14	York—Railway Branch .....	North-Eastern Railway Co. ....	C. A. Harrison, Central Station, Newcastle-on-Tyne.
" 14	York—Branch Railway .....	North-Eastern Railway Co. ....	C. A. Harrison, Central Station, Newcastle-on-Tyne.
" 15	Belfast—Destructor .....	Public Health Committee .....	City Surveyor, Belfast.
" 15	London—Hauling Engines .....	Anglo-Chilian Nitrate and Rly. Co., Ltd.	Offices, 123, Bishopsgate-street Within, London, E.C.
" 17	Dudley—Electric Lighting Works .....	Electric Lighting Committee .....	Wilson and Storey, 63, Victoria-street, Westminster.
" 17	Wolverhampton—Water Softener .....	Corporation .....	J. W. Bradley, Borough Engineer, Town Hall, Wolverhampton.
" 19	Toronto, Canada—Tower Clock, Bells, & System of Clocks .....	Board of Control .....	Street and Co., 30, Cornhill, London, E.C.
" 19	Horton, Christiania—Two Centrifugal Pumps, &c. ....	Government Dockyard Authorities .....	Commercial Department, Foreign Office, S.W.
" 19	Southampton—Widening Stone Bridge .....	Metropolitan Asylums Board .....	W. J. Taylor, County Surveyor, The Castle, Winchester.
" 21	London, N.—Kitchen Fittings .....	Municipal Council .....	H. and C. Harton, 15, Leadenhall-street, E.C.
" 30	Shanghai—Tramway Concession .....	Brazilian Government .....	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
July 31	Rio de Janeiro—Lease of Railways .....	Brazilian Government .....	Commercial Department, Foreign Office, S.W.
<b>IRON AND STEEL—</b>			
June 9	London, S.W.—Steel Joists .....	Battersea Vestry .....	Vestry Clerk, Municipal Buildings, Lavender Hill, S.W.
" 13	London, S.W.—Fencing Materials .....	Southern Mahratta Rly. Co., Ltd.	E. L. Thornton, 46, Queen Anne's-gate, Westminster, S.W.
" 14	Hurst, near Ashton-under-Lyne—Pulleys, &c. ....	Urban District Council .....	E. Garside, Engineer, Town Hall-chbrs, Ashton-under-Lyne.
" 15	Winsford—Water Mains .....	Urban District Council .....	H. Hulse, Council's Surveyor, Market-place, Winsford.
" 17	Matlock—Steel Cable Tramway Grippers .....	Urban District Council .....	A. M. Clarke, Surveyor, Town Hall, Matlock.
<b>ROADS—</b>			
June 9	Shrewsbury—Hire of Steam Roller, &c. ....	Atcham Rural District Council .....	J. Everest, Clerk, St. John's-hill, Shrewsbury.
" 10	Rushden, Northants.—Materials .....	Urban District Council .....	W. B. Madin, Surveyor, Vestry Hall, Rushden, R.S.O.
" 10	Kettering—Street Works .....	Urban District Council .....	T. R. Smith, Surveyor, Market-hill, Kettering.
" 10	Hastings—Cartage .....	Rural District Council .....	D. Paine, Dist. Surv., Stonelynk Farm, Fairlight, Hastings.
" 10	Elland—Street Formation .....	Urban District Council .....	C. F. L. Horsfall and Son, Lord-street-chambers, Halifax.
" 10	Ely—Materials .....	Urban District Council .....	W. McKelvie, City Surveyor's Office, Ely.
" 10	Keighley—Forming, &c., Roads .....	Urban District Council .....	Barber, Hopkinson, and Co., Architects, Craven Bank chambers, Keighley.
" 12	London, N.—Wood Paving .....	Islington Vestry .....	J. P. Barber, Vestry Hall, Upper-street, N.
" 12	Carrick-on-Suir, Ireland—Road Works .....	District Council .....	J. Mullins, Clerk, Board Room, Workhouse, Carrick-on-Suir.
" 12	London, W.C.—Sand, Ballast, Wood Blocks, &c. ....	St. Martin-in-the-Fields Vestry .....	G. Green, Town Hall, Charing Cross-road, W.C.
" 12	West Ham—Pitching and Private Street Works .....	County Borough .....	L. Angel, Surveyor, Town Hall, Stratford, E.
" 13	London, S.E.—Kerbing, Tar Paving, &c. ....	Lewisham Board of Works .....	Surveyor, Town Hall, Catford, S.E.
" 14	London, N.E.—Granite Spall and Broken Granite .....	Hackney Vestry .....	J. Lovegrove, Surveyor, Town Hall, Hackney, N.E.
" 14	London, S.E.—Granite Curb and Cubes .....	Greenwich Board of Works .....	Offices, 141, Greenwich-road, S.E.
" 15	London—Making-up Roadways, &c....	Metropolitan Asylums Board .....	Offices, Norfolk House, Norfolk-street, W.C.
" 19	Tunbridge Wells—Sewering and Making up Roads .....	Corporation .....	Borough Surveyor, Town Hall, Tunbridge Wells.
" 19	Wolverhampton—Forming, &c., Street .....	Streets Committee .....	J. W. Bradley, Surveyor, Town Hall, Wolverhampton.
" 22	Grays Thurrock—Granite Setts, &c. ....	Urban District Council .....	A. C. James, Council's Surveyor, 53, High-street, Grays.
" 26	Folkestone—Three Roads .....	Urban District Council .....	H. B. Bradley, 52, Sandgate-road, Folkestone.
" 26	Cheriton, Kent—Three New Roads .....	Streets Committee .....	Marler and Co., 95a, Gloucester-road, South Kensington.
" 30	Wolverhampton—Granite Setts .....	Streets Committee .....	J. W. Bradley, Surveyor, Town Hall, Wolverhampton.
<b>SANITARY—</b>			
June 13	Market Harborough—Sewers, &c. ....	Rural District Council .....	J. B. Everard, 6, Millstone-lane, Leicester.
" 13	London, S.E.—Brick and Concrete Sewer .....	Lewisham Board of Works .....	Surveyor, Town Hall, Catford, S.E.
" 14	Hurst, near Ashton-under-Lyne—Sewer .....	Urban District Council .....	E. Garside, Engineer, Town Hall-chbrs, Ashton-under-Lyne.
" 14	Ryton-on-Tyne—Sewer .....	Urban District Council .....	J. P. Dalton, Engineer, Council Offices, Ryton-on-Tyne.
" 15	Chartham—Re-drainage, Rain-water Reservoirs, &c. ....	Kent Cnty. Lunatic Asylums Committee .....	W. J. Jennings, 4, St. Margaret's-street, Canterbury.
" 15	Berkhamstead and Northchurch—Sewers, &c. ....	Joint Sewerage Committee .....	J. Lemon, 9, Victor-a-street, S.W.
" 15	London, N.W.—Redrainage of Workhouse .....	Guardians of St. John, Hampstead .....	K. D. Young, 17, Southampton-street, Holborn.
" 16	Halstead, Essex—Altering Drains, &c. ....	Workhouse Guardians .....	Clare and Ross, 66, Duke-street, Chelmsford.
" 16	Carlton, Bursley—Sewerage Scheme .....	Rural District Council .....	W. J. Lomax, 11, Fold-street, Bolton.
" 20	Dover—Surface Drains and Sewers .....	Town Council .....	H. E. Stilgoe, Engineer, Town Hall, Dover.
" 20	London, N.—Urinals .....	Tottenham Urban District Council .....	P. E. Murphy, 712, High-road, Tottenham, N.
" 21	Croydon—Sewering .....	Rural District Council .....	R. M. Chart, Surveyor, Union Bank-chambers, Croydon.
<b>PAINTING AND PLUMBING—</b>			
June 9	London, E.C.—Painting Artizans' Dwellings .....	Corporation .....	Engineer to Corporation, Guildhall, E.C.
" 9	Leeds—Painting Municipal Buildings, &c. ....	Corporation .....	City Engineer, Municipal-buildings, Leeds.
" 10	Cardiff—Painting Schools .....	Guardians .....	Master, Ely Schools, Cardiff.
" 10	Lisnakea, Ireland—Painting, Whitewashing, &c. ....	Guardians .....	J. O. R. Hoey, Clerk, Union, Lisnakea.
" 12	Aberdeen—Lime-washing .....	Town Council .....	Sanitary Inspector, City Buildings, Aberdeen.
" 12	Blaenavon—Painting an Colouring Chapel, &c. ....	Select Vestry .....	B. Davies, Annie-street, Blaenavon.
" 12	Liverpool—Painting Workhouse .....	Town Council .....	H. J. Hagger, Parish Offices, Brownlow-hill, Liverpool.
" 13	Dover—Painting and Decorating Connaught Hall, &c. ....	School Board .....	H. E. Stilgoe, Borough Engineer, Town Hall, Dover.
" 13	Egham—Laying on Gas Supply to Schools .....	Chelsea Guardians .....	J. A. Engall, Clerk, Clarence-street, Staines.
" 16	London, S.W.—Painting, Whitewashing, &c. ....	Northumberland County Asylum .....	W. Miller, 250, King's-road, Chelsea.
" 21	Morpeth—Paint, Oils, Glass, &c. ....	Paddington Guardians .....	Medical Superintendent, Asylum, Morpeth.
" 27	London, W.—Painting, &c., at Infirmary .....	Gas Committee .....	E. H. Sim, 8, Craig's-court, Charing Cross, S.W.
" 27	Macclesfield—Painting Two Gasholders .....	Gas Committee .....	—Newbigging, Engineer, Gasworks, Macclesfield.
<b>TIMBER—</b>			
June 10	South Hetton—Colliery Timber .....	Coal Company, Ltd. ....	J. R. Lambert, South Hetton, Sunderland.
" 12	Genoa—Oak Wood .....	Spezia Dockyard Authorities .....	Commercial Department, Foreign Office, S.W.
" 13	London, W.C.—Timber, &c. ....	St. Giles and Bloomsbury Guardians .....	J. Appleton, Clerk, 57, Broad-street, W.C.
" 14	Isleworth—Firewood .....	Brentford Union Guardians .....	W. Stephens, Clerk, Union Offices, Isleworth.

COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
June 20	Tendring, Essex—Sewerage Scheme .....	£21 .....	District Council.
" 27	Edinburgh—County Buildings .....	£200, £100, £50 .....	Midlothian County Council.
" 30	Wakefield—Central Buildings .....	£50, £30, £20 .....	Wakefield Industrial Society, Ltd., Bank-street, Wakefield.
July 3	Buckie, Scotland—Bridge over Burn .....	£26 5s. ....	Commissioners.
" 3	Harrigate—Kursaal .....	£150, £100, £75 .....	Corporation.
" 27	Lichfield—Grammar School .....	£20 .....	H. H. Brown, Clerk to Governors, Lichfield.
" 27	Plumstead—Municipal Buildings and Public Library .....	£100, £75, £50... ..	Edwin Hughes, Clerk, Vestry Hall, Maxey-road, Plumstead.



# Property and Land Sales.

**TO BUILDERS AND OTHERS.—DAGENHAM, ESSEX.**—Valuable BLOCK OF FREEHOLD BUILDING LAND, comprising an area of  $\frac{3}{4}$  acres in an important corner position on the main London road, eight minutes from the station, with existing frontage of upwards of 700ft. to parish roads, and ripe for immediate erection of small houses, for which the demand is increasingly good. Excellent beds of sand and gravel.

**MESSRS. KEMSLEY will SELL the above** by AUCTION at the Mart, E.C., on MONDAY, JUNE 19th, at Two o'clock, in One Lot. Particulars of Messrs. WRENSTED and HIND, Solicitors, Ormond House, Great Trinity-lane, E.C.; and of the AUCTIONEERS, Railway Station, Woodford Green, and at Romford. 1

**TO BUILDERS AND OTHERS.—ILFORD.**—Absolutely ripe FREEHOLD BUILDING LAND, close to two parks and to Ilford Station, G.E.R., whence the city is reached in quarter of an hour. The land has important frontages to Ilford-lane, Hampton and Mortlake roads, and affords the choicest sites available in the vicinity for the immediate erection of first-rate shops and villas, for which there is a very keen and increasing demand from occupying purchasers. Ground rents readily created. Free conveyances, payment by instalments.

**MESSRS. KEMSLEY will SELL the above** by AUCTION, at the Angel Hotel, Ilford, on WEDNESDAY EVENING, JUNE 14th, at SEVEN, in lots to suit all buyers. Particulars of Messrs. PATERSON, SONS, and CANDLER, Solicitors, 26, Bouverie-street, E.C.; of A. W. HUDSON, Esq., Architect, 42, Bishopsgate-street, E.C.; and of the AUCTIONEERS, Railway Station, Woodford Green, and at Romford. 1

**BUILDING LAND (Freehold), at Buckhurst Hill, Essex,** frontage 155ft. to main London road; depth, 150ft., elevated position, overlooking Epping Forest; ten minutes from station, and thoroughly ripe for ERECTION OF SUPERIOR RESIDENCES. Price only £600 to close estate, payment by instalments if desired.—KEMSLEYS, Land Agents, Woodford Green. 1

**CLAPHAM.**—Freehold Building Land in the centre of a populous, well-established district close to the Common and the Railway Station.

**WEATHERALL and GREEN will SELL** by AUCTION at the Mart, City, on MONDAY, JULY 3rd, at TWO o'clock, 5 acres of FREEHOLD BUILDING LAND, in six lots, each containing plots of odd depth, and possessing excellent frontages on Ascot Road, Abbeville Road, and Briarwood Road, Clapham. Also a block of Freehold Building Land at the corner of Abbeville Road and Park-place, Clapham, on which at present stand Nos. 177 and 179, Abbeville Road, and 88, 90, and 92, Park Place, but high afford excellent facilities for the erection of several houses.

Particulars, with plans and conditions of sale, may be obtained of Messrs. HAWKS, STOKES, and MCKEWAN, Solicitors, 101, Borough High-street, S.E.; and of the AUCTIONEERS, 22, Chancery-lane. 1

**HARRINGAY PARK, Crouch Hill** (outside the jurisdiction of the L.C.C.).—Freehold Building Estate of 5 acres, three minutes from the Broadway, and five minutes from the station; ripe for immediate development for the erection of houses that readily let and sell.

**WEATHERALL and GREEN will SELL** by AUCTION at the Mart, E.C., on MONDAY, JULY 3rd, at Two o'clock, in one lot, the FREEHOLD BUILDING ESTATE of over 5 acres in extent, upon which at present stand Nos. 13 to 28, Harringay Park, on lot and producing £1,070 10s. per annum. This area of 5 acres is all matured land, surrounded by good roads, and ripe for the immediate creation of freehold round-rents, as about 2,000ft. of building frontage can easily be dealt with, and there also is the advantage to purchaser of the income from the existing rents which will be receivable until the scheme of development has been matured and the sites cleared. The estate is high and healthy, and modern houses are in great demand.

D. P. RODYK, Esq., Solicitor, 70a, Aldermanbury, E.C. Particulars at the Mart, and of the AUCTIONEERS, 22, Chancery-lane. 1

**FLEET STREET, CITY.**—By order of the Governors of St. Bartholomew's Hospital.—A fine commanding Building Site, occupying an area of about 2342 sq. ft. on the south side and newly widened part of this great main thoroughfare, within about 40 yards of Fleetgate-circus, having frontages of about 55ft. 6in. to Fleet-street and 51ft. 5in. to St. Bride's-avenue in the rear (facing St. Bride's Church); remarkably well lighted back and front, and suitable for the erection of first-class shops and business premises—a bank, newspaper or publishing office, or other important buildings adapted to the position.

**MESSRS. DEBENHAM, TEWSON, FARMER, and BRIDGEWATER** are instructed to LET by AUCTION, at the MART, on TUESDAY, JUNE 13th, at TWO, on a Building Lease, for a term of 80 years direct from the Freeholders, the very compact and valuable SITE of Nos. 90, 91, and 92, Fleet-street, and 2 and 3, St. Bride's-avenue, in the City of London.

Particulars, with plans, of Messrs. WILDE, MOORE, and WIGSTON, Solicitors, 21, College-hill, Cannon-street; of Messrs. E. FANNOS and SON, Architects and Surveyors, 7A, Laurence Pountney-hill, E.C.; at the Clerk's Office, St. Bartholomew's Hospital; and of the AUCTIONEERS, 80, Cheapside. 1

**KINGSFIELD ESTATE, WATFORD, HERTS.**  
**SEDGWICK, SON, and WEALL will SELL** by AUCTION, in a Marques on the Estate, on WEDNESDAY, JUNE 14th, 1899, at FOUR for FIVE o'clock, by direction of C. King-Smith, Esq., about 144 Plots of very valuable FREEHOLD BUILDING LAND, fronting Eastbury-road, and the two roads now being formed. Adjoining Bushey Station on the L. and N.W. Railway, Oxhey Church, and close to the town of Watford; healthy situation, 260ft. above sea level, and dry soil. The plots will have frontages varying from 25ft. to 50ft., and with depths varying from 150ft. to 200ft., and are very suitable for superior villa residences. Sewers, storm water drains, gas and Colne Valley water mains, are being laid in the roads. Nine-tenths of the purchase-money may remain on contract. Conveyances at stipulated fees. Tithe free, and land tax redeemed.

Particulars, with plans and conditions, may be obtained of Messrs. HEPBURN, SON, and CUTCLIFFE, Bird-in-Hand-court, 76, Cheapside, London, E.C.; and of the AUCTIONEERS, 38, High-street, Watford, Herts.

**ANSELL and MALLOWS, Architectural** Draughtsmen and Quantity Surveyors, 21, Buckingham-street, Strand, W.C.

**R. I. B. A. EXAMS. PREPARATION,** personally or by correspondence, in three, six, nine, or twelve months' courses. Architectural Lending Library. Special three months' finishing courses.—For full particulars apply to Messrs. HOWGATE and BOND, Associates R.I.B.A., Perchard House, 70, Gower-street, W.C. (close to the British Museum).

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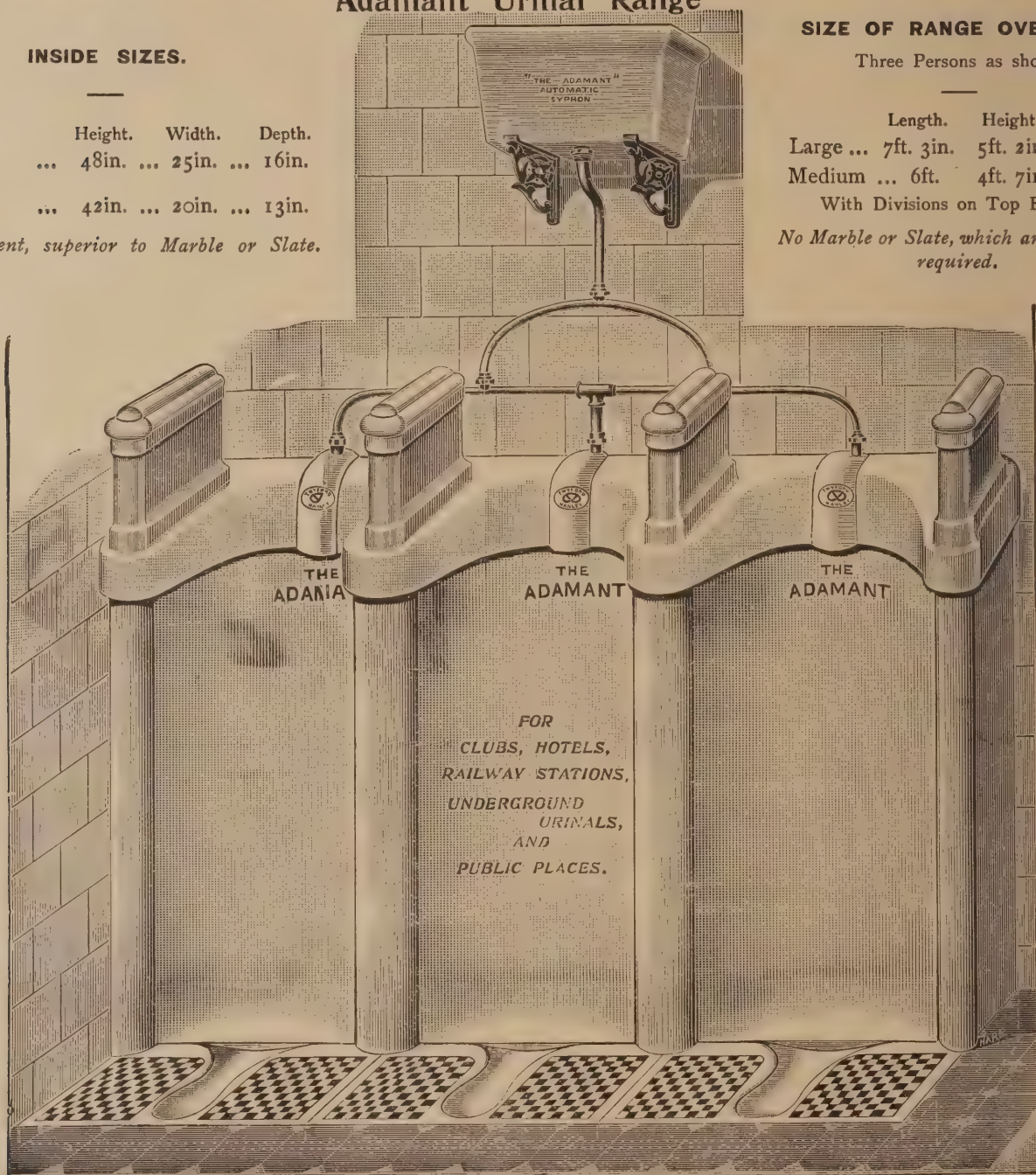
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JUNE 14, 1899.

No. CCXXVII.

## An Architectural Causerie.

**George the Fourth's London.** THERE is no period so quickly forgotten as that whose events have been described as "the history of the day before yesterday." It is true of buildings as of nations. A few famous structures, each representative of an epoch, have established a hold upon the popular imagination, structures of long ago standing out as landmarks, like Westminster Abbey and St. Paul's Cathedral. Great streets also attract the mind and are themselves landmarks; unfortunately they are far too rare in London. Ancient ones like Cheapside have been rebuilt, whilst those of modern times leave an indefinite impression upon the spectator. But there is one comparatively modern district which has a certain air of dignity and distinction, suitable to a great capital; this is the London of the Regency and the first quarter of the present century. Inferior in grandeur to the great group at Westminster and not associated with the Thames, the starting point of the old builders of London, it is nevertheless effective and dignified. Modern changes in building material, and the conception of what a city should be undoubtedly threaten it, but when built it effected a genuine improvement, and it remains to be seen if our generation with greater knowledge and newer appliances can beat it. When our century opened, what is now the most typical part of the West End was a great labyrinth of slums. Trafalgar Square, "the finest site in Europe" was covered with courts and alleys which would have disgraced Whitechapel; these bore curious names such as "the Carribee Islands," and "the Bermudas," whilst "Porridge Island" was full of cookshops; all accounts agree in describing them as mean, filthy, and disreputable. The northern part, including the site of the National Gallery, was long occupied by the King's Mews. In an earlier age Chaucer had held the office of "Clerk of the Mews at Charing," then a village; but the Mews were removed, and a menagerie of wild animals took their place. Mean, tortuous streets, whose inconvenience was not atoned for by any picturesque character, or historic association, led north-westward to Oxford Street, a name then recently assumed from that of "The Oxford Road." The Prince Regent lived at Carlton House, where Carlton House Terrace now stands, a Palladian palace not without merit: before it rose a large open screen of columns, whose purpose was not obvious, and gave rise to many gibes. To him, undoubtedly, the conception of a handsomer capital is due, but it would have remained unfulfilled had not an architect appeared to give it form and substance. This

was John Nash. Perhaps no man that ever played a part in the rebuilding of a capital has been more sharply criticised; contempt has been heaped upon all his work; it has been styled tame and formal, and he has been accused of not knowing the elements of his profession. Yet he produced a palatial quarter, convenient and dignified, and one street which is certainly the brightest, gayest, and airiest in the capital. That he was not the creator of any great building, nor an artist of high originality, may be admitted, but he understood proportion. His work was like that of Baron Haussman at a later period—to lay out thoroughfares, to give air and light, and to produce streets and squares in place of slums and alleys. In this he succeeded. He did not aim at the picturesque, as we understand it; his work is wholly Palladian, and, last but not least, he worked in stucco. This circumstance indeed is but a detail, and one, too, over which he had probably no control, but it has largely helped to prejudice him in the eyes

Nash's monument. Its success is due to its excellent proportions; a wide thoroughfare with houses of very moderate height, allows the sun's rays to flood the pavement and shop-windows; the Woods and Forests department is the ground landlord, and the leases contain a clause stipulating for frequent re-painting. It does not contain a single remarkable building, yet it is the most popular street in all England; it is bright almost at all times and its success and popularity are plainly due to its skilful design. In spite of the assumed "formality" of its Palladian, much variety exists in its designs, except in the Quadrant; but this is itself a clever piece of planning, and very effective with its bold, sweeping curves. Many obstacles were met with in carrying out the Prince Regent's idea, and the present street is admittedly a compromise: originally it was intended that one wide street should start from Carlton House, and run in a straight line to Regent's Park; but private rights and interests interposed, and



BEATEN METAL DOOR-PLATES AND HANDLES FOR A YACHT (ESCUTCHEONS COVERING KEYHOLES ARE ALSO IN BEATEN METAL; HANDLES ARE CAST.) DESIGNED AND EXECUTED BY EDGAR SIMPSON. (See p. 275.)

of the present generation. We little realise the sort of London from which Nash—helped and supported by the Prince Regent—really rescued us. He was bitterly assailed in his own time. Yet he found some supporters, though not until his work was complete and could be seen in full. "Whether the stranger," said an appreciative critic in the *New Monthly Magazine*, "traverses the splendid line of Regent Street, the Quadrant and Portland Place, until he reaches the Regent's Park, beautifully disposed and laid out in walks and groves, dotted with elegant villas. . . or takes his way from Waterloo Place towards Somerset House, and sees before him streets and places and arcades occupying the sites of the filthiest courts imaginable, his first inquiry will be to whose taste, genius and enterprise are these improvements owing? He will be answered that they are all attributable to the genius, energy and talent of Mr. Nash, to abuse and ridicule whom was the fashion of the time in which he lived." Regent Street is really

Nash was compelled to divert it at the top of the rising ground. Resolved, however, upon carrying it northward parallel to the original line, he happily solved the difficulty by taking it round a quadrant. As we now see it, the street is much injured by the loss of its Doric colonnade; this was removed in 1848, and a rather feeble balcony substituted. The cost of the entire street was as nearly as possible a million and a half sterling. To the Prince Regent and Nash we owe Regent's Park, originally known as Marylebone Park Fields. Nash commenced it in 1812, at the same time as Regent Street. Here again detraction has followed him, for if the park be admired for its skilful arrangement and planting of ornamental timber and shrubs, Nash's terraces—that is, all except Cornwall and Munster and Cambridge Gate, which has been rebuilt—are condemned as spiritless. On the whole, however, they are lines of pleasant, comfortable English homes, in accordance with the taste of the time; if not picturesque, they are at least free from affectation, and they



act as a frame to the wide expanse of green-sward and stately trees. One of the most beautiful features of the park is the Regent's Canal, with its green banks and May trees; this, too, is partly Nash's design, though James Morgan was the engineer—an association of two allied professions, which, if adopted in our own day, might have saved many mistakes. Returning to Pall Mall, the United Service Club is by Nash; the Athenæum, its opposite neighbour, is by a man who has been too quickly forgotten, Decimus Burton. How will the former fare if the whole neighbourhood be rebuilt on the colossal scale of the Carlton Hotel, which already somewhat dwarfs it? And how will Regent Street look if structures towering to the height of that which has taken the place of Hanover Chapel are raised on both sides and throughout its length. What will become of its light and sunny appearance? It may be noted that in Paris, where new streets are very wide and the sky is very bright, the limit of height for many years was 60ft.; in London (by the London Streets and Building Acts) it is 80ft., and that too in a climate which is not too liberally provided with light. But in the matter of street designing proportion is everything, and here, whatever his other defects, Nash was simply admirable. The Marble Arch is his design; it originally stood in front of Buckingham Palace, and was removed to Cumberland Gate, Hyde Park, in 1851. It sorely needs completion in the form of a group of statuary above it. The arch is of pure Carrara marble, and cost thirty thousand pounds. Trafalgar Square and its approaches are not wholly Nash's work. The National Gallery has been as much criticised as any production of his, but it is due to Wilkins. The latter was capable of better designs, as witness his excellent portico and court at University College. The story of his National Gallery is a painful one. He was given the old columns, entablatures, and other stonework of Carlton House, then being pulled down, and told to work them into his gallery. He did his best, but was thwarted and embarrassed at every turn by his employers. His history illustrates only too well the way in which England treats her architects. J. C. P.

## OUR COMPETITION.

THE following is a complete list of the designs received:—

Abacus, Ad Rem, Ad utrumque paratus, Ad Valorem, Albion, Alfio, Appliqué, Aurora Borealis, Barbara, Black "●," Bluebell, Brum, Build, Con'M, Caractacus, Carnation, Casement, Charter, Christian, Cleopatra, Clerk of Works (two sets), Clodhopper, Comfort and Convenience, Compass, Cottage Ornée, Craignez Honte, Cypress, Domi, Domus, Dormouse, Dulce Domum, Dulce Domum 2nd, Dum Spiro Spero, Endeavour, Eros, Esprit, Firefly, 500 to 1 Chance, Flint, Forward, Fox, Furor, Gables, Gipsy, Gordon, Gradatim, Gray's Inn, Grey Man, Guido, Habitable, Hawthorn, Heather, Heather 2nd, Hen Pewyl, Home, Homé 2nd, Homestead, Horndean, Hospice, How, Ingle, Joss, Kentish Rag, Knight, Kooms, L.A.Q., L.N.Z., Lib Nell, Lilac, Long and Low, Long and Low 2nd, Lyn, Man of Kent, Martello, Meliora Sperando, Muff, N. or M., Nemo, XIX. Century (two sets), No. 113, North West, Nulli Secundus, Ogee (two sets), Old Time Glory, Pippa, Prêx d'Accomplir, Pulo, Q.E.F., Quercus, Quex, Quis, Raider, Red Rose, Red Roofs, Regis, Rex, Riggs, Rough Cast, Rus, Rustic, St. Crispin, Seagull, Simplex, Squirrel, Sou' Wester, Speedwell, Star, Strata, Sunshine, Sussex, T Square, Tempus Fugit, Thatch, Thatch Roof, Thislixum, Thrums, Torso, Tribly, Try, Tucro, 23, Tyke, Unus, Vau, Vim, White Heather, Whist, Yew, Young 'Un, Young Will.

Othniel has only sent two plans with his envelope and will therefore be disqualified.

## On Reflection.

### The Revival of Mediævalism.

THERE seems to be at the present time a disposition in many quarters to return to mediæval ideas and practices. The ecclesiastic seeks to restore in the church the ritual of pre-Reformation days; the art worker finds his Golden Age in days before the invention of machinery, when every craftsman had a chance to be—and often was—an artist; the social reformer longs for the return of the simpler forms of living and the more human relationships between masters and men that characterised an earlier age. Within certain limits the tendency no doubt makes for good. It is well to remember that our modern progress is not unmixed gain, and that in spite of our increased wealth and enlarged opportunities there are some beautiful things that we have lost, or are in danger of losing. But although it is well to preserve what was good in the spirit of a former age, it is impossible to preserve forms and usages that had their *raison d'être* in conditions that have passed away; placed in a different environment these become out of place and even ridiculous. For this reason we are not disposed to regard the coming revival of that old English form of entertainment, the Masque, as possessing more than a merely antiquarian interest. The Art Workers' Guild have been hard at work on the scheme for nearly two years, and they will shortly produce at the Guildhall an entertainment which is to reproduce—with a difference—the form of histrionic art which delighted our forefathers of two centuries ago, and commanded the best poetic and artistic talent of the time. It is this combination of efforts by various art workers—poet, artist, musician—that gives to the Masque much of its charm in the eyes of its admirers. We gather from certain forewords that have appeared in the press that there is to be a moral purpose underlying the Allegory. We are to witness the discomfiture of dragons and demons, including such up-to-date examples as Philistinus, Scampius, Shumlordus, and Jerry, and we are to be instructed thereby, as our fathers before the days of Board Schools were instructed by witnessing miracle plays. Did we not believe the Art Workers to be serious people, we should be tempted to regard the whole affair as an elaborate joke. But we are assured that it has a serious purpose, which is nothing less than to show how London may become in future the most beautiful as well as the greatest of cities.

**A Model Village.** THAT is an end well worth striving for. It is worth while, however, to consider along what lines we may most reasonably hope for anything like a general revival of a sense of the beautiful. We are convinced that it is not to be sought by the restoration of customs and forms belonging to a less scientific, if a more picturesque, age, or by waging hopeless warfare against machinery, factories, and railways. The wiser and more practical course is to accept frankly, even thankfully, these modern conditions and seek to engraft upon them such elements of beauty as we can. We may admire the ideals of Ruskin and William Morris, and wish it were possible for every workman to take a pleasure in his work, to put into it some individuality and some thought. But unfortunately this is not possible under modern conditions; the introduction of machinery into nearly all trades, with the resultant division of labour and enormously increased output, has converted the craftsman of a former generation into the mere machine-minder. The community on the whole benefits from this, but it is inimical to the cultivation of the æsthetic sense and

of some other of the higher qualities. That side, therefore, of a man's nature which is starved in the process of his daily toil must be cultivated by other means. A good example of one way in which this may be done is afforded by the model village at Port Sunlight, which Messrs. Lever Brothers have erected for the accommodation of the workpeople engaged at their soap factory. We fear there can be little that is æsthetic or elevating in the daily toil of the hands at a soap factory. But soap, one may suppose, is a necessity of even a comparatively primitive civilisation; soap factories, therefore, there must be. One can well believe that their charming village home, with its picturesque and well-built cottages, its ample breathing spaces, and its opportunities for self improvement and healthful recreation must exercise on the workers an elevating and refining influence, and provide just the antidote that is needed for the deadening influences of factory life. The village has attracted attention even outside England, and we note that it forms the subject of an illustrated article in the American "Architectural Review" for May. It shows how important a part the architect may play in the beautifying and uplifting of the common life, even under the economic conditions that prevail to-day. It would be an enormous gain to the community, in more ways than one, if villages such as this were to spring up on the outskirts of every manufacturing town, providing the workers with cleaner, healthier, cheaper, and more beautiful homes than they could possibly find in the crowded tenements of the city.

### The Need for Technical Instruction.

AN Exhibition has just been opened at the Imperial Institute which deserves attention altogether apart from any scientific or artistic value possessed by the articles exhibited. It is a display of practical work executed by candidates at the examinations for 1899 of the City and Guilds of London Institute, and its interest lies in the fact that it affords a rough means of gauging the extent and value of the technical and technological instruction those who are to be the skilled workmen of the future are receiving. It is a matter of national importance that this instruction should be thorough and efficient, and that large numbers of young workmen should take advantage of it. There is practically no other means in these days for maintaining and raising the standard of workmanship. Even in those trades where apprenticeship is still the rule, it is very seldom made the means of giving a lad the thorough training needed to make him a master of his craft. In the stress of modern competition, masters and foremen cannot find the time, even if they have the inclination, to give their apprentices an all-round training. The Duke of Devonshire, in opening the exhibition last Friday, paid a well deserved tribute to the Institution which has been the pioneer of technical instruction in England. During recent years many other bodies—School Boards, County Councils and Polytechnics—have taken up the work of technical and manual training, and most of them have modelled their efforts on the City and Guilds Institute. There is room for all the work that is being done in this direction, and for much more. The artisan students in the registered classes of the Institute throughout the country number over 34,000. That is a good record, but it still remains true that the great majority of young artisans are as yet untouched by these efforts and those of similar organisations. What is now wanted is to arouse in masters and workmen alike so strong a sense of the importance of technical and technological education in these days of foreign competition, that they shall be equally anxious to take advantage of all the opportunities available.





ELECTRIC LIGHT REFLECTORS IN REPOUSSÉ COPPER. DESIGNED AND EXECUTED BY EDGAR SIMPSON.

## THE PERMANENT GALLERY OF DECORATIVE ART.

By ERNEST RADFORD.

AN institution, the value of which is undoubted, has lately been opened at No. 9, Harrington Road, South Kensington. The idea, we are told, is to give designers and craftsmen an opportunity they might not otherwise have of showing their best in London. In order that there may be no suspicion of its being either shop or bazaar, there is no commission exacted on sales, and the moderate fees that are paid are expected to do little more than merely support the establishment. There would hardly be room for any bad work in the place even if there were any desire to admit it, and the consequence is that the visitor sees a surprising proportion of really good things. The absence of anything amateurish seems to limit the critic to the expression of his opinions on style. An absolute purist might wish that evidently careful work were not so liberally bestowed upon things designed in a fashion which he himself does not approve of, but the more catholic mind, that sees nothing but beauty in "Art," will have little to do but praise.

The illustrations which accompany this notice are supplied in the main by artists residing as far from London as Nottingham and Altringham, Cheshire. There are many similarly placed, to whom the advantages of such an establishment should be considerable, and others, even more numerous, who for all practical purposes might as well be in Jericho as in the outlying suburbs of London. Whoever visits the place within the next few weeks will be shown designs by Miss Eustace for frieze and brocade which must be admired; by Miss Lowndes, some delightfully

imperfect "wood-white" glass for window panings, which she herself makes. Mr. J. M. Ellwood is very well-known for what he makes and designs of furniture, but is now courting fame with brooches and jewels which he has designed or executed. Mr. Ellwood prefers the lumpier kinds of old furniture; while Mr. Chas. Spooner's taste is for cabinet work at once light and durable—the design of the simplest, and the ornament reduced to a minimum, so that the thing itself commands praise, not what has been lavished upon it.

Mr. R. M. Nance shows a three-fold screen of which no idea can be given in prose. Although simply a painting in oil it is decorative to an amazing degree. The subject, a "Whirlpool" describing a circle as large as the extent of the surface allows, into which will be drawn, unless human effort can save it, the wierdest sea-faring vessel that ever has been depicted. This alone is worth a long journey, and most certainly should be seen.

To return to our illustrations, they are examples of repoussé and pierced metal work supplied by the kindness of Mr. Edgar Simpson; of wood-carvings by Mr. Joseph Phillips; and of decorative designs by Miss H. M. Pemberton.

## NURSERY RHYMES FOR BUILDERS.

Prepared by the London County Council under the provisions of the 164th Section of the London Building Act, 1894

"DICKERY, DICKERY, DOCK."

(By-law 1891 [3]).

Dickery, dickery, dock!  
A place-brick's not a stock;  
But sure as a gun,  
It will pass for one,  
If you know what's o'clock.

### A Central Fire Station at Scarborough.

The Streets Committee of the Scarborough Corporation have approved of a scheme for erecting a central fire station in North Marine Road, at a cost of £3,000. Tenders are invited.

### A New School for the Catholic Blind

is to be erected at West Derby at a total cost of about £4,000. The building is to be of plain Gothic description in brick, and has been designed by Messrs. Linnott, Linnott, and Powell, architects, of Harrington Street, Liverpool.

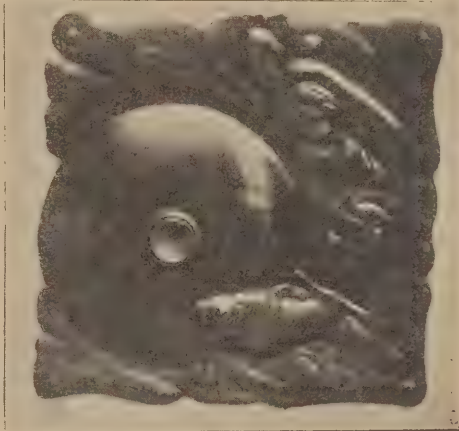
**Improvements at Middlesbrough.**—The first sod of a new road and railway on the north bank of the Tees, opposite Middlesbrough, was cut by Sir Lowthian Bell a short time ago, and Sir Joseph Pease, M.P., laid the foundation-stone of the new Tees Conservancy offices at Middlesbrough.

## NOTES ON ART.\*

By WILLIAM MEEK PAGE.

(Concluded from page 264, No. CCXXVI.)

LET us look at a modern suburban villa. When you approach it you are conscious of receiving a shock as the glaring mass of stone and plate glass bursts upon your affrighted gaze. The front is heavily ornamented, the sides and back are destitute of any adornment—we are evidently not intended to look at these—and the whole thing forms a mass; there is no grouping, form, or proportion, given to it. The front railings and gates are heavy and florid with gilded tips; the walk, of uncomfortable, crunchy gravel, has painfully correct flower beds on either side and rustic seats of iron. The foot scraper is crude and ugly, and you are not meant to scrape your boots thereon. The front door is of imitation oak or walnut, and there is now, alas! no quaint "tirlin pin" or knocker; ah! no, we no longer knock for admission, we have to "push." The tiles in the lobby arrest your attention and deviate your footsteps because of their vividness and slipperiness. The glass door, resplendent in red and blue glass, still looks painfully newly varnished and actually sticks as you push it open. If you gain the further side of the coat and hat stand without several more "tiles" and sticks obstructing the way—for hats have a knack of falling off those stands—you will find yourself confronted by the staircase, a stretch of wood and varnish, with more red and blue light. The lobby lamp has an

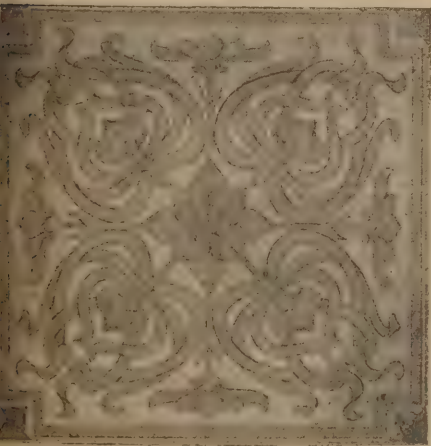


ELECTRIC BELL-PUSH. DESIGNED AND EXECUTED BY EDGAR SIMPSON.

almost toy-shop appearance, while the cornice and plaster ornaments which literally cover the ceiling are too much for any words. The ceilings are too high; the windows far too large, admitting too much light, and letting all the heat escape; the venetian blinds are green and noisy; the chimney place is a sham; it is of iron or slate or wood, but pretends to be much more, something finer; its proportion is bad, as is also that of the doors; cornices, architraves and mouldings are all too large. In fact, those things are used in houses, up the street and down the street, without their fitness ever being considered. Nor will I guarantee the efficacy of drains and flues, for I have seen the smoke finding an outlet for itself at the gas-alier (another wonderful feature) and at the window. But enough; everywhere unrest, bad taste. Art conspicuous by its absence.

Nothing has form, proportion, dignity, beauty, but on every hand are inconsistencies in design and colour, untruthfulness in construction, and very often bad workmanship, all the result of a work over which there was no presiding spirit, on which there were no love and knowledge lavished. Why make your door of deal and then grain it oak—that

\* Abstract of a paper read before the Perth Architectural Society on March 14th, 1899.



DESIGN FOR GLAZED TILE (PRINTED OUTLINE). BY HILDA M. PEMBERTON.



form of decoration dear to railway companies? Why have your chimney-piece of wood and make it imitate marble? Why hide that joining in the wood if it is well made? Why elaborate with ridiculous ornament the front of your house? Some people ignore the vulgar show and look round the corners. Why build your house of brick or wood and then try to make it resemble stone? Why do we do all this and then make a futile effort to make our home "artistic" by smearing jim-crack furniture with enamel and crowding our rooms with ill-made, impossible furniture, screens and vases, making them like some fancy bazaar? Everywhere we have superficialities, shams, inappropriate ornament, ponderous ugliness.

This is not Art because it is not true, not genuine. Architecture is building in its best form, constructive and artistic, and if truth is not in the foundations it is idle to suppose that it can blossom forth into beautiful forms on the façade. Let everything we build be *genuine*, let that be the first essential. Let us employ our materials in an honest straightforward manner, putting forth our best skill and best workmanship, allowing nothing to be hidden, nothing to appear what it is not, everything to perform its own part and tell its own story. Begin at the foundation, working from a genuine specification, with genuine materials, even up to the very apex, and the result will be a genuine whole, highly artistic, because of its genuineness and truth.

How much happier might the people be if, instead of the squalor and sordidness characteristic of our most recently erected towns, the streets were lined with beautiful buildings; the houses more attractive and artistic; the churches more worthy of our creed. "A picture remains in the gallery; a book upon its shelf, but our buildings are for ever before our eyes on our daily walks, and depress each passer-by by their ugliness, or elevate him by their beauty."

Do not suppose for a moment that I in any way suggest a mere system of picture making, houses that will merely be pleasing to the eye. They must, in the first instance, be constructed on the soundest principles, and every precaution taken to ensure perfect sanitation and hygienic requirements. They must not only be adornments to the town, but must do something to alleviate disease, suffering, and death in all densely populated centres, teaching the people not only the laws of beauty, but helping them to lead cleaner, sweeter, healthier lives. I plead for improved Architecture, for more beautiful buildings. I do not mean highly decorated ones, but buildings which shall be beautiful irrespective of their adornment, beautiful in form, conception, proportion and grouping. I do not say that elaborate buildings may not be highly artistic, but unless the same magnificent scheme can be carried throughout, and that correctly, the mere ornament is futile. Men have not performed their duty when they build an erection for the accommodation of themselves, their manufactory or trade; they still owe a duty



DADO PATTERN. BY HILDA M. PEMBERTON. (See p. 275.)

to their fellow men, to Art, and to themselves. The amenity of their city is in their hands. Let them remember that all that remains of a people are its literature, painting, and architecture, and that every time a man builds he raises unto himself a monument, which shall remain when he is not. It is not sufficient to have a history of Art, but it is our duty to add to it worthily, and to have present day architecture of a high order. "Degrade first the arts if you would mankind degrade," says Blake.

And now I should just like to point out that while everyone who builds bears a great responsibility, yet it is to the architect we look to carry out every scheme worthily, and his responsibility is still greater. His duties are multitudinous and are daily becoming more so, but this is no excuse for his doing bad or slovenly work. He must thoroughly understand his client and grasp his client's ideas; if the building is for manufacturing purposes he must acquire a knowledge of the requirements; if a house, of the people's habits and so on, and by dint of going into and mastering every detail, however small, produce a whole as nearly perfect as may be. He must spend his client's money to the best advantage, and spare himself no pains to produce a building, well and economically built, and an architectural acquisition to the town. He must see that the work is carried out strictly in accordance with his intentions and that the proper materials are used, contenting himself not only with specifying the best materials, but, by means of supervision, seeing that they are used and everything is carried out correctly. He must take his client along with him in everything, reasoning gently, but firmly, against those proposals of which he does not approve and which he knows to be wrong, accepting thankfully the suggestions that are good; every new undertaking will then prove itself to be an education to both client and architect and will contribute greatly to the advancement of good art.

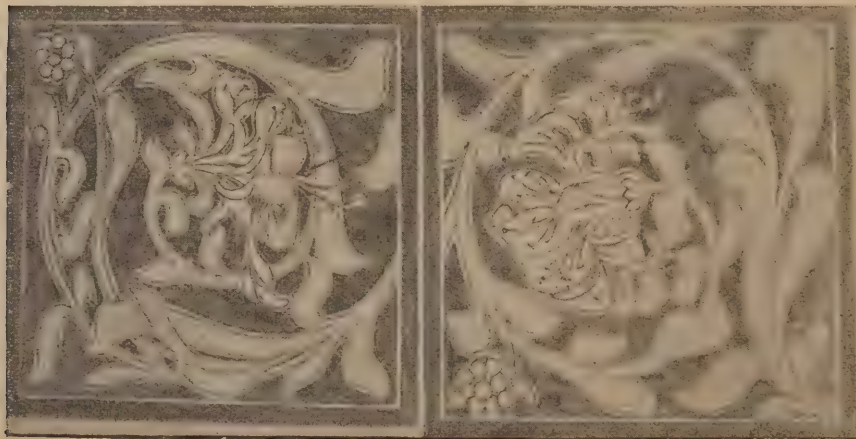
Happily we have to-day architects who are working hard to raise the standard of our art, and we have artists co-operating with them and lending them valuable assistance. Our delightful domestic architecture has been revived and is built at the hands of such

eminent architects as Norman Shaw, Ernest Newton, C. F. A. Voysey, John Belcher, Grayson and Ould, and others. A hundred years ago the artist was a man who painted large oil pictures, the larger the better. To a great extent, this idea still lingers, but it is being replaced by the artist suggested by the times of the Early Renaissance, when each painter was a craftsman in some form of art work. As it was then, it is beginning to be realised now that to the true artist no form of art work is other than acceptable. Already in some parts is great improvement effected; already we have men who realise their duty and who are establishing beautiful communities; but ruts are deep and mankind is callous, and we must content ourselves with helping on and seeing that the progress, if slow, is sure.

I take it for granted that you are all more or less interested in this, and that the object of an Architectural Society is not the study of Architecture alone, but that you take a sincere interest in Art in the widest sense, and are anxious to promote art culture amongst the people. This, indeed, is your duty. How, then, may we pursue this path—a path bordered with pure delights, leading to a goal which is golden and satisfying beyond measure? It is only by dint of hard, unceasing work that we can ever hope to be masters of our profession to any extent; it is only by paying careful attention to everything pertaining to the office work, from the merest detail, observing system, care and thoroughness, acquiring a complete knowledge of construction and design, attaining proficiency in draughtsmanship, and conjointly with this a regular inspection at the building itself, learning how things are actually done, and seeing what you design and draw on paper perpetuated in lasting material. Although it may be given to few of us to become famous architects, yet we have all our own part to perform, however small, and just as the old master painters used to employ their pupils to paint in a seemingly unimportant part of their immortal canvasses—a part, however, that helped to make up the magnificent whole—so must we endeavour to make our small part thorough, realising that "trifles make perfection, and perfection is no trifle." We can study in our schools of art, in our academies, our galleries, and in our libraries; we can study in the woods, by the river, on the hill.

Nature lies before us, boundless, inexhaustible, full of beauty, ceaseless change, romance and mystery. Her fountains are filled with unending knowledge and still unplumbed depths. We have the masterpieces of the past and those of to-day to study and enjoy. Do not give way to criticism or mere fault-finding, which is futile and unbeneficial, but look earnestly and searchingly for what is good and beautiful.

The history of Art is long, but it is not yet finished. The age of Painting is not past. The time of Sculpture has not yet been concluded. Literature and Poetry shall still remain to sing of what is good and beautiful. Architecture has not ceased to rear homes for man and his arts. These things belong to all times and all peoples, and though the eras to come may not be like those of the past, we look with confidence into the future, feeling assured that man will continue to teach that Art is truth; that he will still labour on



TILES. BY HILDA M. PEMBERTON. (See p. 275.)



stimulated by the golden record which trails behind him into the shadowy past, and continue in these paths which have been trod for countless ages to the Glory of God and the betterment of man.

## ACCOUNTS FOR ARCHITECTS.

By HENRY CALDER MARSHALL, F.C.A.

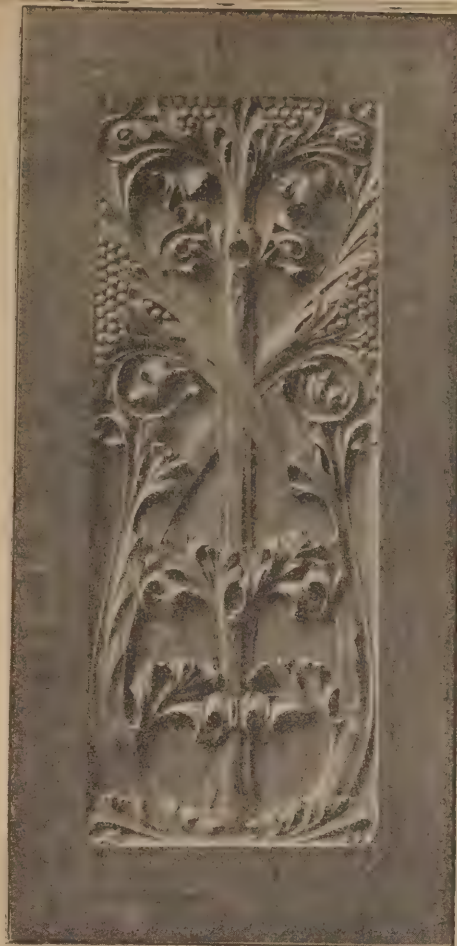
[I]N the hope of gathering some useful information on this subject, I recently called upon two architects of my acquaintance. In reply to my questions as to how they kept their accounts and what books they made use of, architect No. 1 replied, "Accounts! books! Oh, yes! I have my bank pass-book and keep a letter book; now, what more can I want?" said architect No. 2, "I keep a letter-book and have my bank pass-book, and they are quite enough for me."

Now I hope you will not imagine that I for the moment think, that if I called upon all the architects whose names appear in the "London Post Office Directory," I should receive similar information. I should hope not; but one thing I feel sure of, and that is, there are very many professional men who keep no accounts at all, or who have a system of accounts, somewhat similar to my friends', consisting of bankers' pass-book and a letter-book, totally inadequate either to the requirements of their business or even as a record of their household and personal expenditure.

I would therefore call my readers' attention to a few remarks, firstly, as to the necessity and advantage of keeping proper accounts; and, secondly, as to a simple system of accounts, suitable for the profession of an architect, and I would ask their indulgence if I appear to go too much into detail. We have to build up as we go along, "Line upon line, precept upon precept, here a little, there a little," until we have the fabric fully completed, a credit both to the architect and the builder—or I should say to the accountant and book-keeper.

Firstly, then, as to the necessity and advantage of keeping proper accounts. Among other purposes, accounts, proper and correct, may be required for the following:—

- (a) Showing the amount of business done, or the purpose of admitting a new partner for partnership adjustments;
- (b) Showing the profits for the purpose of income tax, or for production to the assessors or commissioners;
- (c) For production to bankers or others in the case of requiring a temporary loan;
- (d) For production (if necessity requires it) to the Law Courts;
- (e) For showing profits, in order to arrive at the value of the goodwill and for ascertaining



CARVED OAK PANEL. BY JOSEPH PHILLIPS.  
(See p. 275.)

the amount of outstandings for the preparation of the accounts for probate, or for the administration of an estate in the case of intestacy;

(f) And last, though not least—but let us hope it will never be required by any reader of the BUILDERS' JOURNAL—for the purpose of the deficiency account under the Bankruptcy Act.

Let us now deal with each of these headings *seriatim*.

(a) Suppose an architect in practice finds his business increase in such a way that the work becomes too much for him. He requires a partner to bring in a certain amount of capital and to relieve him of some part of the work. The architect, knowing that he has a good and well-established connection, is naturally not particularly anxious to let anyone come in and take a share of his hard-earned business for nothing, so decides to make the incoming partner pay a good round sum for the goodwill, and arbitrarily fixes an amount. The incoming man demurs at the figure asked and enquires how it has been arrived at. "Oh!" says the architect, who like my friends relies on his bank pass-book, "look at what my takings have been," and so he takes the total of the "payments in" side of the pass-book quite oblivious to the fact that there might be items received in the business that have not been paid into the bank, and *vice versa*, there might be sums paid into the bank that do not pertain to the business; there might also be loans which would go to swell the total, without really, of course, being takings of the business; there might, also, be amounts of cheques returned for re-endorsement and paid in a second time; and above all the pass-book might be wrong—bankers' clerks like other men are not infallible. On the other side there might be loans repaid and cheques paid in but returned for endorsement, and, certainly, any cheques that have been drawn but not presented, would not appear in the pass-book at all.

The banker's pass-book is all very well and useful for showing the state of your banking

account at any given date, but for no other purpose. It cannot take the place of a properly drawn up and correctly kept cash-book.

The incoming partner objects to taking only the pass-book figures, so an accountant is called in, who, with a great deal of perseverance and at a considerable expenditure of time, and at the expense of the architect, produces an account by analysing the pass-book and writing up a proper cash-book therefrom, and from the counterfoils of the paying-in book and cheque-book, and going carefully and systematically through the letter-book, and writing up commission book, etc., from it. This account shows the profit to be considerably less than it was thought to be, and much to the chagrin of the architect the negotiations fall through. Now had there been an adequate system of accounts showing properly the takings and the net profits of the business, correct figures would have been submitted in the first place to the proposed incoming partner, and the negotiations would probably have been carried through to the satisfaction of all concerned.

Of course, where a partnership has already been entered into, it is more than ever a necessity to keep true and correct accounts and to have a proper system of book-keeping. Do we not often hear of disputes and disagreements between partners, and of final adjustments of partnership accounts.

You will, I think, quite see that with only the pass-book before us we get no information on the following points essential to the making up of a correct balance sheet and profit and loss account:—

1. Money owed and owing at the commencement of the financial year.
2. Money owed and owing at the close of the financial year.
3. Business in hand, both at the commencement and end of year.
4. The separation of capital and revenue accounts, and the raising of accounts for the depreciation of leases, furniture, &c., also the reserve for bad debts.

It is clear, therefore, that the pass-book does not have a very prominent place in a system of book-keeping. As I have already stated it is a useful book, but only in a subsidiary way, as a means of showing the state of your banking account and for reconciling therewith the balance of cash as shown in your cash-book, but it does not show either the gross takings or net profits of your business.

(b) Accounts may be required for the purpose of showing the profits for income tax or for production to the assessors or commissioners.

How many complaints we hear on all sides



PIERCED AND REPOUSSE COPPER DOOR-PLATE AND ELECTRIC BELL-PUSHES. DESIGNED AND EXECUTED BY EDGAR SIMPSON. (See p. 275.)



CARVED OAK PANEL. BY JOSEPH PHILLIPS.  
(See p. 275.)



of the iniquity of the income tax and the unreasonableness of the assessors and commissioners. Of the iniquity of the tax I have nothing to say—it has been imposed and we must submit, cheerfully if we can. There is not a single individual, I take it, who would not rather be in a position to pay the income tax collector a larger sum than he already does. Of the unreasonableness of the assessors and commissioners I have this much to say, that I have always found them very amenable to reason, and that in any dealings I have ever had with them I have been treated with every courtesy; of course, we cannot expect them in every case to see eye to eye with us, and it is this, I think, that causes people to complain of their unreasonableness. They have their duty to perform, not always a pleasant task, and they are not often thanked for performing it.

It is wonderful to me how elastic, as a rule, people's consciences are. When filling up the income tax return they seem to look at their profits through the large end of a telescope,

reliable data to go upon, especially if your accounts have been made up or audited by a duly qualified accountant.

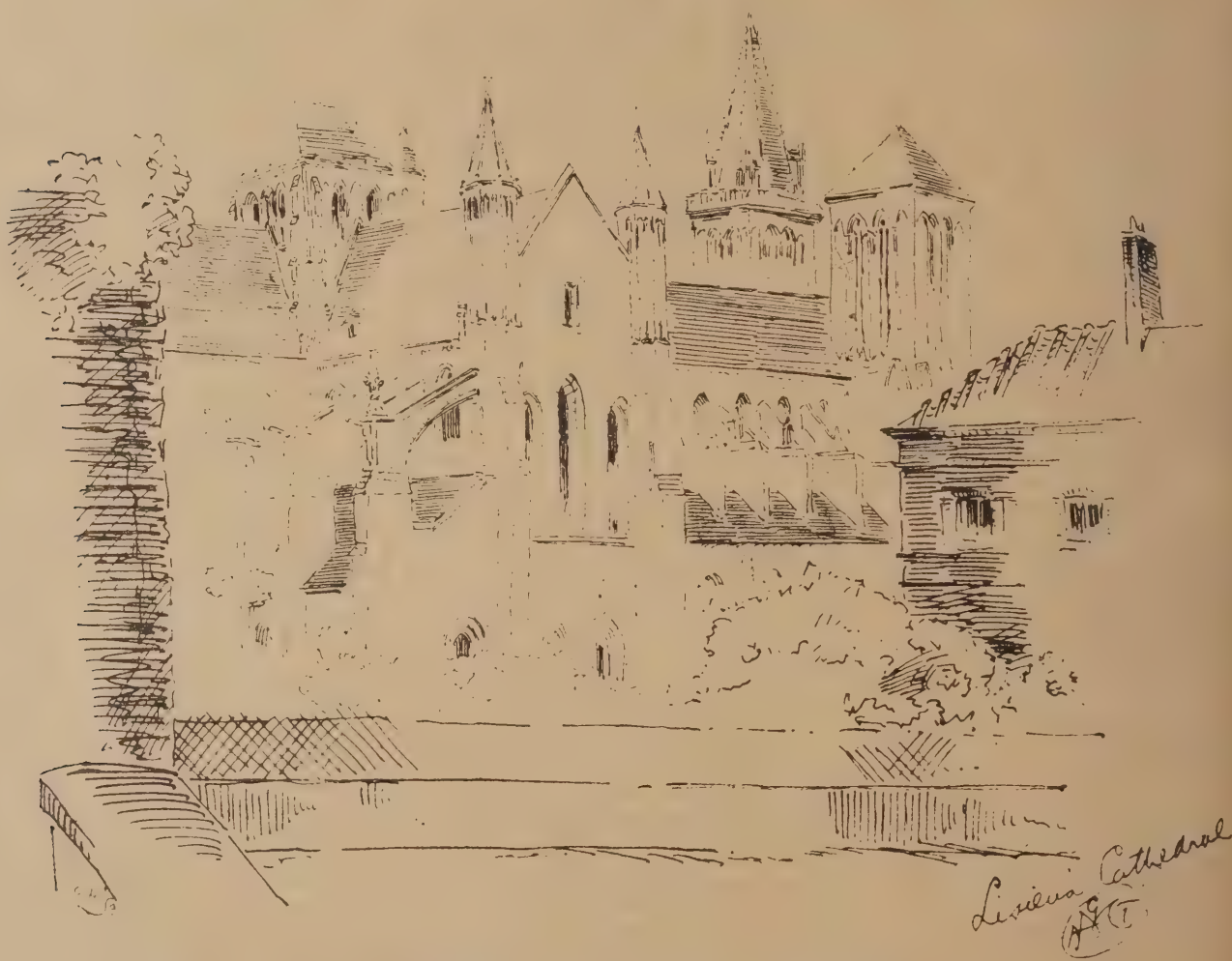
(c) Accounts may be needed for production to bankers or others in the case of requiring a temporary loan.

It may be that a time comes when financial assistance is required to tide over some temporary difficulty, and the architect naturally turns to his bankers for such assistance. The first question that will probably be asked is: "Where are your accounts?" If the answer is: "Oh, I keep none, I rely on my pass-book," there is every likelihood that he will be politely told that the money cannot be advanced. See in how much better a position the man is who can produce a properly drawn-up balance sheet and accounts, especially if the figures have been verified by a chartered accountant; even, I take it, if the profit and loss account only show a small margin of profit. The banker sees that his client is a careful man. In the balance sheet he finds a

We appoint our friends executors of our wills, but do we at the same time try to ease their work by having our accounts in such order that, when we are called to "join the great majority," the work we leave our executors to do is comparatively easy and straightforward? Not if we only leave them a bank pass-book and letter book, together with a chaotic mass of vouchers and papers to wade through. Poor executors! Ill requited by the legacy of twenty-five or even fifty guineas mentioned in the will.

(f) Accounts may be required for the purpose of the deficiency account, under the Bankruptcy Act.

The deficiency account is to the perplexed and harassed bankrupt the most unsatisfactory of all the forms he has to fill up. It is so difficult to account for the disposal not only of your income but of your deficiency—that is, the difference between your assets and your liabilities; and, if you have only your pass-book as a guide, I fail to see how it can be



LISIEUX CATHEDRAL. SKETCHED BY G. A. T. MIDDLETON.

minimising them down almost to vanishing point; but give them a new road or a railway compensation claim to make up—what a change—the profits, barely visible for income tax purposes, assume gigantic proportions. It is human nature, I suppose, so we must bear with it.

With only a pass-book I do not see how the Income Tax return can be properly filled up, and the ratepayer stands a chance of cheating either himself or the Government if he relies upon getting his information from that source alone. The pass-book might contain dividends from which the tax has already been deducted, and he would be paying twice over—a thing, I think, nobody ever wishes to do.

If you have a properly drawn-up balance sheet and profit and loss account before you, the matter becomes much easier, and, should you be called upon to appear before the income tax authorities, you will have some

statement of his client's liabilities and of his assets, and can judge therefrom as to his solvency, and consider whether or no it would be prudent to make the loan.

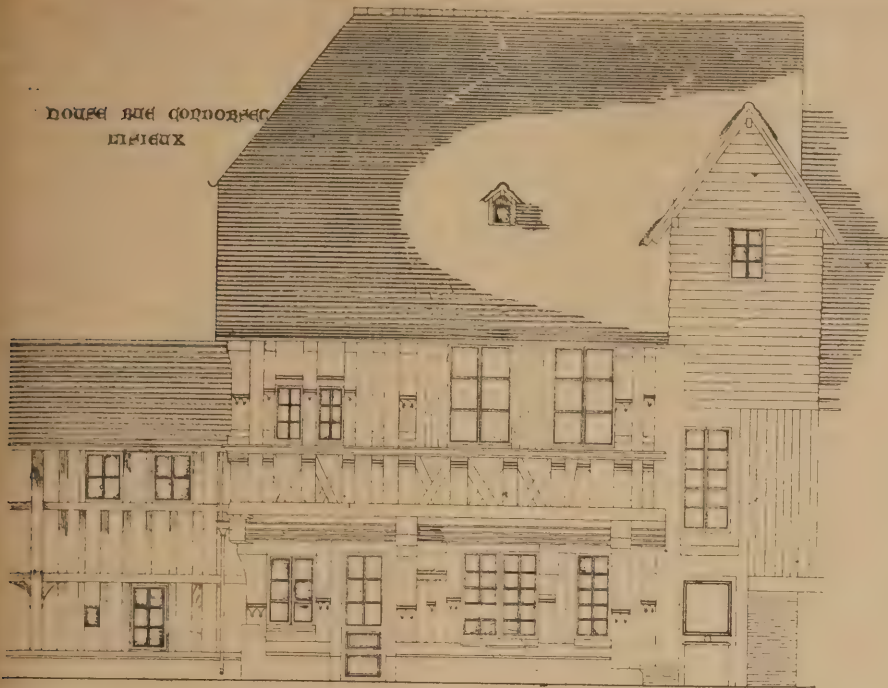
(d) Accounts may be required for production as evidence in the law courts.

In such a case how awkward it would be if you had only a bank pass-book to produce; as we have seen, nothing satisfactory can be got from it. You may, through not having proper books, lose your case, and retire from the court a wiser and a sadder man, determined, perhaps, to keep your books on some proper system, and not to rely any longer on the broken reed of a pass-book.

(e) Accounts may be required for showing profits in order to arrive at the value of the goodwill, and for ascertaining the amount of outstandings for the preparation of the accounts for probate or for the administration of an estate in the case of intestacy.

done, for even with properly kept books it is no easy task, and woe betide you when you appear before the Official Receiver with an unsatisfactory deficiency account. Then there is the penalty attached to the neglect of keeping a proper system of accounts. The Act provides that under certain conditions, and on proof of certain facts, the Court shall suspend the discharge of the bankrupt. One of the facts reads as follows:—"That the bankrupt has omitted to keep such books of account as are usual and proper in the business carried on by him, and as sufficiently to disclose his business transactions and financial position within the three years immediately preceding his bankruptcy." The meaning of this is that his books must be kept in such a way as to show at once, without the necessity of investigation by a skilled accountant, the state of his business.





HOUSE, RUE CONDORSET, LISIEUX. DRAWN BY J. EDWIN FORBES.

So far I have been trying to prove by a negative argument, if I may so term it, the advantages of keeping proper accounts, or, I should say, the disadvantages of not keeping them. Let us, in a few words try to prove the same by a positive argument.

We all like, I take it, to know how we are going along, what profits we have made during the year, so that we may perchance be able to launch out a bit, or put by something for a rainy day, or indulge in some extra luxury, enjoy a more protracted holiday, or, perhaps, treat ourselves to a new bicycle, or a camera, and so follow up a pet hobby. How much more we enjoy these things when we know the money is really earned and that our accounts are all correct. Besides, you know without an adequate system of book-keeping, how can we look after our business efficiently, or know all the necessary details. Should, however, misfortune smile on us, that is, if misfortune can be said to smile, and our accounts show a loss instead of a profit, how much better it is to face the difficulty and to know the worst at once. And if we keep our books on a proper system it is even a grim satisfaction to know where the shoe pinches and so to regulate our expenditure, and if we are wise men retrench where necessary.

I think now that all my readers will agree with me that there is an advantage in keeping proper accounts, and I hope that they will even go so far with me as to say that it is an absolute necessity.

In France and other countries where the Code Napoleon prevails, it is obligatory for everyone in business to keep proper books, and not only so, but in the case of one book, "the journal," each page is numbered and stamped and is revised by the President of the Tribunal of Commerce, the mayor, or other authority. No blanks, erasures, tearings out, or addition of pages are allowed, and you are only permitted to have one journal at a time, which, when finished, is so marked before a new one is allowed to be commenced.

(To be continued.)

A Cottage Hospital is to be erected at Blairgowrie, at a cost of about £5,000. The accommodation will consist of two large wards for male and female patients, and a special ward for isolated cases; there will also be a matron's room, operating room, dispensary, bath-room, kitchen, &c. The building will be of Blairgowrie Quarry material, with Bannockburn stone for facings. Mr. Lake Falconer is the architect.

## SOME NOTES FROM LISIEUX.

By G. A. T. MIDDLETON.

NORMANDY has always been a somewhat favourite sketching ground for the architectural student, and Lisieux has come in for quite its fair share of attention. Now that a direct steam-boat service has been arranged from Newhaven and Caen it is likely to become more popular than ever, as it will be easy to reach and comparatively inexpensive. In fact, a holiday in Normandy costs but little more than one in England, while there is all the

added stimulus of a foreign tongue and foreign ways. The general risk is that the student will acquire a knowledge of foreign rather than of English architectural details, but this is not so likely in Normandy as in most other parts of the Continent. For many hundred years Normandy and England were under the same rule, and communication was close and constant, so that the work of part of France and of the South of England may naturally be expected to be of similar character.

In Lisieux, both the similarities and dissimilarities are easily found and noted. There is one great church, formerly the Cathedral, the Romanesque work of which has been restored, and its character greatly lost, but this is scarcely the case with the Gothic. Even the light perspective sketch of the north transept, made one sunny day a few years ago, shows long lancet windows which are much more English than Continental in appearance, in fact, such thirteenth century work is very rare abroad, it being almost always traceried, and the windows being generally wider. But here at Lisieux it is as simple as at Whitby.

This is not the case, however, with the little niche in the south transept, which is essentially French, having deep semi-Corinthian capitals, octagonal Abaci and roll moulding, such as one would rather expect to find in England in the latter part of the twelfth, instead of the thirteenth, century. It is a pretty little feature, and worthy of a measured drawing rather than a slight sketch, though these sketches have other value in giving an idea of concrete form, which is sometimes of greater importance than mere planned elevation. The arched sill will be noticed rather as a curiosity than as something to be copied, and is indicative of a vault beneath.

In the town itself are found a considerable number of old half-timber houses. Most of these are crowded into narrow streets; but one at a corner is sketched by everybody. The large over-hanging gable is essentially French, and is a feature found in many of the neighbouring towns, particularly at Caen, where there are several examples, and in other respects the work differs from any seen in England, particularly in the great use of light, short, diagonal timbers. In Kent for instance, light vertical timbers and



OLD HOUSE, LISIEUX. SKETCHED BY G. A. T. MIDDLETON.



long diagonals would be found, in our north-western counties the timber would be heavy and the panels cusped, while in scarcely any cases would the design be so broken up or so picturesque as in Normandy. Also as shown in the sketch there is a plain iron grille to these old houses of Lisieux, which is of interest, not from its beauty but for its great strength and the immense amount of labour expended in its manufacture; each vertical and each horizontal being alternately worked into

## OLD ENGLISH WOODWORK at Sizergh Castle and Levens Hall.

By E. P. MILNE.

IN connection with the measured drawings of woodwork given this week in one of our inset plates, the following details of the

surrounded by oak wainscot of very fine design, and said to be the best example of manœuvring of the Elizabethan period. The paneling is in two stages with a cornice, and divided into coupled compartments with paneled pilasters. The ornament is all inlaid in the solid, and consists of white holly and black oak on brown oak ground, with black panel in the intermediate pilasters, the whole giving a very rich effect. The original fine-paneled plaster ceiling, with pendants, and shields of arms, and figures of animals, still exists at Sizergh Castle, the ceiling at South Kensington being copied from it. My drawing was made some twenty years ago, from the room as then existed in the castle.

*Levens Hall* is the residence of Joscelyn Fitzroy Bagot, Esq., M.P., D.L., J.P. The mansion, which is of the Elizabethan period, was remodelled by James Bellingham, Esq., whose initials, J.B., and the date 1595, are carved in the upper panels of the magnificent oak chimney-piece in the drawing-room; this was illustrated in the BUILDERS' JOURNAL, August, 1897, in connection with the visit of the Architectural Association. The two staircases and details of panelling are excellent types of the woodwork of the period. In the dining-room there is a fine old oak chimney-piece with fluted pilasters, the upper portion being quaintly paneled and inlaid with black and white woods; this bears the date 1586. The walls of this apartment are covered with old embossed and gilded leather. There are also some very interesting types of lead glazing in the windows. Levens and Sizergh are only about four miles apart, so it is very probable that the work was designed by the same artist, the details in both cases are almost identical. My studies from Levens Hall were also made many years ago, but I have no doubt that the interior is in the same splendid preservation as it was then, and I can strongly recommend this grand old mansion as "a happy hunting-ground" to any architectural student who is interested in the best period of Old English domestic wood-work.

**A Memorial Tablet** to the forty-eight officers and men of the Northamptonshire Regiment who fell in the North-west Front campaign of 1897, was unveiled at All Saints Church at Northampton recently.

**Sewer Fatalities.**—Three men were killed at Wigan last week while cleaning out a sewage manhole. They were overcome by poisonous gas and suffocated. Last Wednesday, while a number of men employed by the Rochester Corporation were emptying a cesspool, a man named Edward White became unconscious, owing to the poisonous gas, and fell in. Another man, named Wright, endeavoured to rescue him, and also became unconscious. Both were got out, but White was dead.

**A Remarkable Competition.**—A committee, under the presidency of the Duke of Genoa, met at Turin last week to make the necessary arrangements for an international competition, having for its purpose the delineation of the head of Christ, either in sculpture, painting, or drawing. The dividable price for the best work is 3,000 lire, and all the works sent in will be exhibited on the occasion of the unveiling of the Victor Emmanuel monument at Turin in September next. The idea of the competition originated with the well-known painter, Carpanetto.

**Uniformity of the Pavements** of the Metropolitan streets was one of the subjects advocated at the seventy-fifth annual meeting of the Royal Society for the Prevention of Cruelty to Animals last Wednesday. In a report presented it was stated that at present time each vestry determines whether the carriage-ways within its own district shall be of granite, wood, asphalt, or macadam, and the result is that horses suddenly meet with dangerous consequences, from one to the other in the various thoroughfares. The Society does not state which material is best suited for animals, but only seeks great uniformity.



NICHE IN SOUTH TRANSEPT, LISIEUX CATHEDRAL. SKETCHED BY G. A. T. MIDDLETON.

a ring which the other passes through, there are no continuous rods from top to bottom or from side to side, and the whole forms a most solid cage, which almost looks as if the room to which it belongs had been used as a prison.

**Two new wings have been added to Dundee Convalescent Home**, which include two large day rooms, reading and writing rooms, two dormitories, and five additional bedrooms. The cost has been about £4,000.

**A Mill Dam Burst** at St. Andrews recently, and damaged a brick partition within a new sanatorium which has been erected for the St. Andrew's School for Girls Company, Limited. Some masons' lime pits, stones, &c., were washed away, and old fishcuring premises in the Pends were damaged.

**Death of an Aberdeen Architect.**—The death has occurred at Bridge of Allan of Mr. William Low Henderson, head of the firm of Messrs. W. Henderson and Son, architects, of Aberdeen. Mr. Henderson was seventy years of age, and his firm have since the Disruption been architects for many of the Free Churches in the North of Scotland.

buildings from which they are taken will probably be of some interest:—

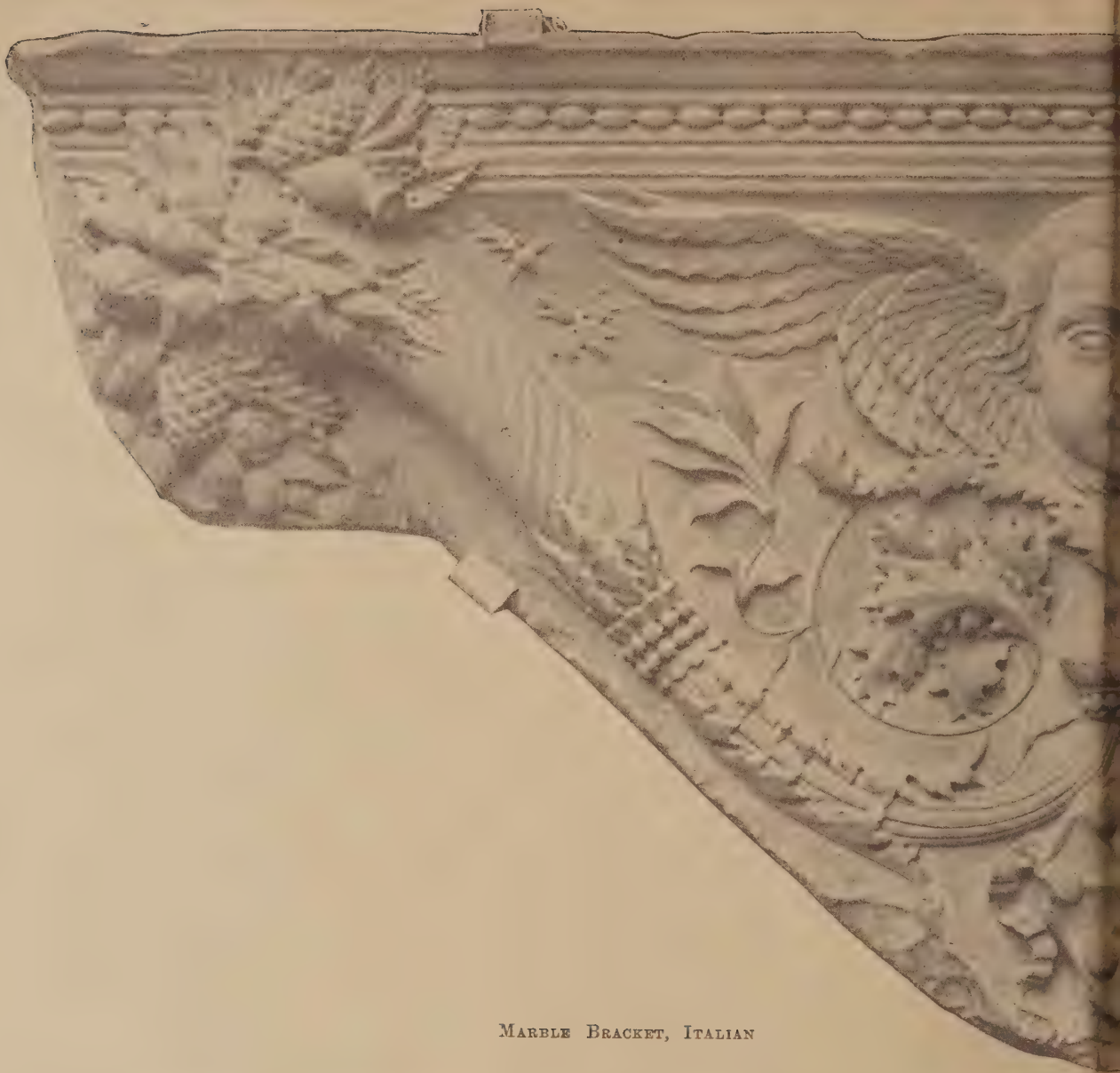
*Sizergh Castle*, the ancient seat of the Strickland family, is a castellated mansion on the bank of the river Kent between Kendal and Milnthorpe, and was erected at various periods from the fourteenth to the close of the eighteenth century.

The castle now consists of a central block with side wings, thus forming three sides of a large courtyard. The earliest portion of the building is the tower. The rooms on the first floor were elaborately fitted up during the Elizabethan period, and comprise the drawing-room and a bedroom, known as the "Queen's Chamber." The drawing-room is wainscoted with oak panelling relieved by fluted and paneled pilasters, and has an elaborately carved mantelpiece with shields of arms, and the date 1564. On the second floor was the splendid apartment known as the "Inlaid Chamber," supposed to have been originally used as a banqueting hall. The "Inlaid Chamber," which measures about 24ft. by 19ft., was in later years used as a bedroom, and was until 1891 (when the panelling was sold to the South Kensington Museum for £1,000)



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MARBLE BRACKET, ITALIAN



CARVED FRIEZE OF A CHIMNEY-PIECE IN "PIETRA SERENA," ATTACHED





(FLORENTINE): LATE 15TH CENTURY.



TO ANTONIO ROSSELLINO (B. 1427: D. 1478) OF FLORENCE.

FROM SOUTH KENSINGTON MUSEUM."

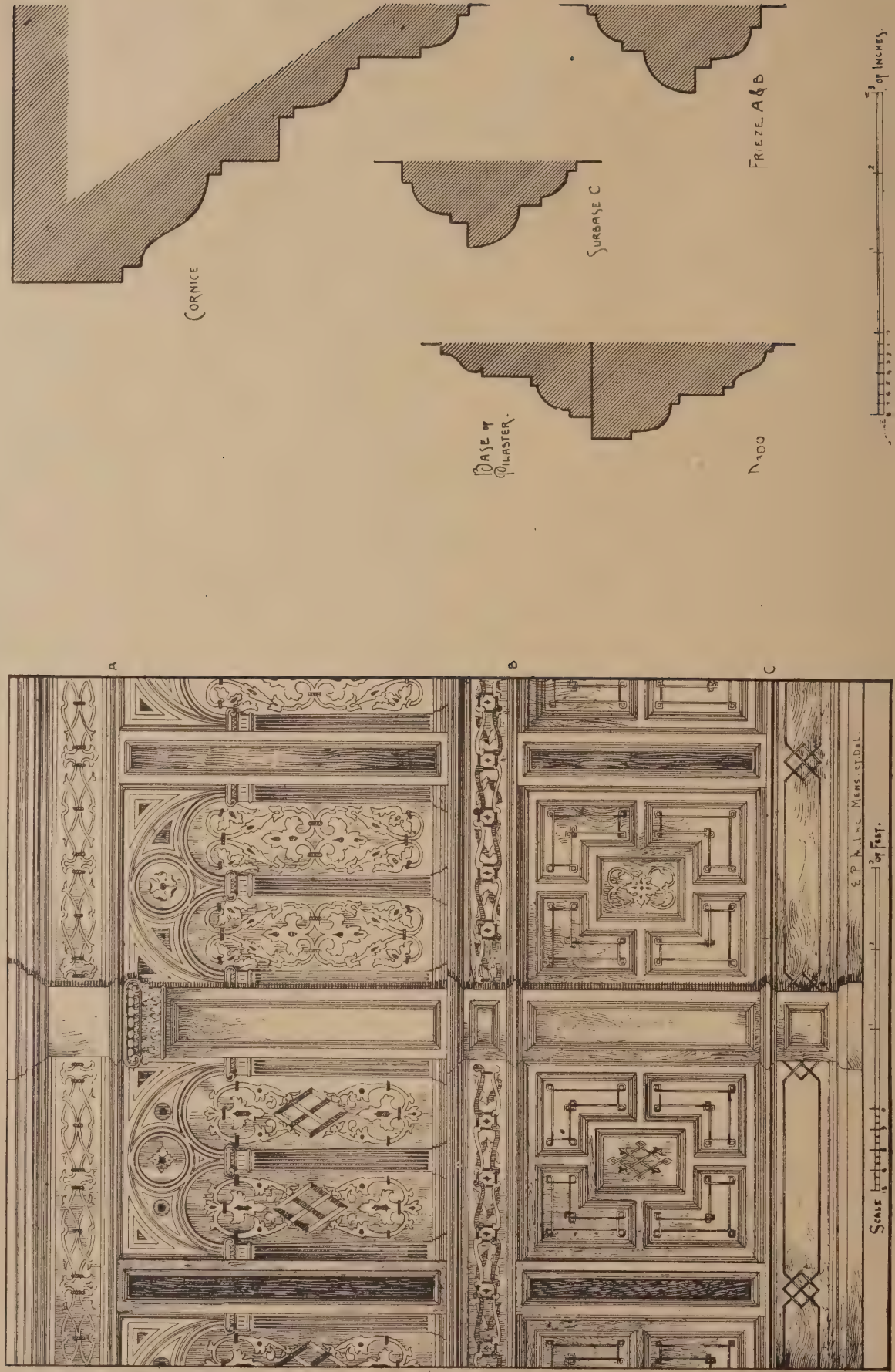


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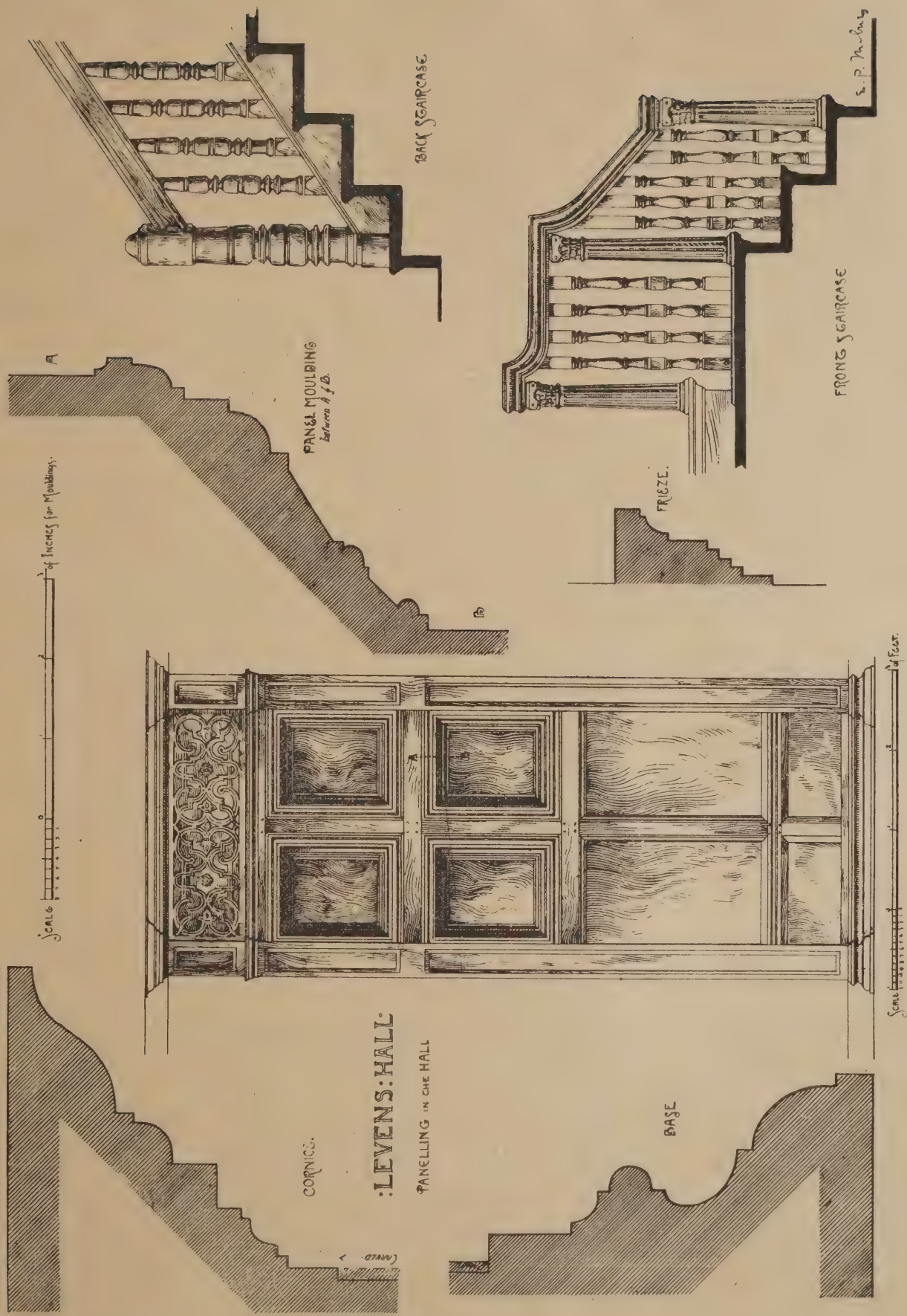






SIZERGH CASTLE: PANELLING IN INLAID ROOM. DRAWN BY E. P. MILNE.





LEVENS HALL: PANELLING IN ENTRANCE HALL. DRAWN BY E. P. MILNE.







## Correspondence.

### OUR ST. PAUL'S CATHEDRAL PLATE.

To the Editor of THE BUILDERS' JOURNAL.  
LONDON, N.

SIR,—Surely your description of the engraving of St. Paul's Cathedral which you reproduce in your issue for May 31st, is inaccurate? You give the year of publication incorrectly.

It was published on May 27th, 1755, by the proprietors at the Golden Ball, in Little Court, Castle Street, near Leicester Square, price 12s., as may be seen at the bottom of the plate. As regards its interpretation, it is not easy to see how a section through both transepts looking eastwards can avoid showing the choir. Nothing is clearer than the interior of the eastern apse and the small altar supported on an eagle. Above that there seems to be a transparency of the Last Supper. Wren never made any design for the cathedral without a choir. The mere suggestion of such a thing is ridiculous. The design popularly called Wren's "original design" is shown facing page 110 in "The Three Cathedrals Dedicated to St. Paul," by W. Longman, F.S.A. (Longmans, 1873), and the succeeding plate, facing page 111, shows Wren's scheme for arranging the choir stalls and screen in the easternmost bay of this plan. There is as complete a choir arrangement in that plan as there is in the cathedral as actually built. F. C.

[Our correspondent is a trifle over positive. The engraving seems to have been published originally in 1755, but our reproduction was made from a later edition, dated 1801. Any one who will examine the original plan as published in Longman's book will see that this design may be described with rough accuracy as being "without a choir." There was, of course, accommodation for singers, and no doubt the eastern bay where this accommodation was provided would strictly speaking be called "the choir." The object of our note was simply to render intelligible the sectional drawing, which to readers unaware of the radical difference between the original and the present design might prove somewhat mystifying.—ED. B.J.]

### GAS STOVES FOR HEATING.

To the Editor of THE BUILDERS' JOURNAL.  
HUDDERSFIELD.

SIR,—Permit me through the medium of your valuable paper to call attention to the special suitability of gas heating stoves for vestries and classrooms in connection with churches, chapels, or schools. In many instances, the room is only required either before or at the close of the public services for the transaction of business matters in connection with various societies. Frequently, the verger or caretaker does not deem it necessary to light a fire, especially when it is contemplated the meeting will be a short one. In many cases, however, contemplated short meetings develop into long ones. It is anything but desirable to sit in a cold room. If a gas stove were available it could be lit at any time, and would render immediate service in the way of increasing the temperature of the room.

Considering that the principal gas undertakings in the United Kingdom supply and fix gas heating stoves free of charge for a few shillings rental per annum, the cost is not a matter for serious consideration, especially putting against the small expense the vastly increased comfort of those immediately concerned.

Gas stoves are peculiarly useful where a fire is only required intermittently as in the cases pointed out. An average sized stove will consume about twenty to thirty cubic feet of gas per hour, which would cost less than a penny. With careful usage the consumption is less. Possibly the suggestion may be of service in some instances.—Yours faithfully,  
EDWARD A. HARMAN, M.Inst.C.E.

## THE DISPUTE IN THE BUILDING TRADES.

To the Editor of THE BUILDERS' JOURNAL.

ST. HELENS.

DEAR SIR,—In view of the proposed conference between the representatives of the National Association of Master Builders and the delegates of the Allied Building Trade Unions, it is advisable for the representatives of the Master Builders to take note of the bricklayers' demands in St. Helens, Lancashire, for which the men came out on strike on June 1st:—

(1) Walking time to be allowed when starting at 6 o'clock, 7 o'clock, and 8.30 a.m.

(2) Breakfast, 8 o'clock to 8.30. Dinner, 12 o'clock to 1 o'clock.

(3) Employers to be responsible for men's tools where lock-up cabins are not provided.

I think the unreasonableness of these three demands needs little explanation. As to

(1) Why should the master be called upon to allow a man walking time after first starting, when he has to pay labourers to be there to attend to the bricklayers, and any failure on the bricklayers' part to be at his work at first start makes the labourers' wages a considerable percentage more costly than it should be?

(2) A demand is made for meal hours at a certain time, which if granted would leave an employer powerless in cases of emergency, viz., in many places where an employer is called upon to do a job which may be very important about machinery, which machinery might be stopped at these certain hours, a master could not do the work without the sanction of the men's union. Instances have been known when men have been stopped all morning for rain up to 11.30 and 12 o'clock, and although the men have brought their meals on the job, and eaten them while waiting for the rain to clear off, they have been prevented from commencing work before 1 o'clock, although they have lost all the morning, because their rules stated they should have between 12 o'clock and 1 o'clock for dinner.

(3) If this was adopted it would be impossible to tell where a master's responsibilities would end.

I think the Masters' representatives ought to draw up their resolutions so as to protect local associations from having these demands to contend with.—Yours truly,  
THOMAS WOODS.

### REGISTRATION OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.

BATTERSEA, S.W.

SIR,—Kindly allow me through the medium of your influential paper to call attention to the limitations to that liberty of action, the pride of every Englishman, which is seriously threatened in the Bill for the Registration of Architects.

It is claimed that this Bill will raise the status of the architect in the eyes of the public, but should it not also aim at demanding greater efficiency from its members and debar those who are incompetent to superintend the construction of their own designs from practicing? As far as I can see there seems no promise or likelihood that the General Council which it is proposed to appoint will substitute radical changes in the present method and subjects in which candidates will be examined.

I have often wondered in what a hopeless muddle many architects would find themselves if the builder constructed the erection exactly according to their plans as originally placed in his hands, and withheld that advice and those suggested alterations in many details of the construction, without which the building could not be successfully completed. Yet I suppose if the Master Builders' Association had the power granted to them by Her Majesty to appoint several of their members to that general council their presence would be considered derogatory to the profession. Yet there is no doubt that a great improvement would be effected, and

much that is now theoretical would be replaced by that which is really practical; the staircases then designed would allow a man of ordinary height to walk to the top of them in an upright position, instead of crawling upon his hands and knees through a space of two or three feet when he got to the top; windows would then be designed with frames; timber would be specified in sizes which are actually imported and obtainable in this country, and also not be, as at times, specified entirely without knots, sap, or shakes.

No matter how well qualified a man may be by the possession of sound practical knowledge obtained by years of actual contact with work, and even should he possess artistic genius in addition, when this Bill comes into force he will be liable to heavy penalties should he call himself the architect of any building he may have designed and whose erection he may have superintended, and he will be unable to enforce the payment for any fees for the services he has rendered. Whereas, upon the other hand, a boy would be eligible who had been for a short period under the tuition—*sic*—of another certificated man, probably a blind leader of the blind, possessing in many cases no other qualification than a very superficial knowledge of the rudiments of the theoretical part of his profession, and with such a small practice, that the number of practical examples he could place before his pupils could be counted upon one's fingers. Yet after this course he would have every advantage denied to the practical man above referred to, and would be eligible for any public appointment after being branded with the trade mark of this architectural Trades' Union in which all members are equal and all receive the same rate of pay. Yet the Bill wisely specifies that this new brand of architect shall have studied three whole years and shall not be less than twenty-one years of age when this exalted title shall be conferred upon him, which would certify that he possessed all the knowledge necessary to instruct and correct one who, like myself, had studied the actual carrying out of work for over thirty years. The granting of this certificate to such a prodigy is surely not sufficient; the members of the council appointed by Her Majesty's Privy Council should request her to grant him letters patent!—Yours faithfully,

BUILDER and CONTRACTOR.

To the Editor of THE BUILDERS' JOURNAL.  
GLOUCESTER.

DEAR SIR,—Having read Mr. H. T. Bonner's letter of the 24th ultimo upon the subject of Registration, we specially note that portion relating to the treatment received by pupils.

We, the undersigned, can fully endorse his views upon this matter. We trust that you will oblige by inserting this in your valuable columns.—Yours obediently,

THREE PUPILS.

To the Editor of THE BUILDERS' JOURNAL.  
ST. JAMES'S HALL, PICCADILLY, LONDON, W.

DEAR SIR,—Your editorial on "Birthday Honours" in your last issue suggests one of the strongest arguments in favour of registration.

The reason of the lack of titular honours among members of the architectural profession is undoubtedly the result of its individual members, of however high standing and ability, having to share the drawbacks attaching to the profession as a body, for while honours of all kinds are scattered broadcast in the legal and medical professions, architecture has, we believe, only one knighthood, and, until we are recognised by the State and our profession closed to incompetence, we cannot expect that those in high place will recognise the claim our leaders have to the rewards of merit so freely bestowed elsewhere.

Yet the remedy is obvious. Let these latter take up the question of registration, and by their personal influence secure to the profession a legal standing.—Yours faithfully,

C. MCARTHUR BUTLER,  
Secretary, the Society of Architects.



## Views and Reviews.

### SKETCHES IN THE RIVIERA.

The Fine Art Society have now on view a collection of water colour drawings by Arthur Berrington, R.I., illustrating a season on the Riviera. The treatment of the different subjects varies very much; some of the drawings, such as Nos. 17 and 20, are elaborate pictures with much work in them, while others are the merest sketches. The value of the pictures seems also to be as variable as the treatment. On the whole it is a collection of bright, vivid, transcriptions of the brilliant atmosphere of the south, in which this atmosphere, if not always faultlessly rendered, is generally well suggested.

In one or two of the sketches this brilliancy has been rather overdone, which gives an effect that is, perhaps, gaudy, violent, and unpleasant, such as in No. 43—"King Carnival." In pleasing contrast to this is No. 46—"Where the Torrent Joins the Sea"—cool, grey, and restful. We think the painter has been most successful in the simpler sketches, where the effect has been obtained quickly and directly, such as No. 39—"On the High Road"—which contrasts favourably with No. 27—"Drying Sails," which is laboured and "faked up." Of the more elaborate drawings we like No. 20—"Place du Casino, Monte Carlo"—and No. 55—"Le Berger"—which seems in the treatment of the Shepherd and Tree to be a good attempt at something in altogether a bigger style. On the whole one can hardly say that these drawings are of first class interest or importance—both in drawing and colouring the artist seems uncertain—and it is doubtful whether they merit the dignity of a "one man show," but they are evidently done with a certain enthusiasm for, and appreciation of the subject—Nos. 16, 21, 34 and 42 are charming subjects—and they interest us accordingly.

### ACADEMY PICTURES.

In spite of all the shortcomings of the Royal Academy its annual exhibition remains, for the great majority of people, the most interesting Art exhibition of the year. We hear doleful reports every year of the poor quality of the work shown, and we do not deny that the pessimistic critics have much ground for their complaints. Yet, in spite of all that can be said, there has not yet been an Academy which did not contain a considerable number of genuinely beautiful works of Art, works that deserved not only to be carefully examined, but to be remembered. The best means we know of preserving in the mind the recollection of the pictures one has seen at the Academy is supplied by Messrs. Cassell's "Royal Academy Pictures." We do not wish to imply that this publication merely serves the purpose of a mnemonic. The five parts when bound together will form a sumptuous volume, which many who are unable to attend the exhibition at all will like to possess, for these illustrations represent the high watermark of "process" reproduction. Seeing that their appeal is to a wide public, not merely to a few art connoisseurs, it would be hypercritical to object to the inclusion of a certain number of pictures that no one ought to wish to see a second time, or to the exclusion of all examples of architectural art. The multitude, as we all know, take no interest in Architecture, and Messrs. Cassell cater for the multitude. For those who care for architecture, are there not the supplements to the "Architectural Review?" These and the "Royal Academy Pictures" together form the most complete and satisfactory souvenir that can be procured of the Academy for 1899.

"Royal Academy Pictures." In five parts, 1s. per part. Cassell and Company, Limited: London, Paris, New York and Melbourne.

### FOR ART TEACHERS AND STUDENTS.

It is hoped that the issue of these portfolios may be continuous, for the matter must be inexhaustible. The institution of the Technical Education Fund has led to there being

schools of design all over the kingdom, and these illustrations of art should be part of the furniture of every such school. The teachers, it should be remembered, have even more need of instruction than the pupils themselves, and the aim of the said schools of design being to provide instruction in every department of decorative art, a series of illustrations drawn from the best of the past cannot fail to be exceedingly valuable.

The sheets contained in these portfolios are unbound, and unrelated as to the subject matter; but there is wisdom and forethought in this apparent indifference to order, for it would not do to have each part so complete as to exhaust a particular subject; if it were it would be impossible for the series to maintain its even, deliberate course, and one can imagine the publisher saying: "Let the whole be subscribed for; the parts arranged afterwards." It is not supposed that there will be a very extensive demand for such things in the household, but the tendency is to think more of municipal than private establishments, and it is for the schools of art that they are provided. The writer, to make his point clear, must be allowed to suppose himself an art master. He would certainly require, if he were, to be supplied with all the parts of this publication, and would arrange the plates in such wise that they might at all times be shown to the students of any particular art or its history.

By permission of Messrs. Longmans we reproduce in our inset plates this week two examples taken from the first two portfolios that have been issued.

"Selected examples of Decorative Art from South Kensington Museum." Edited by F. E. Witthaus. Longmans Green and Company, 39, Paternoster Row, London.

### RURAL SANITATION.

Within the last three years our contemporary, "The Lancet," has conducted an interesting investigation into the relative efficiency and cost of house drainage; and the best means of providing a pure water supply and satisfactory sewage disposal for country residences. The reports of the special commission appointed to carry out the inquiry are now reprinted from "The Lancet" in convenient book form.

The first part of the volume refers to the construction and cost of plumbing and drainage work. Three examples are given for the purpose of illustrating the most common and dangerous sanitary defects found in ordinary houses. They include complete drainage plans of two terrace town houses, and a small suburban villa; each indicating the existing insanitary lines of drainage and positions of the old fittings. Corrected plans, showing an entire reconstruction of the work, and exhaustive reports upon the sanitary condition of each house are then given. These are accompanied by full particulars as to the best means of remedying existing defects, sketches of sanitary fittings, together with estimates of the cost of the alterations.

Exception might be taken to a few matters of detail and construction which are recommended in the examples described, but they are comparatively unimportant, and do not call for special notice. Some of the prices quoted are also rather high in these days of excessive competition, and in accepting them as a basis, it must always be borne in mind that the market value of materials and labour is continually fluctuating, especially for plumbers' work, where the current price of lead is necessarily an important factor.

It cannot be denied that the typical plans and particulars here brought under observation, would actually represent—in a greater or less degree—the very insanitary condition of many large town and country residences. If such a state of affairs could only be realised by the average owner and occupant, steps would soon be taken to remedy such grave defects at all costs.

The second portion of the work deals with water supply, drainage, and sewage disposal in connection with houses situated in rural districts. The various methods of obtaining a pure water supply, and the most approved

means of sewage disposal by the dry earth system, irrigation, precipitation, and biological filtration, are well described and illustrated.

The provision of an economical and efficient system of sewage disposal for a large country residence is often-times a very difficult problem to solve. This portion of the subject has accordingly received the most careful consideration. It is assumed that indoor closets and other modern sanitary conveniences are a necessity, so that the water carriage system of drainage must be applied to the mansion. The entire separation of rain and surface water is rightly insisted upon, in order that the total quantity of sewage may be as small as possible. A storage tank is provided for the rain-water, whilst surface water is discharged into a pond or ditch. The disposal of the sewage is effected by means of a "Scott Moncrieff" cultivating tank, the effluent being discharged upon a plot of prepared land. With ordinary attention this system would prove quite successful. For cottages and houses of medium size in rural districts, the Commission arrived at the conclusion that nothing more simple or economical than the old fashioned dry earth system—or Dr. Poore's modification of it—can be adopted.

We heartily recommend the book to all who are interested in the construction and maintenance of healthy dwellings; for it does not consist merely of a number of plans and suggestions, but a clear and concise statement of the principles underlying each phase of the subject is given. At the same time it furnishes an excellent object lesson on the method of making a systematic and comprehensive sanitary inspection and report; and for this reason possesses a distinct value to architects and others professionally engaged on works of similar character. Such distinguishing merit, combined with its moderate price, should insure for this book a wide circulation. T. E. C.

"Water Supply and Sewage Disposal in Rural Districts; and Plumbers' Work in Its Relation to Town and Country Houses." Price 1s. "The Lancet" Offices, 423 and 424, Strand, W.C.

### A WATER-COLOUR INDICATOR.

This indicator is a handy companion for the student of water-colour painting. It consists of a single sheet of thick drawing paper, and is coloured with pure water-colour pigments. It is arranged in the form of a semi-circle, divided into three angular divisions, each one-sixth of a circle. These are again divided into five by semi-circular divisions proceeding from the centre of the circle. The lower three angles at the base are coloured by the primaries,—red (rose madder), yellow (gamboge), and blue (French blue). Above these are arranged the secondaries, purple, orange, and green, formed by the combination of the primaries. In the next series are the tertiary tones, brown, olive, and grey or slate, formed by the combination of the secondaries, thus making them combinations of all three primaries. The two outside rings consist of twenty-one compartments, showing combinations of the sixteen pigments: Vandyke brown, sepia, brown madder, burnt sienna, raw sienna, ivory black, terra verté, Prussian blue, French blue, indigo, cobalt, vermilion, light red, rose madder, gamboge, and yellow ochre. We think that this chart could have been considerably improved by the arrangement of the tertiaries on an easier system for the young student to understand. Thus it might have been shown in which tertiaries the colours were balanced, and which were dominated by the primaries and secondaries. The theory of colour decoration has almost entirely changed within the last few years, and there are still many debatable points to be cleared up. Black and white were once thought not to be colours, but white has been shown by spectrum analysis most certainly to be one. So our theory of colouring will doubtless be further modified at no distant date. But, still, such a chart as this is of undoubted use to the architectural draughtsman and art student.

"The Water Colour Indicator." By Frederick Oughton. Price 3s. 6d. nett. London: George Philip and Son, 32, Fleet-street, E.C.



## R. I. B. A.

## BUILDING BY-LAWS: REPORT OF THE COMMITTEE.

AT the meeting of the Royal Institute of British Architects on Monday last, the following gentlemen were elected as Fellows:—Messrs. George Frederick Bodley, A.R.A., Edwin Arthur Johnson, George Augustus Bligh Livesey, Edwin Arden Minty and Andrew Murray. Mr. Jasper Wager was elected as an Associate, and Comte Paul de Suzor, of St. Petersburg, as an Honorary Corresponding Member.

The following report, submitted by the Special Committee appointed by the Council to consider the Administration of Building By-Laws in non-Metropolitan Districts, was then received and considered:—

The committee have considered the present condition of building by-laws in England outside the County of London, and their administration.

Some of the larger municipalities are governed in these respects under private Acts of Parliament, but the great majority of boroughs and urban districts have adopted by-laws under the Public Health Acts which have been confirmed by the Local Government Board, and they are for the most part founded on, though they do not absolutely follow, the model by-laws issued by that board.

Around some of the larger centres of population there are urban districts which have obtained the sanction of the Local Government Board to building by-laws varying in several particulars from the model by-laws and from one another. This want of uniformity in districts closely adjacent causes inconvenience and irritation to building proprietors as well as to architects.

It is within the powers of rural sanitary authorities to apply for and obtain from the Local Government Board "urban powers," which have been freely granted. They can then adopt the whole of the model by-laws.

When adopted the by-laws become operative not only in that part of the district which is crowded, but also in its suburbs and outlying districts; and thus a rural district, often extending for miles round the large village or small town which forms its centre, has just the same building regulations as a crowded town.

It is the experience of the Committee that some of the by-laws thus introduced are not well adapted for general use throughout the country, and when applied in connection with ordinary buildings over large areas of a purely rural character, they become oppressive.

The enforcement of unnecessary regulations in respect of matters in which the public has no practical interest seems to the Committee an improper interference with the liberty of the subject.

It gives useless trouble to local authorities. It multiplies undesirably officials to be paid out of the rates.

It adds unreasonably to the cost of building. It promotes monotony in design, stultifies invention, and prevents improvement.

It occasionally stops building. More particularly it discourages the erection of cottages for the labouring classes by landed proprietors on their country estates.

Recognising the necessity for such building by-laws as are proved to be essential to the safety or health of the public, and desiring that the by-laws relating to the same subject should, as far as practicable, be alike throughout the country, the Committee suggest that the model by-laws should be grouped in divisions as detailed below, in order that buildings in rural localities may be relieved from those divisions which appear inapplicable in such places. In an appendix they deal in detail with each division so far as amendment appears to them needed therein.

## Suggested Divisions.

A. Definition of Terms and Exempted Buildings [Model By-laws 1 and 2].

B. New streets [3-8].

C. Space about Buildings and Area of Windows [53-58].

D. Structure of Party Walls [25-32].

E. Structure of Walls, Foundations, Roofs and Chimneys (11-23, 33, 34, 36-52].

F. Sanitation, Preparation of Site, and Drainage [9, 10, 17, 52A, 60-89].

In rural districts the committee consider that A, D and F would suffice. It might be desirable to add B in the case of any part of a rural district likely to become urban.

Possibly E might be added, to apply only to large public buildings, warehouses, and factories of considerable height. Ordinary shops should not be regarded as other than domestic buildings.

In towns where a competent building surveyor of experience is engaged the whole of the by-laws should be in force. In such places exemptions from certain divisions of the by-laws should be made applicable to particular buildings rather than to districts. The committee are of opinion that in no case should the exemptions extend to sanitary matters. The exemptions they suggest are set forth in the Appendix, Division A, No. 2.

It appears to the committee that no model by-laws can be considered complete which do not include those to be enforced by local authorities with respect to the staircases and exits of public buildings and factories, even though authorised otherwise than under the Public Health Acts.

It is of great importance that the requirements of the local authorities as to the deposit of drawings should be reasonable, and that they should be explicitly stated. The committee suggest that in all cases a block plan, with the lines and depths of drainage shown thereon, together with the nearest public roadway and adjoining premises within 100ft. of the proposed building, should be deposited, and that, where required, plans and sections (together with elevations, if needful to explain methods of construction) should be submitted for inspection during a defined and limited time; which drawings should be then returned, stamped, if approved, or, if not approved, accompanied by a precise statement of the particulars in which the by-laws have not been complied with.

It would be of great advantage if an appeal could be provided to a technical authority as to the meaning and applicability of by-laws.

The Committee have the honour to lay this report, with the Appendix, before the Council of the Royal Institute of British Architects, and request that it may be submitted to a General Meeting.

It might be well to forward copies to the Allied Societies, for their consideration, before the Meeting is called.\*

On the report being adopted, the Committee suggest that the Institute should request the Local Government Board to receive a deputation, whose objects would be to point out to the Board the desirability of altering some of their Model By-laws and arranging them in divisions, and to request the Board to take such steps as may be necessary to bring the new method of administering the By-laws before the notice of the local authorities.

The influence of those who are interested in building would have to be brought to bear upon the local authorities to urge them to give effect to the proposed measures of relief by adopting such, and such only, of the divisions of the By-laws as would be applicable to their districts or to different portions thereof.

## Synopsis of Model By-laws as Issued by the Local Government Board.

No.	Division.
1.	Interpretation of terms See Appendix, A.
2.	Exemptions ... See Appendix, A.
3-6.	New streets. Retain...
7.	New streets ... See Appendix, B.
8.	New streets. Retain ...
9, 10, 10a, 10b.	Sites. Retain
11, 12.	Walls ... See Appendix, E.
13-16.	Walls. Retain ...
17.	Damp course ... See Appendix, F.

\* Copies of this report have been sent to the Allied Societies, and their opinions invited thereon, according to the suggestion of the Committee.

18, 19, 20, 21.	Walls ... See Appendix, E.
22, 23.	Walls. Retain ... E.
24.	Wood in external walls. Omit.
25-32.	Party-walls ... See Appendix, D.
33, 34.	Support of timbers. Retain ... E.
35.	Brick nogging. Omit.
36-51.	Chimneys, &c. Retain ... E.
52.	Roofs. Retain ... E.
52a, 60a.	Water on roofs, &c. See Appendix, F.
53, 54.	Open spaces ... See Appendix, C.
55, 57.	Windows ... See Appendix, C.
	Height of storeys. Omit.
56.	Ventilation under floors. Retain ... C.
58.	Ventilation of rooms. Retain ... C.
59.	Ventilation of public buildings. Omit.
60.	Subsoil. Retain ... F.
61-64.	Drainage. Retain ... F.
65.	Drainage ... See Appendix, F.
66-79.	Drainage. Retain ... F.
80-85.	Ashpits. Retain ... F.
86-89.	Cesspools ... See Appendix, F.
91, 92.	Notices and plans ... See Report.

## APPENDIX.

## DIVISION A.—DEFINITIONS AND EXEMPTIONS.

## Interpretation of Terms.

No. 1\*.—Terms defined by the Acts under which the By-laws are made should be inserted here for general information.

"Base" of a wall carried on a bressummer should mean the course above the bressummer. See London Building Act, 1894.

"Topmost storey" should be defined to include a one-storey building.

As far as possible the interpretations should accord with the London Building Act, 1894.

## Exempted Buildings.

No. 2.—It is undesirable that any buildings should be exempt in practice from supervision respecting sanitation and drainage; certainly not railway stations.

No. 2 (h) (i) (j).—To be substituted for Model By-law No. 2 (h) (i) (j).

The following buildings to be exempted from all By-laws excepting Division F. (Sanitation, &c.).

(h) Any building, not being a Public Building or Factory (or which, being a Public Building or Factory, is one storey only in height, and is without any gallery), which is situated not less than 15ft. from the boundary of the curtilage thereof.

For the purposes of this by-law two domestic buildings shall be regarded as one building provided they are separated by a party wall in accordance with Division D.

NOTE.—This is not intended to exempt any Public Building or Factory from By-laws regulating Exits and Stairs, should such By-laws be introduced.

(i) Any building situated within 15ft. of the boundary of the curtilage, which is distant 15ft. at the least from any public way and from any other building within the curtilage, and does not exceed 600 superficial feet in area nor 15ft. in height, provided that its external or party-wall towards the boundary of the curtilage is constructed as provided for a party-wall in Division D.

(j<sub>1</sub>) Greenhouses if not attached to other buildings (see London Building Act).

(j<sub>2</sub>) Greenhouses attached to other buildings so far as regards the necessary woodwork of their sashes, skylights, doors, and frames.

## DIVISION B.

No. 7 (c).—Suggested amendment:—He shall construct on one side at least of such street a footway not less than 6ft. wide.

## DIVISION C.

No. 53.—Omit 53 in favour of 53A.

No. 54.—Add to 54 and its provisos Section 41 of the London Building Act, part of Sub-section i., modified thus:—

Where there is a basement storey directly and insufficiently lighted and ventilated, or where the basement storey is not constructed or adapted to be inhabited, or where there is no basement storey, and where the ground storey is not constructed or adapted to be inhabited, the open space required by this

\* These numbers refer to the Model By-laws.



section may be provided above the level of the ceiling of the ground storey or a level of 16ft. exclusive of lantern lights, measured from the level of the adjoining pavement.

Section 52 of the London Building Act should also be introduced in the following form:—

In the case of domestic buildings and stables or other dependent buildings abutting in the front upon a street and in the rear upon a mews or public way, the sufficient open space provided for the domestic building shall serve also for the stables or dependent building.

It might be desirable to introduce Section 45 London Building Act respecting "Courts within a building."

No. 55.—Suggested amendment: Every person . . . shall construct . . . suitable windows in such manner that effectual means of ventilation by direct communication with the open air shall be provided for every habitable room of such building.

NOTE.—It is not desirable that the heights of storeys should be arbitrarily fixed by By-laws.

#### DIVISION D.—PARTY-WALLS.

Such parts of Nos. 19, 20, 21, and 22 as relate to party-walls, and Nos. 26, 27, 28, 29, 30, 31, and 32:—Every wall built for the separation of adjoining buildings belonging to different owners or occupied or adapted to be occupied by different persons shall be constructed of good bricks, stone, or other hard and fire-resisting material, properly bonded and solidly put together with good mortar.

Such wall shall in no part be less than 8½ in. in thickness. It may, however, be divided into two thicknesses of 4½ in. by a flue, provided that such flue be pargetted and has an opening into one only of the adjoining premises.

Such wall shall extend from the foundations or footings up to the underside of the incombustible roof covering, and shall be built or properly corbelled out to the full extent of any projecting string, eaves, or other architectural feature any part of which within 3ft. of the party-wall is constructed of wood or other combustible material.

It shall also be carried up the full width and height of any turret, dormer, lantern light, or other erection on a roof or flat any part of which within 4ft. of the party-wall is constructed of wood or other combustible material.

No timber shall be built into or placed in any party-wall nearer than 4½ in. to the centre line thereof, nor within 9 in. of the inside of any flue or chimney opening, nor within 7 in. of the upper surface of any hearth; nor shall any wooden plug be driven into any such wall nearer than 6 in. to the inside of any flue or chimney opening.

Such wall shall in each of the following cases be carried up above the roof or flat or gutter of the highest building adjoining thereto to such height as will give a distance of at least 15 in., measured at right angles to the slope of the roof, or above the highest part of any flat or gutter, as the case may be, and shall be properly coped and protected from water soaking into the wall.

(a) When either of the adjoining buildings has a roof not externally covered with slates, tiles, metal, or other incombustible material;

(b) When either of the adjoining buildings exceeds 30ft. in height, measured from the lowest part of the ground-floor storey to the tie of the roof, or to halfway up the gable if the roof has no tie;

(c) When either of the adjoining buildings is intended or adapted to be used as a public building or as a warehouse, factory, or workshop.

When either of the adjoining buildings is of the class described under (c) and exceeds the dimensions described in (b), the walls shall be carried up for a distance of 36 in. above the roof, flat, or gutter, as the case may be, and shall also extend 12 in. higher and wider on each side of any turret, dormer, lantern light, or other erection on a roof or flat any part of which within 4ft. of the party wall is constructed of wood or other combustible material.

#### Buildings Adjacent to the Boundary of the Curtilage Thereof.

No. 25.—When the external wall of a new building is within 7ft. 6 in. of any boundary of

the curtilage other than a public road, the wall shall be built of incombustible material, and no timber or other combustible material shall be fixed beyond the face of such wall.

#### DIVISION E.—STRUCTURE OF WALLS, &c.

No. 11.—Add:—Any storey in a roof, and the storey immediately below the roof not being the ground storey of a detached or semi-detached domestic building, may be inclosed with timber studding, not less than 4 in. thick, properly framed, covered externally with weather-tiling or plastering, and internally with plaster work covering the whole surface excepting the necessary openings. Such inclosure, when properly corbelled out, may overhang the wall below, provided the soffit be plastered.

Add to No. 18 (iii.):—A pier not less in width and breadth than twice the thickness of the wall as defined for each storey, and standing on a solid foundation, shall be deemed to be a return wall for the purposes of measuring the length of walls.

Nos. 19 and 20.—Omit "and every party-wall," and add in both cases:—The minimum thickness of every party-wall shall be 4½ in. less than that prescribed for an external wall of corresponding height and length, but in no case less than 8½ in.

Add to 19 (not 20):—Where the wall of any domestic building, hereby required to be 13½ in. or more in thickness, is covered externally with tiles or other similar incombustible and impervious material securely fastened thereto, the said thickness may be reduced by 4½ in., provided that such reduction shall not be made on more than one storey nor on any ground story nor on any storey exceeding 10ft. in clear height.

No. 24.—Omit 24. See Sec. 55, London Building Act, 1894.

No. 35.—Omit. There is no corresponding rule in the London Building Act, 1894.

No. 52a.—Omit. See Division F, substituted by-law.

#### DIVISION F.—SANITATION, PREPARATION OF SITE, DRAINAGE.

No. 17.—Substitute "floor" for "timbers" in line 5. In the second paragraph a vertical damp-course should be substituted for the hollow wall described.

Nos. 52A and 60A.—Substitute the following:—Every person who shall erect a new building shall make suitable provision for carrying off the rain-water from the roofs, flats, gutters, and areas in such manner as not to cause dampness in any part of the walls or foundations of such building or any adjoining building.

No. 65.—It should be made to appear that this applies only to foul drains.

Nos. 86 to 89.—The provisions respecting cesspools are unpractical and unsatisfactory. The question of the disposal of sewage where no sewers are available requires reconsideration under modern conditions.

**A Gift to Paisley Infirmary.**—Mr. Peter Coats, of Garthland, offered to provide an infectious diseases block, and the directors have unanimously decided to accept the gift. Plans prepared by Mr. T. G. Abercrombie have been passed. They show a two story building, divided on the ground floor into two wards (each accommodating three beds) intended for male and female patients respectively. Bath room and kitchen accommodation and nurses' bed rooms are also provided.

**The Original Bridge over the Bannock.**—In the course of taking down an old building in the village of Chartershall, near Bannockburn, recently, the workmen found an interesting stone with the following inscription:—"This bridg was built by the Justic of Peace of Sterlingshyer, ano. 1696." The stone evidently formed the date stone of the original bridge over the Bannock, which, like so many others, was destroyed during the rebellion of 1745. The present bridge bears the date 1747, when it was rebuilt by the Justices of the Peace.

## Bricks and Mortar.

June 14th, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

#### An Opportunity.

No one can say that Charing Cross Station is beautiful; it is a huge, smoke-blackened span of iron and glass piled on the top of brick arches, and dropped down in the middle of the fine curve of the embankment. It spoils a splendid view of the important buildings which reach from Westminster to Blackfriars and face the river. An opportunity for doing away with this eyesore has occurred. The South-Eastern Railway Company wish to increase the width of Charing Cross Station, but by an old Act they are not allowed to do so unless they proportionately increase the dimensions of the forecourt of the station on the Strand side. This provision they want Parliament to set aside, on the ground that the cost would be prohibitive. We hope Parliament will not agree to do so. There does not seem to be any reason why the South-Eastern Company should have their West End station on the north side of the Thames at all. The South-Western Company manages very well with Waterloo, and the South-Eastern would be in an even better position, since it already has its line to Cannon Street, and it would be merely necessary to build a large station on the south side of the river, and sell the valuable site of Charing Cross, when buildings could be erected which would harmonise with the present surroundings. The removal of the present South-Eastern railway bridge would make it possible to erect a stone bridge with some architectural pretensions connecting Northumberland Avenue with the Surrey side. What a relief it would be to see the splendid sweep of the Embankment from Westminster to Blackfriars unbroken by the hideous bridge and blackened girder roof of the South-Eastern station.

#### To Improve London.

A LIST of six improvements, estimated to cost £1,565,000, was before the London County Council yesterday. This list has been prepared by the Improvements Committee, and they recommend that Parliamentary powers should be sought next session. The first relates to the extension of the Thames Embankment between the Houses of Parliament and Lambeth Bridge, and the improvement of the district near Millbank. It is proposed that the course of Abingdon Street and Millbank Street shall be altered, and a new street 70ft. wide be formed. By the recoupment resulting from the alteration of the line of Millbank Street, and from the acquisition of the property between the street and St. John's Church, it will, in the opinion of the committee, be possible—to embank the river, to extend the Victoria Tower Garden, to widen Millbank Street, and to widen the other streets up to St. John's Church, including a portion of Horseferry Road, at a cost of £530,000, as compared with £306,000 for the imperfect and unsatisfactory scheme of merely widening the existing Millbank Street, and £498,000 for



both widening and straightening the street. The second scheme is for the much needed widening of Mare Street, Hackney, to 70ft. wide, between the North London Railway and the Triangle. The total net cost is £577,100. The third scheme is to widen Goswell Road to 60ft. between Upper Ashby Street and Great Sutton Street at a net cost of £209,500. The widening of Nine Elms Lane to a maximum of 60ft. is the fourth suggested improvement. This is to be between Southampton Street West and Battersea Park Road, and the net cost of the scheme is £136,400. The fifth project concerns Camberwell Road, which is to be widened between Warner Road and Camberwell Green at a net cost of £52,000. The last improvement on the list is a small widening of Kentish Town Road.

### The L.C.C. and its Architect.

THE following paragraph appeared in the "Globe" the other day:—"It is hinted that there is a likelihood of further disclosures in connection with the Works Department and the jobs it has recently been carrying out. The purport of rumours current is that not only have estimates been exceeded, but that, moreover, according to a report of the recently-appointed architect, the work is not so satisfactorily executed as it would be under contractors. The architect is credited with having the courage to maintain his opinions, in spite of discouragements and opposition from friends of the Labour party and supporters of the Works Department." It is, perhaps, advisable not to attach too much importance to such a rumour. The "Globe" is notoriously hostile to the Works Department and all its ways.

### Birmingham Students' Work.

THE exhibition of students' work at the Birmingham Municipal Technical School reflects considerable credit on that institution. The students are divided into two sections. Those in the day section are youths of school age; and those in the evening classes include a large number of apprentices and a good many adult workmen, whose studies are directed with the object of extending their acquaintance with the trades with which they are associated. The exhibition covers the work of both sections, and, as would be expected, the first section is of an elementary character; but in the latter the exhibits include products of which experienced workmen might be proud. Lead embossing, brass work, and carpentry are interesting departments, and much artistic work has been executed by the students. In the electric jointing department every known method of conjunction is taught, and the results obtained evidence keen intelligence and skill. The metal colouring done by some of the students is very commendable. In the engineering department a model of the 100ft. truss of Christ Church, which was discovered in dismantling that building, is included. Numerous drawings by students illustrate the scope of the school's work, and show that a large measure of success has attended its efforts.

### A Patriotic League.

WE have received an appeal from the Secretary of the British Mercantile League, which exists for the patriotic object of "preserving this country's commercial greatness." "The League proposes, as occasion offers, to take up any question affecting the prosperity of British industry in relation to the foreign competition which is growing more keen every day. In order that its work may be effective, it is essential that the League receive wide support throughout the country, not only from merchants and manufacturers, whose interests are directly affected, but from all citizens of the Empire who are willing to aid in righting a great Imperial wrong. Now is the time, when, if ever, all Britons should pull together to maintain our Empire's threatened commercial supremacy, and fair play, like charity, should begin at home. The Executive

Committee therefore appeal to all who are interested in their country's commercial well-being, and everyone in the country is either directly or indirectly interested in the matter, to join the League and help the furtherance of its great object. Prospectuses and all information may be obtained from the Secretary, at the League's offices, No. 68, Wool Exchange, London."

### Studio Bogies.

SIR WYKE BAYLISS was quite fatherly in his manner towards the students at the annual meeting of the Royal Architectural Museum and Westminster School of Art last Thursday. He warned them against the bogies which, he declared, haunted the studio. There was the bogy of the common-place, and he urged artists to remember that they should get more into their pictures than they could find in their paint boxes. All art worthy of the name began in paint and ended in passion. The artist should not only be a seer but a revealer. Another bogy was the one which would fain persuade a man that he was an artist because he knew something about technique, or had an appreciative mind for the beautiful. A third harped on the word "pot-boiler" till many an artist lost interest in his work because he had come to regard it as purely commercial. Painting a picture for money was not degrading; most of the finest work in the world had been done with a keen eye to the financial result. In conclusion, Sir Wyke said that "the greatest bogy of all" was the one which persuaded the artist that "the golden age" of art had passed away, never to return.

### A General City Exchange.

A SYNDICATE consisting of the representatives of the leading City of London firms engaged in various branches of trade was formed last week with the object of erecting an extensive building, which, it is proposed, shall be known as the City of London Exchange. It has long been felt that the Royal Exchange, which is practically a public thoroughfare, is totally unsuited as a meeting place for the thousands of merchants who are daily engaged in the City of London. There have been numerous small exchanges intended for the convenience of particular branches of trade, but no common house where principals and representatives might meet for business and social engagements. Mr. Ernest Forwood, of Messrs. Forwood Bros. and Co., of London, Liverpool, and New York, has recognised this want, and has been very energetic in bringing the movement into a definite form. The result is that a site has been acquired for the building in Jeffery Square, St. Mary Axe, within a short distance of Leadenhall Street, and therefore easy of access from the busiest parts of the City as it has developed in recent times. The structure will be of noble proportions, covering an area of 27,500ft. It will contain a large central exchange, approached from an extensive covered courtyard, as well as a clubhouse. It is anticipated that the cost of the new Exchange will be not less than £250,000 (the capital being £275,000), and construction will commence as soon as the design can be completed.

### Batley's White Elephant.

A GREAT deal of commotion has been raised over the question of removing the Batley Market Hall, commonly known as "the white elephant on the hill." It seems that for some time past the Batley Corporation have been discussing whether a new Town Hall should be built, worthy of the dignity of the borough, and at last the members talked themselves into agreement, when it only remained for the Town Council to confirm the proposed erection. This was done at a meeting of that body last Thursday, and it was also decided to apply to the Local Government Board for sanction to borrow £35,000 for the erection of the building. The scheme comprises the removal of "the white elephant," the levelling of what is now the hill, and the erection on the lowered

site of an imposing town hall, to cost the sum mentioned above. Messrs. W. Hanstock and Son have prepared the plans, which show a building that will be dressed in ashlar and lined with best bricks. The whole of the front entrance, together with the lobby and staircase, will be in decorative polished marble, and there will be plenty of cast plaster work on view. Tesselated tiles will give tone to the floors, and polished woodwork will be used in all the principal rooms. There will be a well-equipped police-court, and spacious offices for the town clerk, building inspector, medical officer, magistrate's clerk, borough accountant, borough engineer, and their respective staffs. The Mayor will be provided with a parlour. On the second floor is to be the public hall, capable of affording seating accommodation for 1527 people. The Council will have a well-furnished Council Chamber with four adjoining smaller rooms, in which to transact committee work.

### A Dundee Competition.

WE have received from the Dundee Institute of Architecture, Science, and Art, a syllabus of their competitions for 1899-1900. The first competition is for a freehand sketch-book of architectural subjects, from existing buildings in pencil only, and not copied from any drawing; and the second is for measured drawings of any architectural subject, containing plan, elevation, and section. Competitors entering for the third on the list have to send in a sepia or chalk drawing from an antique subject in the Dundee Art Museum, and, of course, architectural historic ornament is preferred. Competitions four, five, six, seven, and eight are respectively a design for decorative treatment of the interior of a billiard-room; a design for a village hall to seat 400 persons, and to include caretaker's house, and suitable retiring rooms; a design for a golf club house for 150 members; a design for a fireplace in stone for a hall in a mansion; and an album containing not less than twelve large scale photographs of architectural details from existing buildings. Further particulars concerning these competitions can be obtained of either Mr. J. J. Henderson, or Mr. C. Soutar, whose address is 7, Ward Road, Dundee.

### Carthaginian Antiquities and Discoveries.

AN admirable museum of Carthaginian and Roman antiquities has been formed (says Sir Harry Johnston in his report to the Foreign Office on the progress in the Regency of Tunis) a collection which is being yearly added to by the excavations made under the direction of Père Dellatre on the site of Carthage. At Bir-Ftuha a great semi-circular basilica has been discovered and cleared of rubbish, and its decorative mosaics have been removed to the museum at Tunis. On the heights of the Odéon two Roman villas of relatively late date have been discovered and cleared. They contain mosaics in layers which represent in their series the gradual progress of the art, and therefore supply most interesting information as to the gradual development of mosaic work. Another Punic cemetery has been discovered near Borj-Jedid, while at Duar-esh-Shat, near Goletta, a most interesting mosaic, seven metres square, has been brought to light. It represents a Roman mansion with various hunting scenes, and a temple of Apollo and Diana. To the south-east of Zaghwan an interesting Christian Church has been discovered, containing a baptistry in the form of a cross, entirely paved with mosaics. One of the aisles had been closed at some time or other by means of an immense stone coffin-lid from a Pagan sarcophagus. This is ornamented with bas-reliefs of the Three Graces surrounded by the Four Seasons. This object has been removed to the Alaoui Museum, where also has been placed some very beautiful and perfect statues recently discovered by M. Gauckler near Carthage, and some large mosaics of the greatest interest, one of them illustrating the land of Egypt, with crocodiles, hippopotami, and apes.



## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### HALF-TIMBER WORK.

To the Editor of THE BUILDERS' JOURNAL.

DEAR SIR,—Will one of your practical readers kindly give the best and cheapest method of constructing half-timber work (1) with a brick wall behind, and (2) without one; also a detail for the hanging and method of fixing. Do the London County Council require a brick wall behind half-timber work in a private house?—Faithfully yours,

STUDENT.

The accompanying photograph of a timber house in course of erection will probably explain the construction better than would much writing. The timbers were 6in. by 6in., mortised and pinned with hard wood pins, and though

work fixed in any external wall . . . shall be set back 4in. at the least from the external face of such wall." There are a few exceptions, but they do not affect the present question. G. A. T. M.

### CEMENT COVERING FOR BRICK WALLS.

To the Editor of THE BUILDERS' JOURNAL.

TONBRIDGE.

DEAR SIR,—Could you inform me with regard to cementing the bricks on the outside of a house to keep out the damp, what thickness of cement is best, and also whether it should be in one, two or three coats—the cement to be lined out to represent stonework. We have very little cement work in this district.—Yours faithfully,

J. M. S.

On some parts of the south coast, where the bricks produced are of too poor a quality for facing, cement stucco is very largely employed for exterior finishing. The brickwork is primarily rough rendered about 3in. thick with what is termed "compo" sand in conjunction with Portland cement, in the proportion of four or five to one, and after being lightly scored a thin finishing coat is applied,

acid in order to cleanse it and free it from impurities and foreign matter. The retailer usually keeps it under water, but before it can be dissolved it must be dried and should be broken up small and laid out to dry in a warm place for twenty-four hours or more, and when dry should be added to methylated spirit in the proportion of 4oz. to 6oz. to the pint. But difficulty is sometimes experienced in getting the lac to dissolve in the spirit—perhaps on account of the methylating material used in it—and if pure methylated spirit cannot be obtained (it is frequently difficult to procure, and some chemists will erroneously say there is no such thing to be had) absolute alcohol should be used as a solvent. It is a good plan to give the lac a preliminary soaking in ether; and when it is swollen the ether should be poured off as closely as possible, and that not taken up by the lac allowed to evaporate before the alcohol is poured on. Even then there may be a little of the shellac which refuses to dissolve. H. E.

## Professional Practice.

**Birmingham.**—Last Saturday, a new library was opened at the corner of Margaret Street and Cornwall Street, which has been built at a cost of about £10,000. Messrs. Cossins, Peacock and Bewlay were the architects, and Messrs. Barnsley and Sons, the builders. It is in English Renaissance style, carried out in Ruabon brick and white Hillington stone, with Westmoreland green slates for the roof. The building consists of two blocks on the Margaret Street side. The façade of two stories is divided into three sections—a gabled portion at each end—and between them a slightly recessed division, further subdivided by piers between the windows. The porch is of stone, and the large circular-headed windows have stone mullions and borders, the arches being broken by key blocks. The general reading room is 54ft. by 35ft., and the conversation room is 38ft. by 23ft. These two rooms are divided by sliding doors. The ceiling of the reading room is coved, with exposed timbers ornamentally carved. In addition to these rooms is a ladies' retiring room, lavatory accommodation, storage rooms, and general offices and rooms. The internal woodwork is of pitchpine, adamant plaster is used for the walls, and wood blocks are used for flooring.

**Bristol.**—A new chapel is being erected at St. Anne's Park in connection with the United Methodist Free Churches, and the memorial-stones were laid last week. It consists of a school-chapel, measuring 40ft. by 28ft., with seating accommodation for 250, and in the rear of this a vestry, with kitchen and lavatory accommodation. The style is Perpendicular Gothic, the walls being built of red pennant with freestone dressing and tiled roofs. The large room will have an open-boarded roof and pitch pine dado. The floor will be of pitch pine blocks, and the windows glazed with leaded lights. The cost will be about £900. The work is being carried out by Mr. E. C. Norris, of Bedminster, and the architects are Messrs. La Trobe and Weston, F.R.I.B.A.

**Dudley.**—A new Grammar School, which has cost £11,000, was opened at Dudley last Wednesday by the Countess of Dudley. Messrs. Woodhouse and Willoughby, of Manchester, were the architects, and Messrs. Webb and Round, of Dudley, the contractors. The buildings consist of a school completely equipped to accommodate 160 scholars, and a head-master's house. The style adopted for both blocks of the building is Tudor Gothic. Externally each structure is faced with red Ruabon bricks and terra-cotta dressings, and roofed with brindled Staffordshire tiles. Internally the joinery throughout has been executed in New Zealand Kauri wood, stained and varnished. The school building contains five large classrooms and a large central hall, the capacity of the latter being 56ft. by 28ft., and having seating



HALF-TIMBER HOUSE IN COURSE OF CONSTRUCTION.

the timber employed was elm, fir would do nearly as well. The interior was to be lathed and plastered, and the space between the timbers externally also to be plastered on lathing secured to small pieces of wood nailed to the studs, leaving the timber construction to show on face. Had brick backing been used, the timber framework would still have been first erected, and made perfect in itself, the brickwork being then built behind as well as to fill the interspaces. The tile-hanging on one of the sides was quite simply hung by the stubs cast on the backs of the tiles to strong-laths nailed to the framework. Brick walls would have to be plugged before lathing, if to be tile-hung, or else the tiles could be nailed direct to courses of "fixing blocks," and bedded in cement. This last would be almost the only construction allowed in London, where half-timber, except in dormers, is absolutely prohibited. Section 1 of the First Schedule to the London Building Act provides that "Every building . . . shall be enclosed with walls constructed of brick, stone, or other hard and incombustible substances," while section 55 of the Act itself provides that "All wood-

about 3in. thick, of washed sand and cement—usually about two to one—and the work is then lined to resemble stonework. The "compo" sand referred to is a mixture of coarse sand and shingle taken from the sea-shore, and the washed sand is the same material passed through water and with the shingle extracted. Work of this description should be finished off with a wooden float, and always looks better if the finishing coat is executed with coarse sand, a smooth trowelled surface being undesirable. H. E.

### DISSOLVING WHITE SHELLAC.

To the Editor of THE BUILDERS' JOURNAL.

SWANSEA.

SIR,—Will you kindly advise me the best way to dissolve white shellac. I want it to the thickness of cream. I have tried naptha and methylated spirits, with the result that it turned out like wet sawdust.—Yours truly,

WELCH.

Bleached shellac—also known as white shellac—is the ordinary lac boiled in a solution of soda, and washed in dilute sulphuric



accommodation for 250 adults. In addition there are a chemical lecture theatre, laboratory, &c., which are entirely separated from the school by means of a covered passage, and can be entered direct from the playground. The lecture theatre will seat thirty students, and the chemical laboratory sixteen. The basement also contains heating chamber, cooking kitchen, and mess-room, joining which is a partly-covered playground paved with patent limestone asphalt. The plans of Messrs. Woodhouse and Willoughby (Manchester) were accepted in an open competition, in connection with which fifty-four plans were sent in.

**Glasgow.**—The winners of the first three premiums in the competition for designs of ringburn Halls are Mr. W. B. Whitie, of 15, St. Vincent Street, Messrs. Thomson and Edmonds, of 241, West George Street, and Messrs. Watson and Silmond, of 231, St. Vincent Street. The assessors were Messrs. J. Burnet, A.R.S.A., T. L. Watson, F.R.I.B.A., J. A. B. McDonald, M.I.C.E. All the committee drawings are being exhibited in the Corporation galleries, Sanchiehall Street.

**Leicester.**—The Leicester Corporation recently offered premiums of £100, £50, and £25, for the three best designs for a new whole-

been given to the domestic offices, which will be complete in every detail. Barton-on-Sea is rapidly growing and increasing in popularity. The golf links adjoining the hotel, which have been laid out by Mr. Thomas Dunn, of Bournemouth, are now opened, and have been received most favourably, as is instanced by the attendance both of the general public and also of members of the club, which was started by Sir Robert Affleck, Bart., in connection with these links. Arrangements are also being made for gas supply and a good service of town's water. Our illustration is from a water-colour sketch, and represents the south front of the hotel. The architects are Messrs. Dancaaster and Co., of Bournemouth and London.

**Queenstown, Ireland.**—St. Colman's Cathedral is being extensively renovated, and Mr. G. C. Ashlin has prepared the necessary drawings and specifications for the completion of the interior. The tenders submitted by Messrs. Creedon, builders, of Fernoy, were accepted for the groined ceilings of the nave and transepts, the cleaning of the walls, and the carving of the strings, cornices, corbels, capitals, &c. Mr. J. A. O'Connell, of Cork, is attending to the sculptured subjects in the spandrels of the nave, also the erection and carving of the stonework of the shrines and

R. Stocks, sculptor, of Queenstown, is doing several of the groups in connection with the series of the Stations of the Cross, and the sculptures in the large music room of the organ gallery. The tender of Messrs. Harrison and Son, Dublin, was accepted for the sculptured work of the tympanum, and arches of the great west door, as well as that of the canopies adjoining. All the sculptured bosses on the intersections of the ribs and ridges of the groining of the nave were executed by Mr. Kelly, of Cork, and the gilding of the Stations of the Cross, and decoration of the altar and pedestal for shrine of Blessed Thaddeus, by Messrs. Purcell and Son, Queenstown. The whole of the painted glass windows of the clerestory, and those erected in the apse, and the arcade of the south transept were executed by Messrs. Hardman, Birmingham, while M. Mayer, Munich, was successful in obtaining others. The whole of the gas standards, candelabra for shrines, railings for opes in the triforiae, &c., were executed by Messrs. McCloughlin, Dublin, and the candelabra and altar furniture were executed by Messrs. Smith and Sons, Dublin.

**Sheffield.**—The foundation-stones of a new Wesleyan chapel, to be erected at the corner of Stafford Road, and Fitzwalter Road, were laid last Thursday. The new building will consist



ADDITIONS TO BARTON COURT HOTEL, NEW MILTON, HANTS. DANCASTER AND COMPANY, ARCHITECTS.

market, to be erected in that town. The design of Mr. Walter Brand, A.R.I.B.A., of Leicester, and Ipswich, has been selected for the first premium. His design estimated the value of the market at £24,087, cold storage at £17, baths extension £1,329; total £31,833. The Town Council, on the report of the Markets Committee, have appointed Mr. Brand as architect for the new market.

**New Milton (Hants).**—The additions to Barton Court Hotel, which are now nearing completion, will consist of a large new entrance and lounge, dining hall, extra suites of private rooms, kitchen, servants' hall and veranda, and upwards of thirty new bedrooms. The old wing is a picturesque, ivy-clad building of an old-world character, and was at one time a well-known gentleman's residence. Its position is unique, and standing in a bracing position on the sea front in its own large grounds, and directly facing the Isle of Wight from the Needles, with a view of Bournemouth and Swanage, no better position for a sea-hotel could be desired. In designing the new wing, the architects have necessarily kept the style of the old building in the exterior, but the interior will be replete with all the requirements of a high-class modern hotel. The dining hall will accommodate about 100 guests, and will have large mullioned and leaded windows. Special attention has

been given to the domestic offices, which will be complete in every detail. Barton-on-Sea is rapidly growing and increasing in popularity. The golf links adjoining the hotel, which have been laid out by Mr. Thomas Dunn, of Bournemouth, are now opened, and have been received most favourably, as is instanced by the attendance both of the general public and also of members of the club, which was started by Sir Robert Affleck, Bart., in connection with these links. Arrangements are also being made for gas supply and a good service of town's water. Our illustration is from a water-colour sketch, and represents the south front of the hotel. The architects are Messrs. Dancaaster and Co., of Bournemouth and London.

He has also erected the marble work in one bay of the apse. The groining of the aisles, which are of stone, is being executed by Messrs. Sharpe and Emry, of Dublin; also the cleaning and polishing of the massive marble columns that support the nave arcade. The tenders of Mr. Smyth, sculptor, of Dublin, were accepted for the marble work and sculptured group of the Annunciation in one of the bays of the apse, also for several of the series of the Stations of the Cross, which are sculptured in Caen stone. The tender of Mr. John Early, of Dublin, was accepted for the marble work and two sculptured groups—the Visitation and the Presentation of our Lord in the Temple—in two bays of the apse, and the decoration of three of the shrines—viz., those of the Holy Family, Sacred Heart, and the Agony in the Garden. The shrine of Our Lady of Good Counsel, which is executed in gold and coloured glass mosaic was obtained by the tender of M. Oppenheimer, and the grotto of Our Lady of Lourdes was awarded to the tender of Messrs. Fleming Brothers, Cork. The tender of Mr. J. C. Edwards, Ruabon, was accepted for the ceramic mosaic of the porches and passages, and that of the Wood-Block Paving Co., London, for the floors of the nave, aisles, and transepts. Messrs. Murray, of Youghal, are seating the interior, and Messrs. Sharp and Emry are supplying the pulpit. Mr.

of a church, with two vestries, a church parlour, and a schoolroom with several classrooms. The entire structure will be of stone, the general facing being pitch or rock-faced, with ashlar freely used for doorways, windows, &c. The church is cruciform in plan, measuring 97ft. interior extreme length, including chancel, 41ft. 6in. wide across the nave, and 59ft. 6in. in width across the transepts. It has an end gallery only. The church will seat 640 adults, or a mixed congregation of 850 persons. At the corner facing the junction of the roads is the tower, terminating with a spire 124ft. high. The front of the church has three doorways leading to the ground floor and gallery, and the centre doorway has over it a handsome four-light traceried window. The other windows throughout have painted heads, and the chancel has a circular traceried window. The schoolroom is built on the central hall plan, with classrooms around it, some of them opening into the hall. The length of the room inside is 50ft. by 29ft. wide. The classrooms are of varying sizes, there being two large ones for adult classes, and one large one for infants. The others are smaller. Accommodation is provided for 500 scholars. The cost of the work is £7,600, exclusive of land and the architect's fees, and with the cost of the site the total amount required when the scheme was commenced was about £10,000. The architect is Mr. John Wills,



F.S.Sc., of Derby and London, and the builder is Mr. John Fidler, of Eckington.

**Wandsworth.**—The new poor-law offices which are to be built at Wandsworth will be very imposing buildings, and the estimated cost is £20,311. Mr. Cecil A. Sharpe, A.R.I.B.A., of 59, Fenchurch Street, London, E.C., is the architect. The new buildings will be in Renaissance style, and the materials to be used are red bricks and stone dressings, with green slates on the roofs. Upon the ground floor will be a suite of clerks' offices and rooms for accountants, assistant relief officers for school cases, general settlement and inquiries, also lavatories and strong room, all approached by a wide corridor and a fine entrance hall and staircase. Facing East Hill, and connected with the offices by a waiting corridor, will be the Relief Committee rooms and waiting rooms for applicants. Each applicant will enter the committee rooms from the waiting rooms and depart by a different door. On the first floor will be the offices for the registrar and collector, spare offices and strong rooms. There will be a boardroom, and upon the east side a committee room and ladies' cloakroom. On the west side there will be a gentleman's cloakroom and ante-room. A separate staircase is provided to the public gallery and Press gallery, which also gives access to the caretakers' apartments. The building is to be constructed on fireproof principles, with steel joists and concrete floors, and internally the floors of the halls and corridors will be paved with mosaic, and the walls will have a cement face and glazed brick dadoes. Electric light is to be used throughout the building as well as gas, and there will be an electrical system of ventilation.

## Keystones.

**New Barracks at Winchester** were opened last Thursday by the Prince of Wales.

**Mr. J. J. Henderson** has removed to more commodious rooms at 7, Ward Road, Dundee.

**A Statue to Herr Helmholtz**, the eminent German scholar and mathematician, was unveiled last week at Berlin.

**The Theatre Royal at Peterborough** is to be rebuilt from plans by Mr. J. P. Briggs, of Arundel Street, Strand, London, W.C.

**A New Wesleyan Chapel** is to be erected in Agincourt Road, Hampstead, at a cost of £6,500, and the memorial stones were laid last week.

**The Restoration of Crowland Abbey** has been decided upon. The north wall of the tower is to be taken down and new foundations are to be laid.

**A New Bridge** has been erected over the River Feshie, Badinloch, which is about 130ft. in length, and consists of four spans. It has been built by Mr. Grant, of Badinloch.

**New Municipal Buildings** are being erected at Henley-on-Thames from plans by Mr. Henry T. Hare, F.R.I.B.A. Mr. W. F. D. Smith laid the foundation stone last Friday.

**Akroyd Park, Halifax**, is to be extended by the addition of the estate known as the Woodlands, comprising a little over two acres in extent. The cost of purchase is £2,500.

**A New Hospital is to be Built at Wath** at a cost of £5,960, and the tender of Mr. G. H. Smith, builder, of Mexborough, for this sum has been accepted by the Wath Joint Hospital Board.

**A New Church at Carnock** was opened last Wednesday. The church, which was erected from plans prepared by Mr. Scobie, of Dunfermline, is a Gothic structure, and has cost £1,200.

**OWSTON FERRY Church** has been reopened after repairs and alterations and the erection of a new organ. The latter cost £500, and the other improvements involved an outlay of £1800.

**Additions to the British Art Gallery** at Millbank have been made, which consist of ten rooms for new galleries, two of which are to be devoted to sculpture. The architect was Mr. Sidney Smith.

**Five Memorial Stones** were laid recently in connection with the erection of a new suite of class-rooms for the Yeaddon Wesleyan Sunday School. The estimated cost of the class rooms is about £800.

**The Proposed New Theatre at Llan-dudno** has been designed by Mr. G. A. Humphreys, in conjunction with Mr. E. O. Sachs. The total cost of the building is estimated at £14,000, and the site is to cost £3,000.

**The Oldest House at Largs** is to come down to make room for a modern tenement. The house in question is the one standing at the foot of the Kirkyard stairs in Maunse Close, and 200 years ago was the parish manse, and such it remained until the year 1784.

**A New Church for Oldbury.**—The foundation stone of a new church in the district of Churchbridge, Oldbury, was laid last week. The new structure is to be called Providence Church, and will accommodate about 400 persons. The total cost will be £1,300.

**A New Presbyterian Church at Tooting** was dedicated last week. The church has been built from American designs, and the building is supposed to have excellent acoustic properties. The new church has a spacious gallery, and the whole building seats over 700 persons.

**A Mission Hall for Hasland Wesleyans** is to be erected at a cost of £1,750, including site, from the plans of Mr. Cecil Jackson, of Chesterfield. The first floor will be devoted to school and class rooms, and the second will consist of an assembly room, with a seating capacity of 350.

**Almshouses at Pudsey.**—A group of five almshouses is being built in Robin Lane, at a cost of £50,000. The buildings are of stone, with dark Westmoreland slates for roofing, and each has a separate entrance, outbuildings, and rear space. Mr. C. S. Wilson, of Leeds and Pudsey, is the architect.

**A New Bridge at Clova**, over the River Southesk, was opened recently. It has been built according to plans by Mr. Donald Ross, road surveyor, at a cost of about £700, and has a span of 45ft. It is built of local whinstone, with cement foundations, the hewn work being Kerriemuir stone.

**A Wesleyan Methodist Chapel** has been erected at Rushton, Staffs., at a cost of about £1,250, which will seat just on 200 persons, and has a schoolroom to accommodate 150; both rooms can be used together. Mr. Clark of Smythamby, was the architect, and Mr. Sampson Salt, of Leek, the builder.

**The Victoria Hospital, Chelsea**, at the corner of Queen's Road and Tite Street, for the ministering to little children, has outgrown its original home, the old Gough House, and it is proposed to erect an entirely new building at a cost of £30,000, and utilise the present building as a residence for the staff.

**Additions to King Edward's Grammar School**, Stourbridge, have just been carried out by Mr. W. North, from plans by Mr. T. Grazebrook. The new buildings include a porch and window, a lecture-room, physical and chemical laboratories, and an additional classroom. The work has cost about £2,000.

**Death of a Stone Merchant.**—Mr. Thomas Turner, stone merchant, of Rock Terrace, Lightcliffe, died recently at Dr. Jessep's Hospital, Leeds, after an operation. He was head of the firm of Thomas Turner and Son, stone merchants and quarry owners, of Lightcliffe and Brighouse. He was aged 58 years.

**A New Organ for Norwich Cathedral.**—Mr. H. G. Barclay, of Colney Hall, Norwich, has offered to present to the cathedral a celeste organ in connection with the large new instrument, which is being built by Messrs. Norman and Beard. It is estimated that the additional instrument will cost about £1,300, and the entire organ £6,000.

**St. Dunstan's Alterations.**—Sir John Leng has intimated his intention to a representative of the "Pall Mall Gazette" to oppose any attempt at building on the eastern side of the church which will block out his "ancient lights."

**A Stained-Glass Memorial Window** was recently placed in Scraftoff Parish Church. The window is one of three lights, with tracery above, and the idea selected for representation is the "Communion of the Saints." The work has been carried out by Messrs. Ballantine and H. L. Gardiner, and was executed at their studios in George Street, Edinburgh.

**The Great Central Hotel** in Marylebone Road was opened last week by the Duchess of Fife. The hotel has an imposing frontage in Marylebone Road, and is of red brick with light terra-cotta dressings, and surmounted by a central lofty clock tower. There is a covered courtyard, similar to that of the Grand Hotel in Paris, but larger; this leads to a spacious lounge and main hall.

**Hexham Abbey.**—The joint report of Mr. C. C. Hodges, as architect, and Mr. Temple Moore, as consulting architect, on Hexham Abbey, has been accepted by the committee, and the work of restoration is to be carried out. The scheme is a large one, and comprises the building of the nave and putting back in their old places, as far as possible, all the old furniture of the choir and the detached chantries.

**The Congregational Church at Kingston-on-Thames** has been reopened after renovation. The ceiling and walls have been decorated, the whole of the woodwork has been stained and varnished, and choir stalls, which fifty seats, have been put on the right hand side of the pulpit. The church is now lighted by electricity. The work was carried out by Mr. Whitmarsh, under the supervision of Messrs. Carter and Ashworth, architects, and the cost was about £700.

**The Smoke Nuisance in Glasgow.**—Last Wednesday the first case since the supervision of smoke nuisances has been transferred to the Sanitary Department, was heard before the magistrate in the Central Police Court, Glasgow. The defendants were Messrs. Arrol Bridge and Roof Company, Limited, of Gilmiston Works, Petershill Road. The evidence of the two smoke inspectors of the Corporation showed that on May 11th the chimney connected with their boiler furnaces had emitted excessive smoke during fifteen minutes out of a forty minutes' observation. The magistrate found the respondents guilty on the evidence and imposed a penalty of 21s.

**A New Beachy Head Lighthouse.**—The lighthouse situate at Bellefonte, the second cliff westward of Beachy Head, will soon be thing of the past. The authorities have under consideration a scheme which advocates placing a new lighthouse on the foreshore beneath (viz., about one and a quarter mile eastward of the old one), where far less fog prevails than higher up, and whence its light will be visible from Dungeness on the eastward around through south to the western limit of the present light. This scheme involves the construction of a massive granite tower, the foundations of which will be laid at a level 9½ft. under low water, and temporary dars will have to be formed to admit of the settling of the lowest portions of the work. The tower which will be rather over 47ft. in diameter at its base, is to be solid for 47ft. 6in. upwards with the exception of the space required for the storage of water, and its height to the top of the masonry will be 123ft. 6in. Above the solid portion will come the rooms, eight in number (the four uppermost ones being 14 in diameter), and finally the lantern, in which will be installed a Dioptric (lenticular) illuminating apparatus of the most modern and approved type, giving two white flashes in quick succession every fifteen seconds. It is expected that the new lighthouse, which from the designs of Mr. T. Matthews, engineer-in-chief to the Trinity House, will be completed within three years from the date.



# Under Discussion.

## FORESHORE PROTECTION.

At a meeting of the Society of Engineers, held at the Royal United Service Institution, Whitehall, on Monday evening, June 5th, 1899, Mr. John C. Fell, President, in the chair, a paper was read by Mr. R. G. Allanson-Winn, entitled "Foresore Protection, with Special reference to the Case System of Groyning," introducing the subject, the author referred to the advantages of utilising the destructive forces of the sea for constructive purposes, and stated that his object was rather to give an account of what had actually been accomplished in that direction than to advance his own opinions or theories. Dealing with the question of changes constantly going on in the configuration of the country, he took as an example thirty miles of the Yorkshire coast, and calculated that, at a moderate computation, over 47,500,000 cubic feet of material were annually taken from the coast between Flamborough Head and Spurn Point. Where did it all go to? Much was doubtless deposited at the mouth of the Humber, greatly to the detriment of that estuary, and probably more was carried down southward by the flood tide and deposited, along with material eroded from the Lincolnshire coast, in the Wash, which was gradually silting up. The erosion, in the shape of falling cliffs, was noticed now and taken account of; what did not so readily meet the eye was the gradual deposit beneath the sea, and this accretion of silt would suddenly show itself some time next century when, possibly, 100,000 acres of land in the Wash would suddenly, by comparison, spring into existence and be added almost at once to the acreage of England. Taking one century with another we did not probably gain or lose much of our area. The addition of 100,000 acres in the Wash alone would make up for a good many years of cliff erosion. Having briefly quoted certain conflicting opinions on the moot point of the travel of each at various depths, the author endeavoured to show that, as Dungeness Point was steadily moving out into 100ft. of water, there was strong evidence that shingle, of which the point is entirely composed, is capable of motion in water at least 100ft. in depth. Allusion was then made to the unprecedented encroachment of the sea during the past year at Glenbeigh, on the southern shore of Dingle Bay, co. Kerry; an average of 20ft. being recorded for a distance of over 1,000ft. The problem here involved the protection of about 600 acres of land and some house property. The situation was one of exceeding gravity, and it had been decided to put in the groynes invented by Mr. Edward Case, of Dymchurch, because this system of low groyning had been so successful at other places where the natural difficulties were greater. Having alluded to the usually accepted methods of dealing with the question of foreshore protection, Mr. Winn pointed out that these oft-repeated and usually accepted methods had frequently met with but indifferent success, and that until Mr. Case brought out his system no one had ever promulgated a scientific theory as to the curve at which a shore should lie, and had also devised a simple and inexpensive form of groyning which should cause the sea itself to build up that shore to its required curved surface of repose. Mr. Case was able, by means of tables which he had constructed and the due consideration of certain details, such as range of tide, nature of shore, sections, &c., to build up any shore, save only an actually rock-bound coast, to an angle at which it could lie with the minimum chance of erosion or alteration of form. The paper was illustrated by diagrams showing, by means of sections, the actual gains at Dymchurch, Deal, Southwold, Lowestoft and Sheringham—which places were selected from a great many where the system had been successfully applied. The author contended that the invention was to be recommended by reason of its theoretical soundness, its practical utility and economy, and its success.

# New Companies.

## Everton Timber Company, Limited.

This company was registered on May 30th by C. Double and Co., of 14, Sergeant's Inn, London, E.C., without articles of association, with a capital of £2,000 in £1 shares. Its object is to carry on the business of timber merchants, brick and tile manufacturers, and property brokers.

## Road Maintenance and Stone Supply Co. Limited.

This company was registered with a capital of £50,000 in £1 shares, on May 27th, by Dollman and Co., of 9, and 10, King Street, London, E.C., to carry on the business of contractors for public works, granite, Kentish rag, flint, and gravel merchants, &c. The signatories (each one share) are Messrs. M. J. Greig, H. E. Beadle, C. H. Clarke, L. Cadic, H. W. Clarke, J. C. H. Greig, and W. B. Pritchard. The number of directors is to be not less than three, nor more than five. The subscribers are to appoint the first. Qualification £100.

## Ynysboth Paving Stone Company, Ltd.

This company was registered with a capital of £5,000 in £1 shares on May 31st by Jordan and Sons, Ltd., of 120, Chancery Lane, W.C. The objects of the company are to acquire a piece of land forming a part of the Ynysboth Uchaf Farm, in the Aberdare Vale, in the county of Glamorgan, together with the adjoining quarry situated on Ynysboth Isaf Farm, to enter into an agreement with D. Jenkins, J. George, and A. Richards, and to carry on the business of stone and cement merchants, &c. The first directors—to number not less than two nor more than ten—are G. H. Smith, D. Jenkins, J. George, A. Richards, O. W. Davies, and P. E. Hill. Qualification, £100. Remuneration as fixed by the company. Registered office: 3, Mill Street, Pontypridd, Glamorgan-shire.

## Black Hill Brick and Terra-Cotta Co. Limited.

This company was registered on May 31st, with a capital of £15,000 in £10 shares, by Jordan and Sons, Limited, of 120, Chancery Lane, London, W.C. The company has been formed to acquire certain lands at Black Hill, Entwistle, Lancashire, to adopt an agreement with R. Calderbank, Samson Fish, Swain Fish, and W. J. E. Salt, and to carry on the business of manufacturers of and dealers in red facing bricks, pipes, tiles, &c. The first directors—to number not less than three nor more than seven—are W. J. E. Salt, W. Bretherton, J. Ollerton, R. Platt, and N. Rushton. Qualification £250. Remuneration as fixed by the company. Registered office, 10, Carrington Road, Chorley, Lancashire.

# COMING EVENTS.

- Wednesday, June 14.**  
CARPENTERS' COMPANY.—Examination at their Hall. 6 to 10 p.m.
- Thursday, June 15.**  
SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—Third conversazione.  
SOCIETY OF ANTIQUARIES.—8.30 p.m.  
INSTITUTE OF SANITARY ENGINEERS (Incorporated).—Half-yearly general meeting for the reception of balance-sheet, annual reports, &c. 8 p.m.  
CARPENTERS' COMPANY.—Examination at their Hall. 6 to 10 p.m.
- Friday, June 16.**  
CARPENTERS' COMPANY.—Practical Examination at the Company's Schools, Great Titchfield-street. 9.30 a.m. to 5.30 p.m.
- Saturday, June 17.**  
PEOPLE'S PALACE ARCHITECTURAL SOCIETY.—Visit to Drapers' Hall, E.C. 3 p.m.  
CARPENTERS' COMPANY.—Viva Voce Examination at the Hall. 12 noon.  
INCORPORATED ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.—Northern District Meeting at Whitehaven.
- Wednesday, June 21.**  
SOCIETY OF ARTS.—Conversazione.

# CURRENT PRICES.

FORAGE.			
Hay, best	per load	£ 8 0	8 10 0
Sainfoin mixture	do.	3 0 0	3 15 0
Clover, best	do.	3 10 0	4 5 0
Beans	per gr.	1 6 0	—
Straw	per load	1 4 0	1 16

OILS AND PAINTS.			
Castor, French	per cwt.	1 5 8	—
Colza, English	per cwt.	1 3 3	—
Copperas	per ton	2 0 0	—
Kerosine, water white	per cwt.	1 5 0	1 15 0
Lard	per cwt.	1 8 9	1 9 0
Linseed	per cwt.	1 0 6	1 0 7½
Neatsfoot	per gal.	0 2 6	0 4 0
Paraffin	per cwt.	0 10 2	0 10 0
Pitch	per barrel	0 8 0	0 8 6
Tallow, Town	per cwt.	1 3 0	1 5 0
Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 14 3	1 14 6
Glue	per cwt.	1 14 0	2 18 6
Lead, white, ground, carbonate	per cwt.	0 19 0	—
Do. red	per cwt.	0 17 0	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	3 8 6	3 9 6
Do. sticklac	do.	2 2 6	2 15 0
Fumice stone	do.	0 8 9	—

METALS.			
Copper, sheet, strong	per ton	88 0 0	—
Iron, bar, Staffs. in London	do.	6 15 0	8 10 0
Do. Galvanized Corru- gated sheet	do.	12 10 0	2 15 0
Lead, pig, Spanish	do.	14 5 0	14 6 3
Do. English common brands	do.	14 10 0	—
Do. sheet, English, 6lb. persq.ft. and upwards	do.	16 10 0	—
Do. pipe	do.	17 5 0	—
Nails, cut clasp, 3in. to 6in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Foreign	do.	117 2 6	117 12 6
Do. English ingots	do.	116 0 0	117 0 0
Zinc, sheets, English	do.	27 10 0	28 10 0
Do. Veille Montaigne	do.	31 0 0	—
Do. Spelter	do.	27 10 0	28 0 0

TIMBER.			
SOFT WOODS.			
Fir, Dantzic and Memel	per load	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Larch, log, Dantzic	per fath.	4 10 0	9 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Deals, Archangel 2nd & 1st per P. Std.	do.	10 15 0	18 10 0
Do. do. 4th & 3rd.	do.	12 0 0	12 5 0
Do. do. unsorted	do.	7 5 0	8 5 0
Do. Riga	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow	do.	14 15 0	—
Do. do. 2nd	do.	12 0 0	—
Do. do. Unsorted	do.	8 0 0	11 5 0
Do. do. White	do.	7 15 0	9 15 0
Do. Swedish	do.	11 5 0	15 15 0
Do. White Sea	do.	12 5 0	—
Do. Quebec Pine, 1st.	do.	16 10 0	22 0 0
Do. do. 2nd	do.	12 0 0	—
Do. do. 3rd &c.	do.	7 0 0	7 15 0
Do. Canadian Spruce, 1st	do.	9 0 0	10 5 0
Do. do. 3rd & 2nd	do.	6 5 0	8 0 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	per P. Std.	6 15 0	8 10 0
Flooring Boards, 1 in. prepared, 1st	per square	0 11 3	—
Do. 2nd.	do.	0 10 6	—
Do. 3rd &c.	do.	0 6 3	0 8 9

HARD WOODS.			
Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 12 6	3 17 6
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, Lin, Cuba	per ft. sup.	0 0 4	0 0 4½
Do. Honduras	do.	0 0 4½	—
Do. Tobasco	do.	0 0 0	4/16
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 4 27/32	—
Do. African	do.	0 0 3 9/32	7/8
Do. St. Domingo	do.	0 0 4 23/32	6 23/32
Do. Tobasco	do.	0 0 5 15/32	5 27/32
Oak, Dantzic and Memel	per load	3 5 0	3 5 0
Do. Quebec	do.	4 12 6	5 0 0
Teak, Rangoon, planks	do.	9 15 0	14 5 0
Wainscot, Riga (Bauk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub. ft.	0 2 6	0 4 2

# TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

BRANKSOME.—For tar-paving, kerbing, &c., to foot-ways for the Branksome Urban District Council. Mr. Samuel J. Newman, surveyor to the Council:—

A.	B.
Wainwright and Co. (No quotation).....	£3,486 5 8
S. Minty .....	2,923 11 6
E. Bradshaw .....	2,522 19 0
G. T. Budden .....	2,667 17 0
Asphaltic Limestone Concrete Company.....	2,623 14 0
Josiah Smart .....	2,369 5 2
H. C. Brixey .....	2,052 1 9
Maichin and Co. ....	2,440 2 7
Grounds and Newton Turner, Heaton, and Mitchell, Manches- ter* .....	2,389 10 11
(No quotation).....	2,451 14 7
(No quotation).....	2,408 16 1

\*Accepted.

A.—If local gravel is used for the bottom layer of tar-paving.  
B.—If limestone as specified is used for tar-paving throughout.



**BRIDLINGTON QUAY.**—For the erection of a pair of semi-detached villas, Spring-street, for Mr. F. G. Purdon. Mr. J. Earnshaw, architect, Bridlington Quay:—  
Blackburn & Son £1,499 0 0 J. H. Hudson ... £1,323 13 0  
E. Corner ... 1,385 0 0 W. Moody ... 1,318 10 0  
W. Barn ... 1,360 0 0 A. Gardam ... 1,158 14 6  
T. Blackburn ... 1,329 0 0 E. Wilson ... 1,137 14 5  
\*Accepted. [All of Bridlington Quay.]

**BRIDLINGTON QUAY.**—For the erection of two houses and three shops for Messrs. Lowson. Mr. J. Earnshaw, architect, Carlton House, Bridlington Quay:—  
J. H. Hudson ... £2,307 0 A. Gardam ... £1,743 15  
W. Moody ... 1,830 0 T. Blackburn ... 1,661 0  
F. Blackburn ... 1,757 0 J. Rennard ... 1,550 0  
E. Corner ... 1,750 0 \*Accepted  
[All of Bridlington Quay.]

**BROMLEY (Kent).**—Accepted for the erection of a house on the Sundridge Park Estate, for Mrs. Hindley. Messrs. Niven and Wigglesworth, architects, 34, Mecklenburg Square:—  
Lewis Evans, Bromley ... £1,600

**BROMLEY (Kent).**—Accepted for the erection of a house, Park Hill, Bickley, for Mr. Stenhouse. Messrs. Niven and Wigglesworth, architects, 34, Mecklenburg Square:—  
Lewis Evans, Bromley ... £1,595

**BURTON-ON-TRENT.**—Accepted for erection of artisan's dwellings (block No. 1), on the Horninglow Estate, for the Burton-on-Trent Artisans' Dwellings Company, Limited. Mr. Thomas Jenkins, architect, 35, High-street, Burton-on-Trent. Quantities by the architect:—  
Henry Edwards ... £3,962 10

**BURTON-ON-TRENT.**—For alterations to the Stapenhill Vicarage, for the Rev. F. W. Meynell. Mr. Thomas Jenkins, architect, 35, High-street, Burton-on-Trent. Quantities by the architect:—  
George Kennard, Accepted on schedule of prices.

**CARDIFF.**—Accepted for alterations and additions to Nos. 8 and 9, High Street, Cardiff, for Mr. Samuel Hall. Mr. S. Rooney, architects. Quantities by Mr. S. Rooney, jun.:—  
Thomas and Co., Cardiff ... £1,000

**CARDIFF.**—Accepted for rebuilding No. 15, High Street, Cardiff, for Mr. E. P. Reece. Mr. S. Rooney, architect. Quantities by Mr. S. Rooney, jun.:—  
C. H. Gibbon, Cardiff ... £1,200

**CHELMSFORD.**—For the erection of a pair of villas in King Edward-avenue, for Mr. W. C. Girdlestone. Mr. R. Mawhood, architect:—  
W. Fincham ... £1,190 J. Gowers ... £1,150  
\*Accepted.

**CLACTON-ON-SEA.**—For the erection of two houses, Marine Parade West, for Mr. F. Stauffer. Mr. T. H. Baker, architect and surveyor, Clacton-on-Sea:—  
Everitts and Son ... £2,875 H. J. Linzell ... £2,547  
Myll and Ellis ... 2,670 F. Dupont ... 2,477  
E. West ... 4,643 J. McKay ... 2,438  
[Architect's estimate, £2,100.]

**ILFORD.**—For the erection of two dwelling-houses, with shops, in the High-road, Ilford, Essex. Mr. Geo. M. Nye, architect, 47, Hova Villas, Hove:—  
Stroud ... £2,165 Willmott ... £1,855  
Primmore ... 1,860 Gowen (accepted) ... 1,639

**LEEDS.**—Accepted for the erection of Parochial Institute, Cavendish-road, Mr. H. Walker, architect, 8, Upper Fountains-street, Leeds:—  
Thos. Hannam, Raglan-road, Leeds ... £3,838 10

**LEYTON (Essex).**—For the construction of a chimney shaft, for the Urban District Council. Mr. W. Dawson, C.E., Town Hall, Leyton:—  
Cross and Co. ... £4,607 0 J. Jackson ... £3,147 0  
Myles and Warner ... 4,200 10 F. J. Coxhead, Ley-  
Gregar and Son ... 3,993 0 tonstone ... 2,935 0  
Neil and Co. ... 3,450 0 \*Accepted.

**LONDON.**—For new drainage works, and alterations to The Hall, Lincoln's Inn. Mr. Dennett H. Barry, surveyor to the Honourable Society of Lincoln's Inn, 21, Old-square, W.C.:—  
B. C. Hubble ... £2,675 Alfred Bush ... £1,677  
G. A. Watts ... 1,975 \*Accepted.

**LONDON.**—For alterations and rebuilding, Kensington Dispensary, Church-street, W., for the Trustees. Mr. G. Gordon Stanham, architect, 100a, Queen Victoria-street, E.C. Quantities by Mr. Gilbert Booth, 3, Adelaide-street, W.C.:—  
Duffield and Son ... £3,340 Barker and Co. ... £2,992  
Perry and Co. ... 2,925  
Walter Nash ... 3,150 Kearley ... 2,870  
John Appleby ... 2,995 Speechley and Smith ... 2,845

**LONDON.**—For the erection of new business premises in High-street and Wimpole-street, Clapham, for Mr. J. G. Waite. Mr. Fred E. Halford, architect, Ingram House, 165, Fenchurch-street, E.C. Quantities by Mr. A. J. Thompson, 50, Lincoln's Inn-fields, W.C.:—  
W. Downs ... £4,428 George Parker ... £4,140  
Kilby and Gayford ... 4,355 Garret and Son ... 4,056  
Woodward and Co. ... 4,299 Edwards and Medway ... 4,050  
J. E. Oliver ... 4,281 Nichols Bros. ... 4,028  
\*Accepted.

**LONDON.**—For erection of chimney shaft and alterations and additions to boiler-house at the South-Eastern Hospital, for the Metropolitan Asylums Board:—  
Kirk and Randall, Wool-  
wich, S.E. ... £5,590 0 0  
F. and H. F. Higgs ... 25,432 0 0  
F. and F. J. Wood ... 5,223 0 0  
Hilton and Sons ... £1,669 10 0  
Harris and Wardrop ... 1,479 0 0  
Whitehead and Co., Ltd. ... 1,075 0 0  
Cross and Co. ... 1,012 12 4  
J. O. Richardson, Albert  
Works, Peckham, S.E. ... 969 0 0  
Alterations to  
Boiler House. ... 3,858 0 0  
\*Accepted.

[Architect's estimate, £5,396.]  
**LONDON.**—For the erection of new flour mills at Millwall Docks, E., for Messrs. McDougal Brothers, exclusive of constructional ironwork. Robert E. Crossland, A.R.I.B.A., architect, 1, Racquet-court, Fleet-street, E.C.:—  
Shillitoe and Sons ... £16,250 Outhwaite and Son ... £15,234  
Foster and Dicksee ... 15,819 Harris and Wardrop ... 14,987  
Patman & Fothering-  
ham ... 15,476 Perry and Co. ... 14,961  
Ashby and Horner ... 15,464 J. Greenwood and Son ... 14,738  
Kilby and Gayford ... 15,430 J. Carmichael ... 14,362  
H. Lovatt ... 15,338 Howell J. Williams ... 14,286  
Holliday & Greenwood ... 13,500  
For the constructional ironwork and gangways at above.  
Hawkins and Baxter ... £2,370 Matthew T. Shaw & Co. ... £2,181  
Moreland and Son ... 2,263 Deane Ransome & Co. ... 2,024

**LONDON.**—For the erection of club premises, Nos. 45 and 47, Albany-road, Camberwell, S.E., for the North Camberwell Radical Club and Institute. Mr. A. J. Periam, F.S.I., architect, 43, Cannon-street, E.C. Quantities by the architect:—  
Section A. Section B. Total.  
Battley, Sons, and Holness ... £4,995 £2,304 £7,299  
Nash ... 4,825 2,400 7,225  
Bloomfield and Evans ... 5,017 2,182 7,199  
Downs ... 4,883 2,245 7,128  
Marchant and Hirst ... 4,805 2,312 7,117  
Tyerman ... 4,640 2,264 6,904  
Edwards and Medway ... 4,630 2,170 6,800  
Courtney and Fairbairn ... 4,539 2,245 6,784  
\*Accepted.  
† Too late.

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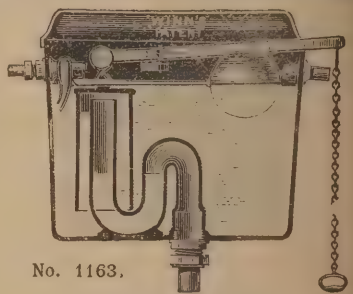
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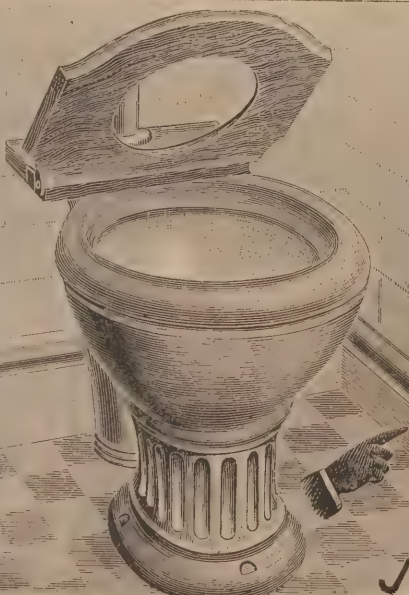
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**TO BUILDERS AND CONTRACTORS.**  
The Council invite TENDERS for the ERECTION of a JOINT ISOLATION HOSPITAL. The plans and specifications can be seen, and bills of quantities obtained, at the Office of Mr. JAMES GIBSON, No. 3, New-street, Basingstoke, on payment of Two Guineas, which will be returned on receipt of a bona-fide Tender.

Security will be required for the due performance of the contract.

The Council will not be bound to accept the lowest or any Tender.

Sealed Tenders, endorsed "Isolation Hospital," to be delivered at my Office, Town Hall, Basingstoke, by TWELVE o'clock, noon, on WEDNESDAY, JUNE 21st, 1899.

Town Hall, Basingstoke,  
June 1st, 1899.

F. S. CHANDLER,  
Town Clerk.

### COUNTY BOROUGH of BRIGHTON.

**TO CONTRACTORS AND OTHERS.**  
Notice is hereby given that the Council of the said County Borough will receive TENDERS from such persons as may be willing to enter into a Contract for the CONSTRUCTION of an UNDERGROUND CONVENIENCE, together with sundry Works connected therewith, around the base of the Clock Tower, Queen's-road, Brighton.

The specifications and form of Tender may be obtained on application at the Office of the Borough Engineer and Surveyor, Mr. FRANCIS J. C. MAY, Memb.Inst.-C.E., at the Town Hall, Brighton.

Sealed Tenders, addressed to me, and endorsed "Tender for Construction of Underground Convenience," must be left at my Office, at the Town Hall before TEN o'clock in the forenoon on FRIDAY, JUNE 30th, 1899.

Power is reserved to reject the lowest or any Tender.  
FRANCIS J. TILLSTONE,  
Town Clerk.  
Town Hall, Brighton,  
June 3rd, 1899.

### BOROUGH of TUNBRIDGE WELLS.

**WORKMEN'S DWELLINGS.**  
The Corporation are prepared to receive TENDERS for the ERECTION of FIFTY-THREE FOUR-ROOMED COTTAGES and FIVE BLOCKS of TEN MEN'S.

Plans and specification may be seen at the Borough Surveyor's Office, and quantities and forms of Tender obtained from me on payment of Two Guineas, which will be returned on receipt of a bona-fide Tender.

Tenders to be sent to me on or before JUNE 19th, 1899.

The Corporation do not bind themselves to accept the lowest or any Tender.

By order,  
W. C. CRIPPS,  
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## COMPETITIONS.

### TO ARCHITECTS.

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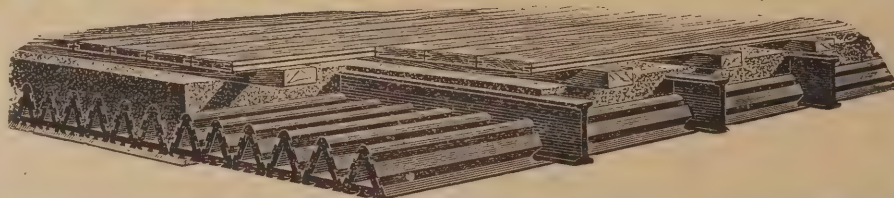
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## BUILDING PRACTICE IN PARIS.

## THE MAKING, WIDENING, AND STRAIGHTENING OF THE STREETS.

By EDWARD CONNER.

IT was only in 1811 that any important works for the architectural amelioration and ornamentation of the city of Paris were undertaken. Till the seventeenth century the inhabitants were free to construct houses independent of any line of order, but a decree published in the year 1783 directed that henceforth no street could be made having a width less than 30ft., and that in the case of streets of a smaller width, where houses were to be rebuilt, space should be secured to obtain the decreed breadth. Later the fundamental principle of the façade line for structures was fixed, and adopted by the whole country. That line is arranged as the boundary for the highways and local roads, as well as for streets in cities, boroughs, and hamlets. Those intending to build houses must rigorously observe that line of demarcation, under pain of having their edifices demolished, as well as being fined into the bargain for violating the law. Nor can any new street be opened unless complying with the line of regularity. An individual having selected a site in Paris on which to erect a house, forwards his application, with the plans of the projected buildings, to the Secretary of the Prefecture of the Seine, familiarly and better known by the name of "l'Administration"—but which is practically the Municipal Council—by whom it is referred to the Architectural Department. The latter consists of twenty salaried architects, one for each of the *arrondissements* or wards of the city; twenty assistant architects, twenty-one inspectors, fourteen sub-inspectors, seven superintendents, and eleven examiners of executed work and estimates. This body considers all demands for the erection of buildings, the opening, widening, and rectification of the irregularity of streets, and the sewage, gas, and water arrangements. Independent of this staff, the Prefecture of Police has its own ten architects to watch over the salubrity of buildings, the waste grounds of the city, and the structures that might entail accidents. Then the Government also has its Department of Public Works, which looks after public edifices, both civil and religious, the monuments, &c.

If the applicant after the lapse of twenty days receives no objection against his demand to build, he can at once commence operations. The architect and builder now come upon the scene, and they are bound by iron regulations. Let it be remembered that no jerry house can be erected in Paris; each structure is composed of iron and stone, destined to last two or three centuries, and representing a studied investment to yield five, but of late not more than three, per cent., on the capital sunk. Before the contractor can commence operations he must forward to the Administration the working plan of the foundations, along with a sketch of the geological character of the site. The architect's duty consists, not only in designing the plans of the building, but in watching over their execution, and seeing that sound materials only are employed, the builder undertakes the works at his own risk, while the official inspectors control all. Both the architect and builder are jointly responsible for their edifice during ten years, should it prove defective either from faultiness in construction or in plan. Paris, that is to say, the Municipal Council which represents the Prefecture of the Seine, has a special right to expropriate, in the interest of public utility, the facilitating of traffic, &c. As a general rule, the municipality's power to expropriate is limited to the houses coming between the two fixed lines, or boundaries of the street. It is the Municipal Council that decides what new streets shall be made, widened, or straightened. The aim is not only to embellish the city, and relieve the congested traffic of the main arteries of circulation, but also to admit air and sunlight into the old quarters, the slums of the capital. When the Second Empire collapsed,

several of the city improvements commenced by Baron Haussmann were unachieved. A few remain in that condition still, such as the Boulevard Haussmann itself, which is awaiting its destined opening up to the Bourse or Exchange.

Another vast scheme has just been completed, namely, the termination of the Rue Réaumur, from the Bourse to the Jardin du Temple, close to the Bastille. This forms a straight, uninterrupted wide street from the Place de l'Opéra, more than two miles in length, that cuts through the business and industrial centres of the city. The completing of the Avenue d'Antin to the Rue du Faubourg St. Honoré, had to be reduced in width, on account of the great expense the execution of the original plan would entail. The municipality could only accomplish what its resources permitted; but it executed secondary improvements in widening thoroughfares through districts densely inhabited by the working classes, demolishing houses that projected beyond the new street lines, and, above all, completing the sewage system. The Council having fully examined and publicly discussed the necessity for opening a new street on the grounds of public utility, the technical commissions make surveys of proposed routes, and draw up the necessary plans accordingly, including the estimates of course. The owners and occupiers of houses situated within the lines or boundaries of the street receive a notice to forward, accompanied by all legal proofs, their claims for indemnity for being thus expropriated. These lie in the public office of the Mayoralty during eight days, when all interested in the claims and mortgages, or who are opposed to the improvements, can record their objections, or make suggestions. An intended *approprié* can appeal, but if defeated, he must pay all the expenses of the suit. All that the municipality does in addition is to demolish the condemned structures; to offer the site on each side of the street lines free of *débris* to those who desire to purchase; to construct the main sewer—a carriage drive, beneath the roadway, with lateral branchings for future cess pool matters—and afford the water, gas, and electric companies facilities to lay down their mains and cables beneath the footpath.

Though the Municipal Council only expropriates structures coming within the boundaries of the new street, it can purchase on right or left any establishment of an insalubrious character laid bare by the improvement. Those who are to be expropriated having sent in their claims for an indemnity, the council replies by its offer. If the matter is—not amicably settled the parties appear before a special and sworn jury composed of twelve business men, promiscuously selected, with four supplemental jurors, but the latter cannot vote. The case on both sides is patiently examined—it is really a court of arbitration. The jury decides by a majority vote the amount to be awarded, and from this decision there is no appeal; it must not be more than the claimant demanded nor less than the municipality offered. The jury is to give no reasons for its verdict. If the indemnity be less than the sum offered by the municipality the appellant pays the cost; if equal the municipality does so; if superior both parties meet the one-half. As a general rule the jury leans to augmenting a fair claim for compensation. The decisions are duly published in the "Journal Officiel," and those having the right to the indemnity are paid. In case of contestation, the amount is simply transferred to the *Caisse des Dépôts et Consignations*, where it remains until such time as the law decides.

The property having been cleared, and the sewers, &c., constructed, proprietors, architects, and builders can commence their respective operations. The proprietors must pay for the initial paving of the street, and flagging of the foot-paths. Minute rules are fixed for the height of the house, in proportion to the width of the street, for the chimneys, sewage, water-closets, projection of cornices, balconies, &c. A street 26ft. wide can have a house from ground floor to attic, 40ft. high; if 67ft. wide, the house may be 67ft. in height. The administration can make concessions in the case

of an artistic structure, an institution, or a factory. In the case where only a part of a building, or a portion of land would be required for any street improvements, the municipality will purchase the lopped-off portions if required, and dispose of them to neighbouring occupiers. After the making of a new street has been decided upon, the occupiers, who repair or improve premises destined to be demolished, in order to increase their demand for indemnity, will see the "extra" summarily rejected.

There are societies that purchase from the municipality the sites on each side of the new street, and resell to private persons as dearly as they possibly can. Insurance companies invest their funds largely in both speculations. But the site must not be kept unoccupied beyond an agreed upon period, under forfeiture of the right, the infliction of a fine, and the public sale of the lots. There can be no difficulty in obtaining money to build; the combinations of the *Crédit Foncier* will secure that, by means of loans at a fraction under five per cent. per annum, repayable over a period of seventy-five years; but the *dut Foncier* must have or be given the first mortgage on the building.

Where does the Municipal Council obtain the money to carry out the street improvements of Paris? Principally by loans, by the sale of the building sites, the increased revenue from the higher assessment of property, the augmentation in the population, and the numerous attractions which the city of Paris affords to both provincial and foreign visitors. In 1890 Paris had 84,083 rateable constructions, of which 81,291 were dwelling houses, the rest were factories and workshops. The population of the city is two and a-half millions; its revenue in 1896 was 337 million francs, of which 153 millions represented the outcome of the *octroi* or entry dues; while thirty-three millions are raised by quasi-direct taxation of four to five centimes (one-halfpenny) on rateable property; a one-half centime, that is, the twentieth part of a penny, struck on the latter will realise 334,000 francs. The city's expenditure is equal to its receipts, and of the former 111 million francs are annually allocated to pay the interest on loans and their extinction by lottery redeemed bonds. The total debt of Paris at present is nearly two and a-half milliards of francs, raised by ten loans between 1855 and 1894. From 1858 to 1867, that is to say, during the Second Empire, and under the sway of the great city embellisher, Baron Haussmann, 816½ million francs were borrowed. The Municipal script of Paris ranks as the first of *valeurs* in France; it is always above par, and yields 3 to 4 per cent.

**Dispute About a Verbal Agreement.**—At the Keighley County Court last Wednesday Messrs. Abraham Sunderland and Sons, stone merchants and quarry owners, of Hainworth, near Keighley, sued Mr. William Briggs, contractor, of Bradford, to recover £22 6s. 2d., balance of account for stone supplied. The question was as to the precise nature of the verbal agreement between the two parties. It appeared that the defendant gave Mr. John Sunderland, one of the plaintiffs, an order for a consignment of 8in. setts at Bradford, in April, 1898, to be used in the repair of Clyde Street, Bingley, for the Urban District Council. The material was supplied at the plaintiffs' direction by Messrs. Alexander Dyson and Co., of Haworth, but on its reaching Bingley the clerk of works refused to allow the first three trucks to be laid. Mr. Armistead, who was then surveyor, was seen, and he condemned the stones, and also rejected four trucks as too soft. The material had since been lying at Bingley Station. Mr. Sunderland said that the only condition specified was that the setts should be similar to those used in Charles Street, Bingley, and this he had carried out. The defendant declared that he told the plaintiff most emphatically that the pavings would have to be passed by Mr. Armistead. His honour elected to accept the defendant's version of the contract, and gave judgment accordingly, with costs.



## Masters and Men.

**Earlstown Bricklayers** have struck for an advance of  $\frac{1}{2}$ d. per hour, which would make their wages 9d.

**Wellingborough Bricklayers** have struck work in consequence of the refusal of the masters to limit boy-labour.

**The Strike at Messrs. Doulton and Co.'s Clay Pits**, which occurred some seven weeks ago because twelve men were dismissed for declining to take the places of twelve others who had refused to work until nine o'clock, has terminated.

**Edinburgh and Leith Plumbers** still continue to hold out, and seem to be slowly but surely compelling the masters to accede to their demands. Some sixty-seven masters have now fallen in with their requests.

**The Joiners at Wakefield**, who have been on strike since May 1st, have decided to resume work at the advance offered from  $7\frac{1}{2}$ d. to 8d. per hour, and on the old rules, leaving the question of new rules until after the coming conference in connection with the building trades dispute.

**The Newcastle and District Builders' Association** refused an advance of wages from 9 $\frac{1}{2}$ d. to 10d. per hour to the joiners in Newcastle-on-Tyne, North and South Shields, and Blythe. The men went out on strike last Saturday, and refused the masters' offer to defer the dispute to arbitration.

**Settlement of Arbroath Masons' Strike.**—At a conference held last week between the masters and representatives of the men in reference to the strike of the operative masons for an advance of wages from 8d. to 8 $\frac{1}{2}$ d. per hour, the masters intimated that they were prepared to give the increase, and the offer has been accepted on behalf of the men.

**Leicester Bricklayers' Labourers' Strike.**—The Master Builders' Association of Leicester having invited the labourers to return to work under the old conditions, the men held a meeting to consider the situation. It was unanimously determined to adhere to the demand for an increase of wages to 6 $\frac{1}{2}$ d. per hour, a similar resolution being come to at a meeting of the local branch of the General Labourers' Union.

**The Edinburgh and Leith Joiners' Strike** still drags along. The Scotch are usually very business-like and prompt in all matters, but this affair seems to be an exception. At a meeting of the employers last week it was ascertained that over 800 men were at work with associated employers under the old conditions. A letter was read from Mr. J. W. Robertson, of Her Majesty's Board of Works, suggesting a meeting between employers and workmen. The meeting agreed to this taking place, the arrangements for the conference being left with Mr. Robertson. At a meeting of the workmen it was reported that three additional masters who would employ about fifty-five workmen altogether had accepted the terms. Up till now the number of masters who have conceded the demands is twenty-two.

**The Dumfries Masons' Strike** still continues, although there is now some likelihood that it will be shortly brought to a close. Some little time ago Provost Glover offered to undertake the office of arbiter alone or conjointly with Sir Mark McTaggart Stewart, B. P., or Mr. Thomas McKie, advocate. At a meeting of the men on Monday night last week it was resolved to thank the Provost for his intervention, and to inform him that, while they declined arbitration, they were quite ready to meet with the employers in conference presided over by him. On Tuesday night last week the employers came to a similar resolution, and as both parties are

apparently anxious for a settlement it is believed that one will be effected in the manner suggested.

**The Danish Lock-out.**—At the meeting of the London Trades Council last Thursday evening the Secretary read the following telegram from the Chairman of the Trades Federation of Denmark: "The Association of Danish Employers has excluded 30,000 workers in the building and iron industries in Denmark. Another 10,000 are also excluded. We number 80,000 organised men. Denmark has but two millions and a quarter of inhabitants, therefore it is impossible to support ourselves with help from this country. The capitalists have claimed so much that the existence of our organisations will be impossible if we lose. Help us with money as speedily as you can." It was agreed to ask London Trade Unions to support the Danish Federation financially.

**The German Strikes Bill.**—In the course of the debate on the Supplementary Estimates in the Reichstag last week Herr Bebel made a speech on the Strikes Bill. He said it constituted the most violent attack which had ever been made on the freedom and human dignity of the working classes, and that it came at a moment when, on the other side of the Vosges, the wrong done to a single man was being made good, and when, on the other side of the Alps, the monarchy was trying to undo by an amnesty the wrong which had been done in the preceding year. Then, upon the speaker describing the Bill as a shameful measure, he was called to order. Count Posadowsky, Secretary of State for the Interior, said, in reply, that Herr Bebel would receive an adequate answer when the Bill was being discussed. The Bill was intended to cope with excrescences upon the right of combination.

**The Dispute in the Building Trades.**—The conference between the masters and men in the building trades, which was to have been held in London last Thursday, has been indefinitely postponed. It was anticipated that the conference would be held on the same lines as the one between the building trades' employers and the representatives of the plasterers. The meeting of the Council of the National Federation of Building Employers at Derby on Monday last week was held to confirm the settlement with the plasterers, to appoint three members to meet an equal number of delegates from the Building Trades Operative Unions, and to arrange the basis of procedure at the general conference which was to have taken place last Thursday. A report setting forth the proceedings at the conference with the plasterers was presented, and the settlement then effected was confirmed. At the conference which took place at Derby on the same day, the men's delegates declined to accept the proposal to conclude the dispute on the lines of the settlement with the plasterers, stating that the suggestion made at the conference of trade union delegates at Manchester only empowered them to confer with a view to the establishment of a National Conciliation Board, to which disputes could be referred. When it was found that the men's delegates were only empowered to discuss the establishment of a national conciliation board, the employers passed a resolution giving them fourteen days in which to put their proposals into writing. If the conference had resulted satisfactorily for the employers, the Yorkshire masters would have withdrawn their lock-out. The Leeds branch of the National Association of Operative Plasterers have unanimously ratified the terms of the settlement agreed upon at the London conference. The vote of the members of the National Association of Operative Plasterers on the settlement arrived at at the conference in London was declared last Saturday, and shows that 4,559 were in favour of accepting the terms and only 368 against. This vote is very satisfactory and remarkable among Union votes for its unanimity upon the terms of settlement. The Executive Committee of the Plasterers' Association, who negotiated the settlement, have been re-elected by great majorities.

## Builders' Notes.

**Cardiff Masons** have accepted an advance of  $\frac{1}{2}$ d. per hour on their wages.

**Jarrahdale Jarrah.**—The "Oberon," with 670 loads of Jarrahdale Jarrah on board, has arrived in London to the order of the agent for Jarrahdale Jarrah Forests and Railways, Limited, 1, Fenchurch Avenue, E.C.

**A Rise in Copper.**—Messrs. Ewart and Son, of 346 to 350, Euston Road, London, N.W., inform us that owing to the increasing price of copper they are compelled to advance all net prices of copper goods  $2\frac{1}{2}$  per cent. This advance, with that of Jan. 26th, makes an extra  $7\frac{1}{2}$  per cent. added to the net price of all copper goods.

**The Mechanical Bricklayer**, to which we referred last week, is the invention of Mr. Alfred William Turner and his son, of Birmingham, who have secured British and international protection for their invention, which is called "Turner's Lineobrick and Octipus Brick-setting Machine." The inventors claim for their appliance the virtue of doing the work now undertaken by bricklayers. Briefly, it will automatically set a row of bricks, slabs, stones, &c. Messrs. Turner have offered to assign the rights of the "mechanical bricklayer" for fourteen years to a workmen's trust, composed of leading trade unionists and non-unionists, the consideration being that each bricklayer earning the average wages of his district shall pay a royalty of 2s. a year to the inventors.

**Disputed Building Line.**—In the case of Regina v. Felixstowe Urban District Council, on the application of Mr. John Crowle, the High Court has granted a rule nisi against the Felixstowe District Council to show cause why they should not pass plans of two houses which the plaintiff proposed to erect in Hamilton Terrace, and of which they had disapproved. On June 6th, before a Divisional Court, consisting of Mr. Justice Day and Mr. Justice Lawrence, the District Council appeared to show cause against the said rule.—Mr. Tindal Atkinson, for the defendants, said the facts of the case were that Mr. Crowle was proposing to build two houses in Hamilton Terrace, Felixstowe. It was a matter of some moment to the District Council to keep the buildings in a uniform line, so as not to have them in an irregular way. The plans lodged by Mr. Crowle, he contended, showed that the buildings would be in front of other buildings in Hamilton Terrace. The plans showed that Mr. Crowle intended to erect a house 25ft. from Hamilton Terrace, whilst the next houses were 78ft. 9in. away from the same street. Mr. Crowle contended that he could build in line with a house known as "Cragside." That building, however, was erected before 1888, when the Public Health Act (Buildings and Streets) was passed. The question was whether "South Cliff" and Beacon Villas were in Brownlow Road or in Hamilton Terrace. These roads were parallel to each other, and the land on which it was proposed to build the houses was between the two roads. Mr. Glen, for the plaintiff, in support of the rule, argued that the case of the Attorney-General v. Edwards, before Mr. Justice Romer, decided the point, and that where houses were set back from the street a distance, they were really not in the street, and that according to the case mentioned, it mattered not as to how letters were addressed for the purpose of finding what street a house might be in. After hearing other decisions quoted in support, Mr. Justice Day said he had come to the conclusion that the decision of the Attorney-General v. Edwards applied, and that the rule must be made absolute, and that the mandamus must issue against the local authority to approve the plans deposited by Mr. Crowle, the building line for Hamilton Terrace being in line with the houses known as Seagull and Cragside.



## Engineering Notes.

**The Eye and Ear Infirmary, Portsmouth,** is being warmed and ventilated by means of Shorland's patent Manchester grates, supplied by Messrs. E. H. Shorland and Brother, of Manchester.

**The New Pier for Rock Ferry** is almost completed, the new landing stage which has been built by Messrs. Jenkins Bros., of Birkenhead, for the Birkenhead Corporation, being delivered on the 8th inst.

**Electricity at Bolton.**—The Bolton Town Council have decided to apply for borrowing powers for £100,000 in connection with electric trams and lighting. The tramway project includes about eight routes of thirty miles.

**The Omagh Asylum,** now in course of erection, is being ventilated by means of "Cousland's Improved Climax" Patent Direct-acting Invisible Roof Ventilators, supplied by the "Climax" Ventilating and Heating Co., Ltd., 93, Hope Street, Glasgow.

**Electric Lighting at Grimsby.**—Consent has been given by the Local Government Board to the application of the Grimsby Town Council to borrow £43,500 to carry out their electric lighting scheme. The Public Lighting Committee of the Corporation have recommended the acceptance of the tender of Messrs. Hewins and Goodhand, of Grimsby, for the erection of the buildings and chimney shaft at a cost of £11,525 2s.

**South Shields Railway Station** is being considerably improved by the North-Eastern Railway Company. The principal feature of the improvement is the laying of a third line of railway through the station, in order to allow of trains being brought alongside of both platforms, and still leaving a line clear for the passage of the engines to reverse. As this will necessitate the widening of the station, the old forge and livery stables, which occupied the site of the old Stanhope and Tyne engine shops, immediately to the westward, have been cleared away, and the west platform, the station wall, and the building in which are located the waiting rooms, offices, etc., will be set further back. A foot-bridge will be then constructed across the railway from platform to platform, near the site of the present temporary structure.

**Institution of Civil Engineers.**—The second annual engineering conference was held in London on June 7th, 8th, and 9th, under the auspices of the Institution of Civil Engineers. The meetings were partly held in the Institution buildings in Great George Street, and partly in the buildings of the Mechanical Engineers and the Surveyors' Institution. They were held in various sections, the subjects being classified as follows:—Railways; harbours, docks, and canals; machinery; mining and metallurgy; ship-building; waterworks, sewage and gasworks; and applications of electricity. Altogether, some thirty-five papers dealing with different phases of these subjects were read. At the opening of the conference last Wednesday the President, Sir William Henry Preece, F.R.S., delivered a short address. He said that conferences like the present facilitated intercommunication among the members, and by bringing them into more personal and social relations with each other harmony was promoted, jealousy allayed, and progress secured. Conferences disseminated knowledge by exciting discussion and extracting opinions from those who had acquired them from the only true master—experience—in every quarter of the world. In the concluding part of his address the president said the Lord Chief Justice's Bill for the suppression of illicit commissions was welcomed by every member of the institution, and it was most gratifying to find that no suspicion of improper practice had ever been adduced against their profes-

sion. They did, however, hear at times of a dangerous border-ground between consultation work and contracting, which was a pitfall to be avoided and to be surrounded by danger signals.

**Alleged Breach of Contract.**—An action was brought against the Mayor, aldermen, and burgesses of Keighley, last Wednesday, at the Keighley County Court, by T. Jackson, machine broker, to recover £50 for breach of contract. Mr. Beverley, for the plaintiff, stated that the action had arisen out of what he contended was the sale of some old materials at the old mill, Corn Mill Bridge, which property had been acquired by the Corporation for street improvements. The plaintiff tendered for the engine, pipes, shafting, etc., and his offer of £75 was at first accepted by the Highways Committee. The borough engineer wrote enclosing an account, and requesting the plaintiff to pay the money to the treasurer. A dispute afterwards arose as to whether a cistern was included in the purchase, and in the end the committee, after deciding to recommend the council to approve the contract, recommended that it should be rescinded. This the council at their meeting agreed to. Mr. Beverley contended that there had been a binding contract between the plaintiff and the borough engineer, as agent for and on behalf of the Highways Committee, and that the committee had sanctioned what their engineer had done. The case collapsed, his Honour holding that there was no evidence of any contract on the part of the committee or the council, or of any authority vested in the borough engineer to enter into such a contract. In his opinion the engineer did not hold himself out as having power to make such a contract. Judgment for the defendants, with costs, was given.

**British Iron Trade Association.**—The annual conference of the members of this association was held last Wednesday at the Westminster Palace Hotel. Sir John Jenkins, who was elected president for the ensuing year, said that during the past year the subject of American competition had occupied a great deal of attention, because the pig iron, rails, billets, wire rails, and other products of the mills and forges of the United Kingdom appeared to have become regular items in our periodical import return. But although this was a deplorable fact, he still thought English firms could successfully compete with American. Mr. W. Jacks read a very useful paper on some recent aspects of industrial conciliation, in which he enumerated cases in which strikes had been prevented by the exertions of local boards of conciliation. Referring to Mr. Ritchie's proposals for preventing and settling disputes between capital and labour, he said that one of the main difficulties of the employers in considering any scheme of mutual action with their workmen designed to get rid of trade conflicts was the fact that they thought they would be thereby called upon to recognise as fully representing the cause and interest of labour delegates or unions that represented only a fractional part of that interest. Another difficulty was that there could be no adequate provision made in such a scheme for representing the unorganised industries, which were, numerically, by far the most important. Another serious objection to the establishment of any general industrial council on the lines suggested by Mr. Ritchie was the fact that if it was to be of any use it must have plenary and final authority in dealing with matters in dispute, and that this condition involved possibilities of the most serious issues being settled by men who could not have an intimate or sufficient knowledge of the questions in dispute. He suggested compulsory arbitration for preventing disastrous trade conflicts. As to the constitution of the tribunal, he inclined to the appointment of not more than three well-known men—business men by preference—in whose judgment and integrity the general community had confidence. Sir A. Hickman doubted whether it was possible to carry out compulsory arbitration. The annual dinner was held in the evening of the same day.

## Surveying and Sanitary Notes.

**Morecambe Improvements.**—The Morecambe Tower Company, Limited, have just let the last of their principal contracts for the erection of a new tower at the East End. The structural iron-work is to be done by Messrs. Somervail and Co., of Bridge and Roof Works, Dalmauir, N.B.

**Electric Railway from Fleetwood to Morecambe.**—The Lancaster Rural District Council have assented to a scheme for constructing an electric railway from Fleetwood to Morecambe. They have also approved of a proposed light railway from Knott End to Lancaster.

**The Devonport Surveyors' Committee** have resolved that the carriageways in private streets in the borough are not in future to be taken over by the local authority as public highways, repairable by the inhabitants, until such carriageways have been paved with wood or stone to the satisfaction of the borough surveyor. This resolution does not apply to streets which had been made up with a finished macadam surface to the satisfaction of the borough surveyor on or before March 31st.

**Oswestry Sewage Disposal.**—Mr. W. A. Ducat, Local Government Board Inspector, recently held an inquiry into the application of the Oswestry Town Council to borrow the sum of £3,500 for the completion of the sewage disposal scheme. The Town Clerk, in opening the case for the Corporation, said the Council asked that the repayment of the proposed loan of £3,500 should be extended over thirty years. The money was required for the purchase of land adjoining the sewage works now in existence, and to enable the works to be completed. The sum of £3,500 was made up as follows:—Works, £1,900; land, £900; and contingencies, £700.

**Bradford Street Paving.**—An inquiry was held at the Bradford Town Hall last week by Mr. H. P. Boulnois into the application of the Corporation to the Local Government Board for permission to borrow £100,000 for the purposes of street paving in the city. There was no opposition, and it was stated that it was proposed to pave Market Street, Lower Ivegate, Booth Street, Hall Ings, Charles Street, Tyrrel Street, Swaine Street, part of Lumb Lane, and Upper Godwin Street with wood. In all there would be 28,482 square yards of wood paving, and the estimated cost was £27,769. There would also be 94,136yds. of granite paving, which was estimated to cost £66,005 18s., and 24,763yds. of footpath to be flagged at a cost of £6,168 5s. The flagging was to be done with Yorkshire stone 3in. thick, and in places concrete flags would probably be tried.

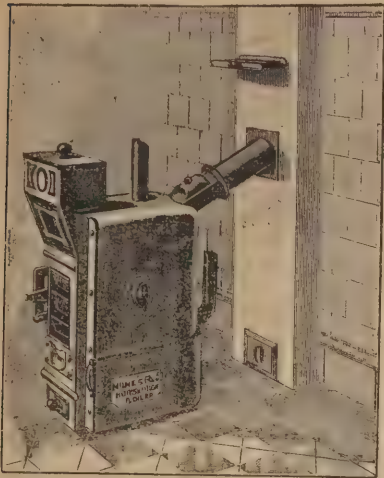
**Manchester Sewage.**—A Local Government Board inquiry was recently held at the Manchester Town Hall by Mr. E. A. S. Fawcett into an application by the City Council for sanction to borrow £30,000 for sewerage works and £3,000 for the equipment of the Harrison Street lodging-house. It was stated by Mr. Hudson, deputy Town Clerk, that the proposal to borrow £30,000 was in respect of repairs to the Moston Brook culvert from a point known as Green Mount to the river Irk. In August last year the culvert collapsed at Hall's Crescent, Collyhurst, bringing two houses to the ground and seriously interfering with the stability of others. Mr. Wilkinson, C.E., carefully examined the culvert, and recommended the Corporation to repair and considerably strengthen the existing culvert, and to construct a supplementary one, 10ft. in diameter, from near Queen's Road, discharging into the Irk near Smedley Bridge. With regard to the Harrison Street lodging-house loan, Mr. Hudson said the present application was for power to obtain means to equip the establishment.



Trade and Craft.

MILNE'S IMPROVED WATER HEATERS.

We are glad to see that Mr. E. Parker Milne, of 15, Craven Street, Strand, London, W.C., has been granted a special licence by the proprietor of the smoke-consuming and fuel economising fire patents to use the same in connection with his own heating apparatus. The heaters are of different types, sizes, and



MILNE'S PATENT HORSESHOE BOILER.

capacities, and are constructed with water-way flues and cross tubes, specially designed to utilise to the fullest extent all the heat which is generated by the patent smoke-consuming fires, the result being that the circulation of the hot water is very rapid, and, as all the heat products of the fuel burnt are utilised, it follows that a great saving in fuel is effected. The fuel employed is common slack coal, which is practically smokeless. One of the boilers can be used for steam. The three great points about these heaters are the absence of smoke, the absence of soot, and perfect combustion, and these advantages help to make a perfect type of heater, the excellence of which is evidenced by the numerous medals awarded to Mr. Milne.

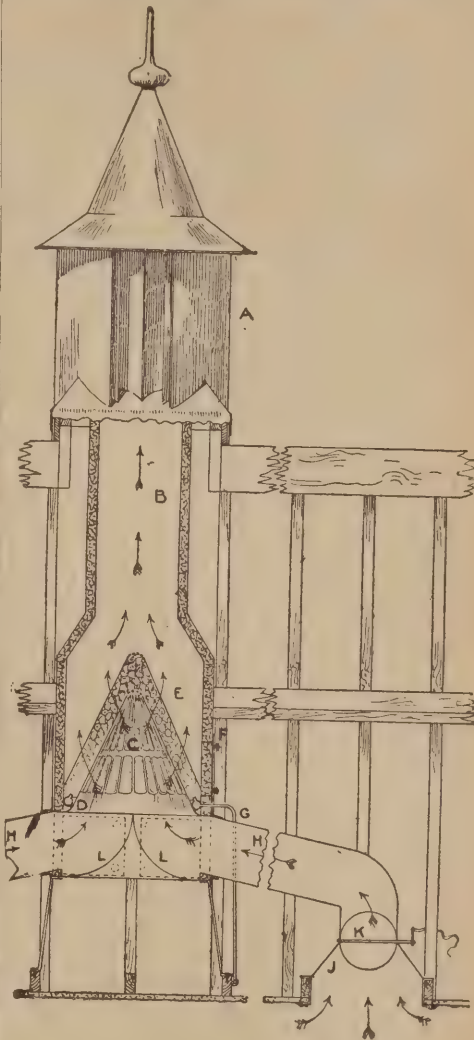
INSTRUCTIONS TO BOILER OWNERS AND USERS.

The National Boiler and General Insurance Company, Limited, of 22, St. Anne Square, Manchester, have sent us an interesting little work, written by E. G. Hillier, which gives instructions respecting the working, treatment, and care of steam boilers, for the use of those who have charge of and are responsible for them. The work gives good directions with reference to matters which experience has shown to be essential to safety, and also to various precautions necessary for the satisfactory working and the prevention of undue deterioration of the steam-raising plant. The first portion of the notes refers to boilers generally, including "Lancashire," "Cornish," and cylindrical externally-fired boilers. Notes respecting special features of vertical, locomotive, and water-tube boilers are also given. There is no doubt that to attain good results in the working of steam boilers, of whatever type, care and attention are necessary, and the steam boiler should be regarded as a machine requiring constant supervision and care in all details. The book supplied by the National Boiler and General Insurance Company, Limited, is one from which even experienced boiler attendants will be able to cull some useful hints.

BACTOLITE.

Bactolite is not a germ, but a germ destroyer. It is a system of ventilation, patented and invented by Mr. Robert Boyle, of Messrs. Robert Boyle and Son, Limited, of 64, Holborn Viaduct, London, E.C., and is specially intended for use in hospitals. By the use of this admirable invention the disease germs in the air are consumed before reaching the air outside the hospital. The incoming air is warmed in cold weather and cooled in warm. The air is also purified by passage between medicated screens. The illustration shows the working of the apparatus. A is Boyle's patent fireproof "air pump" ventilator; B is the main extraction shaft packed with non-conducting material; C is the double grill filled with perforated asbestos balls, through which the disease germs pass and are consumed; D is a ring of atmospheric burners, the flames of which render the asbestos balls incandescent; E is the fireproof chamber which contains the grills; F is a door which gives access to the chamber for lighting and cleansing purposes; G is a gas pipe; H H are the branch extraction shafts

connected with openings in the ceiling; J is a cone which covers the opening in the ceiling; K is a weighted regulating valve; L L is the door giving access to the extraction shafts for cleansing purposes. In connection with the double grill at C, if required, more than one of these can be put in. All outlets and inlets are easily accessible for cleansing purposes.



BOYLE'S PATENT "BACTOLITE."

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—			
June 16	Chartham Down—Alterations to Lunatic Asylum	W. P. Egliss	W. J. Jennings, 4, St. Margaret's-street, Canterbury.
" 16	Sowerby Bridge—Foundry, Mechanics' Shops, &c.	" " " " " "	A. C. Williams, 29, Southgate, Halifax.
" 16	Fleetwood—Museum at School	" " " " " "	Austin and Paley, Architects, Castle Hill, Lancaster.
" 16	Leeds—Pulling Down, &c., Premises	Yorkshire Banking Company, Limited	Bedford and Kitson, Architects, Greek-street-chbrs., Leeds.
" 17	Carnarvon—Hospital	Building Committee	R. L. Jones, Architect, Market-street, Carnarvon.
" 17	Cookstown, Ireland—Iron School	M. and E. J. Houston	J. M. Robinson, Architect, Cookstown.
" 17	Harrington, Cumberland—Alterations, &c., to House	J. B. Little	W. G. Scott & Co., Architects, Victoria-bldgs., Workington.
" 17	Lewes—Pulling Down, &c., Premises	East Sussex County Council	F. J. Wood, County Surveyor, County Hall, Lewes.
" 17	Treherbert, Wales—Alterations to Chapel	" " " " " "	J. Rees, Architect, Pentre, R.S.O.
" 19	Halwell, Devon—Two Cottages	" " " " " "	W. F. Toller, Architect, Gate House, Totnes.
" 19	Loughborough—Alterations, &c., to Corn Exchange	" " " " " "	A. H. Walker, Borough Surveyor, Loughborough.
" 19	Mullion, Cornwall—Six Coastguard Houses	" " " " " "	J. Roberts, J. Alma-place, Redruth.
" 19	Sandbach—Detached Villa	J. Pring	J. Pring, Elworth, Sandbach.
" 19	Swansea—Alterations, &c., to School	U.D. School Board	A. W. Halden, Clerk, Offices, Dynevor-place, Swansea.
" 19	Wadsley, Sheffield—Dining Hall at Asylum	West Riding County Council	Clerk of Works, Asylum, Wadsley, Sheffield.
" 19	Beckenham—Institute, Swimming Baths, &c.	Urban District Council	J. A. Angell, Surveyor, Council's Offices, Beckenham n.
" 19	Wimbledon—Alterations, &c., to Cottage	Urban District Council	C. H. Cooper, Council's Engineer, The Broadway, Wimbledon
" 19	Ardrossan, Scotland—Hospital	Ardrossan and Saltcoats Joint Hospital	Fryers and Penman, Architects, Largs.
" 19	Penlee Point, Cornwall—Fog Signal House, &c.	Corporation of Trinity House	E. G. Verity, 31, Golden-square, W.
" 19	Tunbridge Wells—53 Cottages and 5 Blocks of Tenements	Corporation	Borough Surveyor, Tunbridge Wells.
" 20	Southall, W.—Infirmary and Cottages	St. Marylebone Guardians	A. S. Snell, 22, Southampton-buildings, W.C.
" 20	Sheerness—Schools	City Hospitals Committee	Flockton, Gibbs, & Flockton, 15, St. James's-row, Sheffield.
" 20	Penarth—Alterations to Schools	School Board	L. Grant, Architect, High-street, Sittingbourne.
" 20	Croydon—Repairs, &c., to Public Slaughterhouses	School Board	Seddon and Carter, Bank-buildings, St. Mary-st., Cardiff.
" 20	Halifax—Eleven Houses	S. Webster and Son, Limited	Borough Engineer, Town Hall, Croydon.
" 20	Rathkeale, Ireland—Repair of Church Spire	" " " " " "	Jackson and Fox, 7, Rawson-street, Halifax.
" 21	Bridlington Quay—Dwelling-houses, &c.	T. H. Harrison	J. Horan, 50, George-street, Limerick.
" 21	Hemsworth, near Wakefield—Vagrant Wards	Union Guardians	S. Dyer, Architect, Bridlington Quay.
" 21	Basingstoke—Hospital	Urban District Council	T. H. Richardson, Architect, Hemsworth.
" 21	Manstone—Cottage Home Buildings, &c.	Isle of Thanet Union Guardians	J. Gibson, 3, New-street, Basingstoke.
" 22	Lawrence Cove, co. Cork—Coastguard Station	Corporation	L. Grant, Architect, High-street, Sittingbourne.
" 22	Glasgow—Alterations to Police Buildings	United Methodists	Carpenter-in-Charge, Queen's College, Cork.
" 22	Lostwithiel—Church, &c.	" " " " " "	Office of Public Works, 64, Cochrane-street, Glasgow.
" 23	Halifax—Stabling and Caretaker's House, &c.	" " " " " "	E. B. Brown, Draper, Lostwithiel.
" 23	Kelvedon, Essex—Four Almshouses	" " " " " "	J. F. Walsh, Lances, and Yorks. Bank-chambers, Halifax.
" 23	" " " " " "	" " " " " "	Chancellor and Son, Architects, Chelmsford.



COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—Continued.</b>			
June 23	Nantwich—Bridge	Rural District Council	J. Bobbington, District Surveyor, Willaston, Nantwich.
" 25	Blaina, Mon.—Schoolroom, &c.	English Congregational Church	W. S. James, Secretary to Trustee, 77, High-st., Blaina.
" 26	Alnwick—Repairs to Highway Bridges	Rural District Council	J. Short, Highway Surveyor, Alnwick.
" 26	Cwn, near Ebbw Vale, Mon.—Additions to School	Aberystuth School Board	R. L. Roberts, Victoria-chambers, Abercarn.
" 26	Edinburgh—Extension of Boiler-house, &c.	Magistrates and Council	Burgh Engineer, 1, Parliament-square, Edinburgh.
" 26	Bundoran and Belleek—Stationmasters' Houses	Great Northern Railway (Ireland) Co.	Company's Engineer-in-Chief, Amiens-st. Terminus, Dublin.
" 27	Hill End, near St. Albans—Hospital Block, &c.	County Lunatic Asylum Committee	G. T. Hine, 85, Parliament-street, Westminster.
" 28	Halifax—Detached Villa Residence	Coast Development Company, Ltd.	M. Hall, 29, Northgate, Halifax.
" 28	Walton-on-the-Naze—Floral Hall, &c.	Islington Guardians	C. H. M. Mileham, 1, Lincoln's Inn-fields, W.C.
" 29	London, N.—Works at Relief Offices	Town Council	W. Smith, 65, Chancery-lane, W.C.
" 30	Brighton—Underground Convenience	H.M. Commissioners of Works	E. J. C. May, Borough Engineer, Town Hall, Brighton.
" 30	Chatham—Post Office	School Board	Office of Works, Storey's Gate, S.W.
July 4	West Ham—Cleansing, Repairs, &c.	Union Guardians	W. Jacques, 2, Fen-court, E.C.
" 17	Stamford—Workhouse	University College	J. H. Horton, 50, King-street, South Shields.
" 27	Brighton—Alterations, &c., to Library, Museum, &c.	Laundry Co.	F. J. C. May, Town Hall, Brighton.
No date.	Liverpool—Medical Schools		A. Waterhouse and Son, 20, New Cavendish-street, W.
"	Farnboro', Hants—Extension of Laundry		W. E. Trevena, Ridge Mount, Southampton-st., Farnboro'
<b>ENGINEERING—</b>			
June 16	Glasgow—Waterworks	District Committee	Warren and Stuart, 115, Wellington-street, Glasgow.
" 17	Dudley—Electric Lighting Works	Electric Lighting Committee	Wilson and Storey, 65, Victoria-street, Westminster.
" 17	Wolverhampton—Water Softener	Corporation	J. W. Bradley, Borough Engineer, Town Hall, Wolverhampton.
" 19	Toronto, Canada—Tower Clock, Bells, & System of Clocks	Board of Control	Street and Co., 30, Cornhill, London, E.C.
" 19	Horton, Christiania—Two Centrifugal Pumps, &c.	Government Dockyard Authorities	Commercial Department, Foreign Office, S.W.
" 19	Southampton—Widening Stone Bridge	Water Commissioners	W. J. Taylor, County Surveyor, The Castle, Winchester.
" 19	Belfast—Valves, &c.	Wallasey Urban District Council	L. L. Macassey, Engineer, Waterworks Office, Belfast.
" 19	Egremont, Cheshire—Pier Work	Urban District Council	H. W. Cook, Clerk, Public Offices, Egremont, Cheshire.
" 19	Ilkley—Reservoir	Workhouse Guardians	W. B. Woodhead and Son, 18, Exchange, Bradford.
" 19	Tewkesbury—Weighing Machine, &c.	Urban District Council	H. A. Badham, 22, High-street, Tewkesbury.
" 21	Warminster—Pumping Plant at Sewage Works	London County Council	A. F. Long, Town Engineer, Council Offices, Warminster.
" 20	London, S.E.—Gangways, &c., for River Fire Brigade	Gas Committee	Engineer's Department, County Hall, Spring-gardens, S.W.
" 20	Salford—Lime and Oxide Elevators, &c.	Metropolitan Asylums Board	Gas Engineer, Gas Offices, Bloom-street, Salford.
" 21	London, N.—Kitchen Fittings	Gas Committee	H. and C. Harston, 15, Leadenhall-street, E.C.
" 22	Carnarvon—Purifiers, Engines, &c.	St. Pancras Guardians	H. Wooddall, Queen Anne's-mansions, St. James's Park, W.
" 22	London, N.W.—Fire Escape Staircases	Rural District Council	Browett and Tay or, 9, Warwick-court, Holborn, W.C.
" 26	Alnwick—Reservoir	Urban District Council	H. W. Walton, Clerk, Alnwick.
" 26	Guildford—Reconstructing Bridge	Rural District Council	N. Lailey, 16, Great George-street, Westminster.
" 26	Uganda—Steel Trestle Viaducts	Uganda Railway Committee	Crown Agents for the Colonies, Downing-street, S.W.
" 27	Horbury—Railway, &c.	Lancs. and Yorks. Railway Co.	Engineer, Hunt's Bank, Manchester.
" 29	North Walsham, Norfolk—Sinking Well, &c.	Urban District Council	J. C. Melis, 264, Gresham House, Old Broad-street, E.C.
" 30	Withington—Culvert, &c.	Urban District Council	A. H. Mountain, Surveyor, Town Hall, Withington.
" 30	Shaughai—Tramway Concession	Municipal Council	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
July 31	Rio de Janeiro—Lease of Railways	Brazilian Government	Commercial Department, Foreign Office, S.W.
<b>IRON AND STEEL—</b>			
June 17	Oswestry—Railway Stores	Cambrian Railways Co.	Stores Offices, Cambrian Works, Oswestry.
" 17	Swansea—Colliery Stores, &c.	Graigola Merthyr Co. Limited	Offices of Company, Swansea.
" 17	Matlock—Steel Cable Tramway Grippers	Urban District Council	A. M. Clarke, Surveyor, Town Hall, Matlock.
" 19	Belfast—Cast-iron and Steel Pipes, &c.	Water Commissioners	L. L. Macassey, Engineer, Waterworks Office, Belfast.
" 19	London, W.—Railway Stores	Great Western Railway Co.	Secretary, Paddington Station, London.
" 20	Ossett, Yorks.—Stoves	Gas Company	Manager, Gas Works, Ossett.
" 22	Manchester—Stores	Gas Committee	C. Nickson, Gas Department, Town Hall, Manchester.
" 26	Alnwick—Cast-iron Finger-posts	Rural District Council	H. W. Walton, Clerk, Alnwick.
<b>PAINTING AND PLUMBING—</b>			
June 16	Morpeth—Paint, Oils, Glass, &c.	Northumberland County Asylum	Medical Superintendent, Asylum, Morpeth.
" 17	Mapplewell—Whitewashing, &c.	School Board	W. Pickering, Clerk, Mapplewell.
" 17	Colchester—Painting Cavalry Barracks	War Department	Royal Engineer Office, Colchester.
" 17	Wolverhampton—Painting, &c., Swimming-baths	Corporation	J. W. Bradley, Engineer, Town Hall, Wolverhampton.
" 20	Portsmouth—Painting, &c.	School Board	A. H. Bone, Board's Surveyor, Town Hall, Portsmouth.
" 21	London, W.—Painting, &c., at Infirmary	Falldington Guardians	E. H. Sim, 8, Craig's-court, Charing Cross, S.W.
" 22	Darlington—Painting, &c.	Corporation	Borough Surveyor, Town Hall, Darlington.
" 27	Macclesfield—Painting Two Gasholders	Gas Committee	— Newbigging, Engineer, Gasworks, Macclesfield.
<b>ROADS AND CARTING—</b>			
June 16	Pokesdown—Road Works	Urban District Council	E. W. Ingamell, Surveyor, Cromwell Hall, Pokesdown.
" 19	Tunbridge Wells—Sewering and Making-up Roads	Corporation	Borough Surveyor, Town Hall, Tunbridge Wells.
" 19	Wolverhampton—Forming, &c., Street	Streets Committee	J. W. Bradley, Surveyor, Town Hall, Wolverhampton.
" 19	Erith, Kent—Street Works	Urban District Council	Surveyor to Council, High-street, Erith.
" 19	Hounslow—Materials and Works	Heston and Isleworth Urban D. C.	W. A. Davis, Engineer, Town Hall, Hounslow.
" 19	Market Bosworth—Granite	Rural District Council	W. Thorpe, Surveyor to Council, Nailstone, Nuneaton.
" 20	London—Wood Paving Blocks	Bermondsey Vestry	E. Sumner, Town Hall, Bermondsey.
" 20	Halifax—Kerb and Channel	Rural District Council	T. Gordon, Surveyor, Clifton, Brighouse.
" 20	Tottenham—Laying York Paving	Urban District Council	P. E. Murphy, 712, High-road, Tottenham.
" 21	Braintree, Essex—Granite	Urban District Council	H. H. Nankwell, Surveyor, Waterworks, Braintree.
" 22	Grays Thurrock—Granite Setts, &c.	Urban District Council	A. C. James, Council's Surveyor, 53, High-street, Grays.
" 23	Surbiton—Making-up Roads	Urban District Council	S. Mather, Surveyor's Office, Victoria-road, Surbiton.
" 24	Tewkesbury—Paving Flags	Corporation	W. Ridler, Borough Surveyor, Tewkesbury.
" 24	Withington, Lancs.—Street Works	Urban District Council	A. H. Mountain, Surveyor, Town Hall, Withington.
" 26	Folkestone—Three Roads		H. B. Bradley, 52, Sandgate-road, Folkestone.
" 26	Cheriton, Kent—Three New Roads		Marler and Co., 95A, Gloucester-road, South Kensington.
" 28	Winton, Bournemouth—Granite	Urban District Council	W. T. Streather, Surveyor, Council Offices, Winton.
" 28	North Walsham—Granite	Urban District Council	Surveyor, Council Offices, North Walsham.
" 30	Wolverhampton—Granite Setts	Streets Committee	J. W. Bradley, Surveyor, Town Hall, Wolverhampton.
<b>SANITARY—</b>			
June 16	Carlton, Barnsley—Sewerage Scheme	Rural District Council	W. J. Lomax, 11, Fold-street, Bolton.
" 19	Hounslow—Sewering Roads	Heston and Isleworth Urban D. C.	W. A. Davies, Engineer, Town Hall, Hounslow.
" 20	Grassendale, Lancs.—Sewer	Garstang Urban District Council	F. W. Bowden, Surveyor, Public Offices, Grassendale.
" 20	London, S.W.—Sewer Works	London County Council	Engineer's Department, County Hall, Spring-gardens, S.W.
" 20	Dover—Surface Drains and Sewers	Town Council	H. E. Stilgoe, Engineer, Town Hall, Dover.
" 20	London, N.—Urinals	Tottenham Urban District Council	P. E. Murphy, 712, High-road, Tottenham, N.
" 21	Croydon—Sewering	Rural District Council	R. M. Chart, Surveyor, Union Bank-chambers, Croydon.

COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
June 20	Tendring, Essex—Sewerage Scheme	£21	District Council.
" 27	Edinburgh—County Buildings	£200, £100, £50	Midlothian County Council.
" 30	Wakefield—Central Buildings	£50, £30, £20	Wakefield Industrial Society, Ltd., Bank-street, Wakefield.
" 30	Buckie, Scotland—Bridge over Burn	£26 5s.	Commissioners.
July 3	Harrogate—Kursaal	£150, £100, £75	Corporation.
" 3	Lichfield—Grammar School	£20	H. H. Brown, Clerk to Governors, Lichfield.
" 27	Plumstead—Municipal Buildings and Public Library	£100, £75, £50	Edwin Hughes, Clerk, Vestry Hall, Maxey-road, Plumstead.
Sept. 1	Otley—Isolation Hospital	£30, £15	C. V. Newstead, Clerk, Wharfedale Union Joint Hospital Committee, Union Offices, Boroughgate, Otley.



## Property and Land Sales.

By EDWIN FOX and BOUSFIELD,  
At the AUCTION MART,  
On WEDNESDAY, JUNE 21st,  
At TWO o'clock, in one Lot.

**CITY OF LONDON.**—Highly Important FREEHOLD ESTATE, comprising the premises so well-known for years past as Boord's Distillery (which business is being removed to premises in Tooley-street), advantageously placed in Bartholomew-close, to which it has a commanding return frontage, and covers the extensive superficial area of over 7,000ft., with the substantial erections thereon, which, however, do not thoroughly utilise the land, occupying as it does a position which could be devoted to more profitable purposes, the district having now become a centre for warehouses, old buildings having to give place to modern commercial erections. The existing tenancy allows time for maturing plans without loss of income. It is let on a repairing lease to Messrs. Boord and Sons, for a term expiring in 1901, at a rent of £800 per annum, lessees paying all outgoings whatsoever.

Particulars at the Mart; at Messrs. EDWIN FOX and BOUSFIELD's Office, 99, Gresham-street, Bank, E.C.; and of the

Vendors' Solicitors, Messrs.  
ROY and CARTWRIGHT,  
No. 53, Coleman-street, E.C.

By EDWIN FOX and BOUSFIELD,  
At the AUCTION MART,

On WEDNESDAY, JUNE 21st, at TWO o'clock.

**ENFIELD.**—Close to the centre of the town and station on the G.E. Railway, valuable FREEHOLD BUILDING ESTATE of about six acres, free from tithe and land tax, with approach to the Southbury-road and Fotheringham-road, and presenting much scope for profitable building operations, which have been so successful in conducting to make Enfield one of the most popular places for a medium class of house within a like distance of the City. The facility of transit which the G.E. Railway affords, contrasting as it does so favourably with that of other lines, tends to enhance the eligibility of building land in this district.

Particulars at the Mart; at Messrs. EDWIN FOX and BOUSFIELD's Office, 99, Gresham-street, Bank, E.C.; and of the

Vendor's Solicitors, Messrs.  
BARFIELD and BARFIELD,  
72, Finsbury-pavement, E.C.

SALE DAYS for the Year 1899,  
Messrs.

**FAREBROTHER, ELLIS, EGERTON, BREACH, GALSWORTHY, and CO.** beg to announce that the undermentioned dates have been fixed for their AUCTIONS of FREEHOLD, Copyhold, and Leasehold ESTATES, Reversions, Shares, Life Interests, &c., at the AUCTION MART, Tokenhouse-yard, E.C.

Other appointments for intermediate Sales will also be arranged.

Thursday, June 22	Thursday, Sept. 21
Thursday, June 29	Thursday, Oct. 12
Thursday, July 6	Thursday, Oct. 26
Thursday, July 13	Thursday, Nov. 16
Thursday, July 20	Thursday, Nov. 23
Thursday, July 27	Thursday, Dec. 7
Thursday, Aug. 3	Thursday, Dec. 14
Thursday, Aug. 10	

Messrs. FAREBROTHER, ELLIS, and CO. publish in the advertisement columns of "The Times," "Standard," and "Morning Post," every Saturday a list of their forthcoming Sales by Auction. They also issue on the first of every month a schedule of properties to be let or sold, comprising landed and residential estates, farms, freehold and leasehold houses, City offices and warehouses, ground-rents, and investments generally, which will be forwarded free of charge on application.—No. 29, Fleet-street, Temple Bar, and 18, Old Broad-street, E.C.

To Architects, Builders, and Others.—CITY of LONDON (on the borders of).—An unusually extensive Building Site, occupying an area of nearly an acre.—Messrs.

**FAREBROTHER, ELLIS, EGERTON, BREACH, GALSWORTHY, and CO.** will offer for SALE by AUCTION, at the Mart, Tokenhouse-yard, E.C., on THURSDAY, JUNE 22nd, 1899, at TWO o'clock precisely (unless previously disposed of by private contract), the valuable FREEHOLD BUILDING SITE, situated in Hearn-street, Finsbury, contiguous to the L. and N. W. Railway Goods Depot, having an area of upwards of 40,000 square feet, adapted for the erection of warehouses or manufacturing premises, or for the creation of ground rents.

Particulars, with plan and conditions of sale, may be obtained of Messrs. TORR, GRIBBLE, ODDIE, and SINCLAIR, Solicitors, 33, Bedford-row, W.C.; at the Mart; and of Messrs. FAREBROTHER, ELLIS, and CO., 29, Fleet-street, Temple Bar, and 18, Old Broad-street, E.C.

By order of the Trustees of the St. Clement Danes Holborn Estate Charity, High Holborn.—Letting on Building Leases of Valuable Sites for Shops, Trade Premises, and Dwellings.

**THURGOOD and MARTIN** have received instructions to LET by AUCTION, on building Leases, on WEDNESDAY, JUNE 28th, 1899, at TWO o'clock precisely, in Three lots, Nos. 101 to 104, High Holborn, and neighbouring PLOTS of LAND on the east and west sides of Deau-street, well situated in and near the main thoroughfare from the City and West End, on one of the busiest and widest parts, having areas varying from 7,374ft. to 3,121ft. respectively. Very valuable sites for important shops, warehouses, and dwellings.

Particulars and conditions of letting, with plans, may be had of Messrs. J. C. and W. W. ISAACSON, Solicitors, 11, New-inn, Strand, W.C.; H. C. BOYES, Esq., Ormond House, Great Trinity-lane, E.C., Architect and Surveyor to the Trustees; at the place of sale; and of the AUCTIONEERS, 27, Chancery-lane, W.C.

LOWER TOOTING.—Althorpe Lodge Freehold Building Estate.

**MESSRS. FIELD and SONS** will SELL by AUCTION, at the Mart, on THURSDAY, JUNE 22nd, at TWO, the FREEHOLD BUILDING ESTATE, known as The Althorpe Lodge Estate, at the junction of high roads to Merton, Wimbledon, Wandsworth, and Tooting, within ten minutes' walk of Earlsfield Station, and containing an area of nearly five acres, having a frontage to Garratt-lane of about 348ft., and frontage also to Franchcourt-road and proposed roads sanctioned by the L.C.C., Burnester-road and Alden-road. Also Five contiguous Freehold Cottages, Nos. 8 and 12, Edward's-terrace, Garratt lane.

Particulars and conditions of sale, with plan, may be had of F. W. FIELD, Esq., Solicitor, 52, Chancery-lane, W.C.; of Messrs. COOPER and BAKER, Solicitors, 6 and 7, Portland-street, W.; and of the AUCTIONEERS, 54, Borough High-street, S.E., and 52, Chancery-lane, W.C.

**TO LAND SOCIETIES, BUILDERS, and SPECULATORS.**—LEATHERHEAD, Surrey.—Valuable FREEHOLD BUILDING ESTATE of about 10 acres, occupying an elevated site in close proximity to the town and its two railway stations, to be SOLD by AUCTION by Messrs. WHITE and SONS, at the Swan Hotel, Leatherhead, on FRIDAY, JUNE 23rd, 1899, at Five o'clock, in One Lot. The property is ripe for development, and there is a valuable vein of gravel on it available for road making.

For particulars and conditions of sale and plans attached, apply to Messrs. WHITE and SON, Auctioneers, Land Agents, and Valuers; or Messrs. HART, SCARES, and HODGES, Solicitors, both at Dorking and Leatherhead.

**ANSELL and MALLOWS**, Architectural Draughtsmen and Quantity Surveyors, 21, Buckingham-street, Strand, W.C.

**R. I. B. A. EXAMS. PREPARATION.**—personally or by correspondence, in three, six, nine, or twelve months' courses. Architectural Lending Library. Special three months' finishing courses.—For full particulars apply to Messrs. HOWGATE and BOND, Associates R.I.B.A., Perchard House, 70, Gower-street, W.C. (close to the British Museum).

**ARCHITECTURAL Institute, Society of** Architects, and Civil Service Technical Examinations. Preparation by correspondence, personally, or in residence. Seventeen first places.—MIDDLETON and CARDEN, 19, Craven-st., W.C. 1

**MASON'S CHISEL, STEEL,**  $\frac{1}{2}$  to  $1\frac{1}{8}$  octagon, 12s. to 16s. per cwt.; Chisels, 6d. lb.; Best Cast Steel for Lettering Tools, &c., from  $\frac{1}{4}$ in.,  $\frac{1}{2}$ d. lb.—E. DEALEY, Moore-street, Sheffield. 7

## APPOINTMENTS VACANT.

The charge for Advertisements under this heading is 1s. 6d. per insertion not exceeding four lines, and 6d. per line afterwards, prepaid. Three insertions may be had for the price of two.

**YOUTH WANTED** in Builder's office with some knowledge of drawing. Apply, stating full particulars and salary to, "Thirty-six," No. 17, Cornhill. 1

**WANTED**, at a small Terra-cotta Works near London, a thoroughly experienced KILN-SETTER and BURNER (to fill up time with pressing). Abstinence preferred.—Apply, stating terms, to "Kiln," Box, 1074 "BUILDERS' JOURNAL" Office. 1

## APPOINTMENTS WANTED.

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**YOUNG ARCHITECT, A.R.I.B.A.,** ASSISTS in the PREPARATION of DRAWINGS, TRACINGS, &c., at his own Office.  
G. SCOREE, 28, Newman-street, W.

**ARCHITECTS and QUANTITY SURVEYORS**—Temporary ASSISTANCE rendered in taking-off, measuring, &c., either by commission or the hour; reference given.—"H. R. A.," 30, Fontarabia-road, Clapham Common. 2

**QUANTITIES** prepared, specifications written, works measured, and variations adjusted by reliable London Surveyor. Over twenty years' experience. Special terms by arrangement.—"Surveyor," office of the BUILDERS' JOURNAL. 29

**ADVERTISER** requires EVENING WORK; drawings in pencil rapidly and neatly finished; rough sketches worked out and details prepared.—Apply "W. T.," 232, Dulwich Rise, S.E. 1

**CLERK of WORKS** desires RE-ENGAGEMENT (age 26); varied experience, alterations, sanitary work, working and detail drawings, specifications, and quantities; moderate salary; highest testimonials.—Box 1034, BUILDERS' JOURNAL Office. 2

**JUNIOR ASSISTANT**, (21) desires engagement; good tracer, neat draughtsman; four years' experience; knowledge construction.—"C.," 25, Crescent-gardens, Bath. 1

TELEGRAMS: LONDON TELEPHONE  
Dividore London." No. 1011, Holborn

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Adjoining Holborn Town Hall.)

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ARCHITECTURAL DRAUGHTSMEN  
AND QUANTITY SURVEYORS.  
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DESIGNS, WORKING AND  
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EVERY WEDNESDAY.

## The Builders' Journal

AND

## Architectural Record.

PRICE . . . . ONE PENNY.

The Largest Circulation of any Architectural Building Journal in the Kingdom.

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## Situations Wanted or Vacant.

Four Lines or under (about 30 words) . . . . . 1 6  
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Three insertions for the price of Two.

Advertisements of this class must reach the Offices not later than 6 p.m. on Monday.

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NORFOLK STREET,  
STRAND, W.C.



# BLIZZARD IN AMERICA.

## COPY OF TESTIMONIAL. (Unsolicited).

FRANK MILES DAY AND BROTHER  
ARCHITECTS  
985 CHESTNUT STREET, PHILADA.  
F. M. DAY H. KENT DAY

March 1, 1899.

Mr. George Wragge,  
Salford,  
Manchester, England.

Dear Sir:

Noting your full page advertisement in the "Specification" this morning reminds us that we have been intending for some time to write to you to tell you how admirably your casements in Mr. Newbold's house behaved during the recent blizzard. The storm was one of unprecedented severity, the snow being thirty inches on a level and it was accompanied by winds of great velocity. The snow being very fine and dry, found its way in generally through the slightest cranny. The blizzard was promptly followed by a rapid thaw that set everything afloat and caused quite serious damage through leaks. The conditions were probably the most trying that we remember during the course of our practice. Your casement frames perfectly resisted every force of that storm and the subsequent thaw. No snow whatever entered Mr. Newbold's house either through the doors or windows, nor did any water get in when the thaw came.

This, we think, shows not only the excellence of the goods of your manufacture but the fact that they were well installed by the men under our direction. We are glad to be able to write you this, not only on our own account, but because the Owner of the house particularly wished us to express to you his satisfaction with your work.

Yours very truly,

*Frank Miles Day & Bro.*

The above *UNSOLICITED* Testimonial refers to a very important order for upwards of 250 BRONZE CASEMENTS supplied to Mr. Newbold's Mansion, Philada. U.S.A. The sections used were Nos. 20, 22 and 24, illustrated in our NEW CATALOGUE, pages Nos. 10, 14 and 18 respectively.

# GEORGE WRAGGE,

WARDRY METAL WORKS AND THE CRAFTS, 152, 154, & 156  
CHAPEL STREET, SALFORD, MANCHESTER.

Branches at LONDON, 22, Surrey Street, Strand, W.C.  
DUBLIN, 36, Georges Quay.  
BELFAST, 124, Donegal Street.

Telegrams :  
"Casements, Manchester."  
Telephone No. 2206.

N.B. "THE CRAFTS," adjoining the present works, I have recently taken for the purpose of producing various artistic work but principally for STAINED GLASS AND LEADED WORK, under the management of Mr. JNO. E. C. CARR.

March 15th, 1899.





JUNE 21, 1899.

No. CCXXVIII.

## An Architectural Causerie.

### The Art School at Westminster.

ART is studied at a public art school from very different standpoints and by very different classes of people, but the line between the classes is at once easily drawn, if the school provides tuition and models by night as well as by day. The day students, the majority of whom are women, study art for art's sake; that is to say, they wish to be what they are pleased to call artists (ignoring the significance of the term!), and the next best thing to being an artist is to be a student of art! It is with such feelings that they clothe themselves with the romance that surrounds the palette and paint brush; make studies from the nude and the costumed model, and work them up into sketches, which they display at the sketching club exhibition every month. If the visitor were to happen on an exhibition of sketches at the monthly criticism, he would find it difficult to form a criterion of the school work. It ought to be a fair means of judging, but the ordinary student work far surpasses the results as shown in their sketches. Their life studies are very good and vigorous, not so their sketches. There is occasionally a nice landscape from one of the men, a man who affects cobalt tones to a pitch of dullness; and there is occasionally some fair figure work or composition in designs for posters or subject sketches, but the average of attainment is low—report says that the president has more than once refused to look at them—and their designs for objects of furniture and so forth are beneath contempt. But, taking it all round, the women draw very well, and no school has a better record than Westminster. The male student at the day sittings have high ideals; portraits at the Royal Academy are their ambitions; but they are not really ambitious; art life is taken too easily by them; they are not punctual; their hearts do not seem to be in their work; and we know—for has not Mozart told us about his art?—that the hand and the head are useless without the heart. The room, one of the old ones, in which they paint, is not an ideal place; perhaps their surroundings are depressing; but Art has flourished under worse circumstances than theirs. Mr. Londar, the headmaster, teaches as well as he paints; and no more praise need be given to the painter of that picture of 1897 called "Butterflies" than that. And the master of modelling has also won laurels on more occasions than one with his chisel. The other class of student is the night

student. He works at the school for professional reasons. These students are men who earn their livelihood by professional art during the day and improve upon their possibilities of future success by night. They are painters of glass, designers of wall papers and fabrics, architects, architects' assistants, and such like. They are people to be admired; they work in their offices from 9 a.m. to 6 p.m. every day, and snatch two hours, from 7 p.m. to 9 p.m. in the evenings. They are hard workers, enthusiasts, and, for the most part, good draughtsmen. They generally begin at the lowest rung, and climb the ladder till they reach the life class: geometrical drawing, casts of fruit, casts of architectural detail, casts of classic heads, then the Venus of Milo, and the last the life class. These are the rungs of

latter largely predominates. So many people labour daily and well to no purpose. Their work gets worse. They have missed their vocation, and yet they struggle on, disfiguring more and more the subtleties of the antique. Nothing will alter their purpose, not even the advice of the head master. There are few of these misguided enthusiasts at Westminster. It is a school that is improving, and a school that should be encouraged, and may those in authority remain there long to maintain the standard to which they have energetically raised it. E. B. H.

### Wanted: A Central Shelter for London's Exhibitions.

ONE feature of London life is the endless succession of exhibitions, big and little—a natural outcome of our position as the metropolis of the world. But it is



ST. MARY MAGDALEN'S CHAPEL, RIPON. SKETCHED BY E. BECKITT LAMB.

Art toiled up by the students at the night classes. Their aspirations are mostly professional, except for the occasional trifter who centres all his ambitions on a post on the staff of a comic illustrated paper. These students are the most industrious of all. One of them does excellent copper-plate etching, and his name is in the Academy list this year; another designs papers for the best wall paper manufacturers. Another is a stained glass artist, and they live by art far more than the day students. The number of women is far above the number of men. They are too fond of making tea to be real hard workers. Their tea club represents an original ready-money-pay-when-you-like system which must surely be the product of the brain of a real artist. All schools have their humorous and their pathetic side. The

equally characteristic of our happy-go-lucky ways that no fitting provision has been made for the suitable shelter of such shows, which vary from an exhibition of missionary relics to a glorified display of all that pertains to the grand art of gastronomy. True, we have the Royal Agricultural Hall—gaunt, draughty, and uncompromisingly hideous—in far off, erstwhile "happy" Islington. People go there when they are attracted by the dual allurements of satisfying charity and a love for brilliant uniforms and deeds of daring. Fashion will not mind a tiresome pilgrimage to the same spot when devotion to horseflesh or to the canine race is in question. Of course, John Barleycorn and his cousins flock to the hall to take part in the October drink saturnalia. The farming and trading interests will put up with the incon-



veniences of Islington when fat bees, golden butter, or commercial shows are on. But for other things Islington is too far away from the haunts of rational beings, and the hall too incorrigibly unadaptable to be of much use. Olympia also is too far away, has a deplorable reputation for flatness of results, and besides, has long been given over to wild beasts. The inertia of South Kensington hangs over the Imperial Institute, which, moreover, is badly designed for exhibitions (and for most other things). At the lately held Universal Cookery and Food Exhibition, the Northern Gallery of the Institute proved far too narrow for comfort or serious study of the great artistic efforts of chefs and the wondrous audacity of gastronomic chemists. Visitors were crushed and confined, deafened by the fitful blare of the band of the Horse Guards (Blue), and bewildered by the weird gesticulations of white-capped chefs and chefesses as they demonstrated the mysteries of *ragout* manufacture, or the trick of pancake tossing. Niagara Hall is delightful for some purposes; but, it has its limits. After that, what have we left? Very little. A certain exhibition of medical appliances was once held in Drury Lane Theatre. How could one ponder over the grandeur of bone-saws, the charms of antiseptic silk for skin stitching, or the potentialities of mustard plasters with the indecorous attributes of Thalia and Melpomene on all sides? What is really very much wanted is a specially-designed building, in a central position, easily get-at-able from all parts of London. Now, if we are to have a broad thoroughfare uniting Holborn and the Strand, it will be necessary to adorn it with sufficiently imposing edifices, and we would suggest that one of these new structures should take the form of Exhibition Buildings. The proposed structure would contain a large exhibition room, which could be mapped out as each case may render most desirable. A Promenade Refreshment Gallery would give visitors a good bird's-eye view of the scene, and place the hungry where they could enjoy themselves undisturbed. The dining-room and café lounge would be covered over with glass and decorated with palms. In addition to the main room there should be an annexe and a circular hall and gallery. These could be taken into the exhibition if more space was required. For lectures and demonstrations a room quite out of the hurley-burley should be arranged. Provision should also be made for outdoor exhibits, such as savage camps, wild animals, and *al fresco* catering. In such a building three separate exhibitions and a series of lectures might be going on contemporaneously without interfering with each other. Or the whole establishment could be given over to one show. By the arrangement of communications and provision of offices the space available could easily be adapted to almost any size or class of exhibition, and this is precisely what London stands so greatly in need of to-day. Whether the London County Council ought to provide such a building, or whether the venture should be left to private enterprise, is a question that need not be discussed here. For the present our aim is to call attention to a want, and to point out how it can be supplied when we are given the much talked of avenue from Holborn to the Strand.

G. C. R.

## OUR COMPETITION.

WE are pleased to be able to announce that Mr. Edward S. Prior has consented to act as Assessor in the Competition recently held for Designs for a Country House. We hope to publish the awards in an early issue.

## On Reflection.

### Registration of Architects.

THE most notable feature of the correspondence on this subject that has been appearing in our columns during the past few weeks is the practical unanimity of the views expressed. By different roads our correspondents nearly all arrive at the conclusion that registration is a desirable thing. The opponents of the proposed reform seem—with one or two exceptions—to be too half-hearted or indifferent to take the trouble to combat the views expressed by our correspondents. That being so, it might be supposed that registration may be expected to become an accomplished fact within a very short time. But the R.I.B.A. blocks the way. Why the Institute as a body should oppose a reform of which many, perhaps a majority, of its individual members approve it would be hard to say. One of our correspondents made the rather cynical suggestion that the reason is to be found in the fact that this particular reform is strongly advocated by another professional society. We should be sorry to believe that the representative body of British architects could be actuated by so paltry a motive. But whatever the reason,—the fact remains, and until the Institute supports the proposed reform there is little chance, we fear, of its being carried out. It was suggested by Mr. Aston Webb at the dinner of the Architectural Association a few weeks ago, that the Institute is not the immovable ultra-conservative body some suppose it to be, but that it is quite prepared to move with the times. In this matter of registration the Institute has an excellent opportunity of showing its progressive tendencies—if they exist. Without going quite the length of those of our correspondents who maintain that the arguments for the registration of medical men and chemists apply with equal force to architects, we are nevertheless fully convinced that registration is a reform demanded in the interests both of the profession and of the public.

### Some Objections Considered.

THE proposal for registration is sometimes opposed from diametrically opposite standpoints. On the one hand there is the so-called "art architect" who objects to having to pass technical examinations; his business is to make beautiful designs, not to supervise the laying of drains. On the other hand there is the "practical man" whose point of view was explained with much force in our columns last week; his knowledge, gained in the actual carrying out of building operations, is—he maintains—superior to the merely theoretical knowledge of the young architect who, after three years' apprenticeship, may pass his qualifying examination. We cannot see that such proposals as those embodied in the Bill of the Society of Architects would injure either of these classes. The artistic designer and the practical builder would not be less needed, nor, it may be hoped, less appreciated if they ceased to call themselves architects. The "architect," according to the derivation of the word, is the "master builder," and we cannot see why the man who devotes himself exclusively to decorative work should not call himself an artist or designer rather than an architect. The man who can design beautiful windows or wall papers or book covers, but knows little and cares less about building materials and sanitary details, may fill a high and useful place, but it only leads to confusion, and serves no useful purpose for

him to call himself an architect. The builder, too, will not lose, under a system of registration, any work that is legitimately his. He may still carry out buildings for himself or for a client without the intervention of an architect. But he will not be allowed to call himself an architect, or to recover architect's fees. The client who employs him will do so with his eyes open; he will know he is employing a builder not an architect; there will be no false pretences in the matter, and that is a gain all round. The occasional efficiency of the unqualified man is no argument against a qualifying test. The chemist or clinical assistant may correctly diagnose your disease, but he is not allowed to describe himself as a physician or to charge for his advice. The able-bodied seaman may acquire much practical skill in seamanship and navigation, but the only road to a captain's berth is by way of the Board of Trade examinations. The honest builder has nothing to fear from the registration of architects. The great advantages of the measure would be that it would protect the public against quacks, and raise the status of the architectural profession, provided always that care is taken to make the qualifying examination a real test of competency.

### The Architect's Responsibility.

A QUESTION of considerable importance to architects was raised by an action recently brought before the Edinburgh Court of Session. An Edinburgh architect of good standing was employed by a lady client to build her a suburban villa. According to the evidence, he took a good deal of trouble on his client's behalf, but in the important matter of the supervision of the work in progress he seems to have taken a somewhat lax view of his responsibilities. As many architects have done before, he trusted to the contractor to carry out his instructions satisfactorily, and contented himself with an occasional visit once a week or once a fortnight. This is a plan which may answer very well when the contractor is thoroughly reliable, and carefully supervises the work of his men. In this particular case, however, it turned out disastrously. Instead of making the "bottoming" for scullery and coal cellar as specified—that is say, of broken stone covered with small stones and "dry stone filling"—the builders used, at any rate, for the uppermost 3in. or 4in., any miscellaneous rubbish that came to hand, shavings, pieces of wood, sacking, plaster, and so on. The result of this scamping was that dry rot developed on the pieces of wood that formed part of the bottoming, and quickly spread to the doorposts embedded in it, and thence to other parts of the woodwork of the house. As the client had been obliged to spend about £30 to eradicate the evil, and as it seemed impossible to decide whether the mason or the carpenter was most to blame, she sued the architect for damages for breach of contract. Lord Kyllachy gave judgment for the plaintiff, and assessed the damages at £40 with costs, on the ground that the architect had not exercised reasonable supervision over the work. On the face of it there might seem to be a certain amount of injustice in holding the architect responsible for the delinquencies of the contractor's workmen. But, seeing that his fees are understood to cover payment for supervising the erection of the building, it is only reasonable to demand that that supervision shall be real and effective, and most people will agree, we think, that Lord Kyllachy's decision is as equitable as it is no doubt good in law. It may be safe at times to leave things to the contractor, but the architect must accept the responsibility if he takes the fee. Clients cannot be expected to pay for merely nominal services.



## ROUND ABOUT RIPON AND YORK.\*

BY JAMES MCKISSACK.

THE apprentice to Architecture has to do a lot of hard work to enable him to occupy the responsible and important position of architect. Among other things, he has to do a lot of measuring and sketching of old and good work. In Glasgow district he is to a

After breakfast on the day following our arrival at Ripon we had a walk round the town. We found nothing of any interest architecturally here, the old domestic work having all been taken down to make room for the more modern buildings which are very commonplace. After a look round we made our way to the cathedral or minster as the towns folk delight to call it. It is situated in Kirkgate.

Our first view of the cathedral was the west front of which I will speak later. The west doors being closed we took a look round it.

Walker de Gray (1250-60) whose beautiful tomb is in York Minster. It consists of a central compartment with three doorways and two tiers of windows rising to a gable between the western towers.

The façade is severely simple as a composition, and its somewhat monotonous effect is scarcely relieved by a sparing use of the dog-tooth ornament. The parapet and pinnacles of the towers were added in 1797, the leaded spires having been previously removed lest, like the central spire, they should be struck by lightning. Entering the nave, we sought



GODDRAMGATE, YORK. DRAWN BY F. L. GRIGGS.

great extent limited for old work; he must work at the cathedral, which is undoubtedly worth study, or else travel some distance to get into some part of the country that is richer in old architectural work. It was with this object in view that the Glasgow and West of Scotland Technical College Architectural Classes started a series of visits to different buildings of architectural interest. The following notes relate to a holiday in Yorkshire, spent last summer by a party of four students. We proposed taking Ripon as the centre for the first week and York for the next.

\* A paper read before the Glasgow Architectural Association.

Going along the north side and round to the south-east we came upon what is undoubtedly the best general view of the cathedral; the river in the foreground is the Skell, a tributary of the Ure! We see the full length though the lower part is hidden. I think the view is all the better for not being uninterrupted, because the presence of the humble roofs in the foreground serves to increase the apparent height of the naves, transept, and choir, and to relieve the squatness now given to the building by its spireless central and western towers. Coming round to the west we found the door open, but before going in we had a look at the west front. It is early English and assigned to Bishop

out the vergers, and presented our permits to sketch, measure, and photograph. We then separated, and started to work at once. The windows in south aisle of nave are of Perpendicular work, earlier in character than those of the north aisle. At the south-east angle of the south transept there are the Chapter House and Lady loft. The Chapter House on the ground floor is of Norman work, and the Lady loft above is early Perpendicular in style. The Lady loft is now used as the cathedral library. The south transept is also perpendicular. Then the east end of the Chapter House and Lady loft is noticeable for the square end of the Lady loft sitting on the round apsidal end of the Chapter House. The





SKELTON CHURCH, FROM THE SOUTH-EAST. DRAWN BY JOHN RALSTON.

east end is early decorated, and the east window a very fair specimen of geometrical tracery. The stalls are very good, being of fifteenth century work; the finials of the sedilia in the choir appear somewhat heavy.

Another of our visits was to the Lepers' Hospital, one of the few remains of old work in Ripon. The next day we proposed to go to Fountains Abbey. As the Abbey is situated four miles out of Ripon we cycled there, so as to have as much time there as possible. It is on the Marquis of Ripon's estate, and before reaching it we had to go through Studley Royal, which also belongs to the Marquis. Going out of the direct road to the abbey we went to see the new church, which was erected in 1871 by the Marchioness of Ripon. The architect was the late Wm. Burgess. I must confess that I was extremely disappointed with this church. The building seems to lack proportion, the tower, which is over 200ft. high being, I think, too lofty for the small church. The chancel is overcrowded with windows which do not help the appearance generally. The details are very good—in fact, I think the most satisfactory feature of the building. The interior is most ornate; in fact, too much so. We now found our way back to the main avenue to get to the lodge gates. Here, on payment of one shilling, we had the free run of the abbey without the bother of guides. The distance from the lodge to the abbey is one mile, which we had to walk, as cycling was not allowed. The avenue is along the banks of the Skell. The grounds are laid out with ponds, statues, and temples—an arrangement which does not, I think, help the natural beauties of the place. We soon got our first view of the abbey, which is called "the surprise view." This view seems to me to be over-praised, as the river at this point is more like a canal than anything else, and the east end of the abbey is seen, which does not group so well with the tower.

As we get nearer the view is more pleasing. One cannot help wondering on looking on this immense ruin what it must have been like in the past. The abbey from the south-east shows the east end and tower beyond. The chapel of the nine altars is placed at the east end, similar to the one at Durham Cathedral. The tower is not over the crossing, but is placed to the north side of the north transept. The tower is, I think, the most interesting feature in Fountains. It is 168ft. high, and was only finished a few years before the dissolution of the monasteries. Then the tower from the south shows admirably the grouping with the monastic buildings in the foreground. The view from the south-west is also very pleasing, showing the fine grouping of the tower with the abbey. The most striking

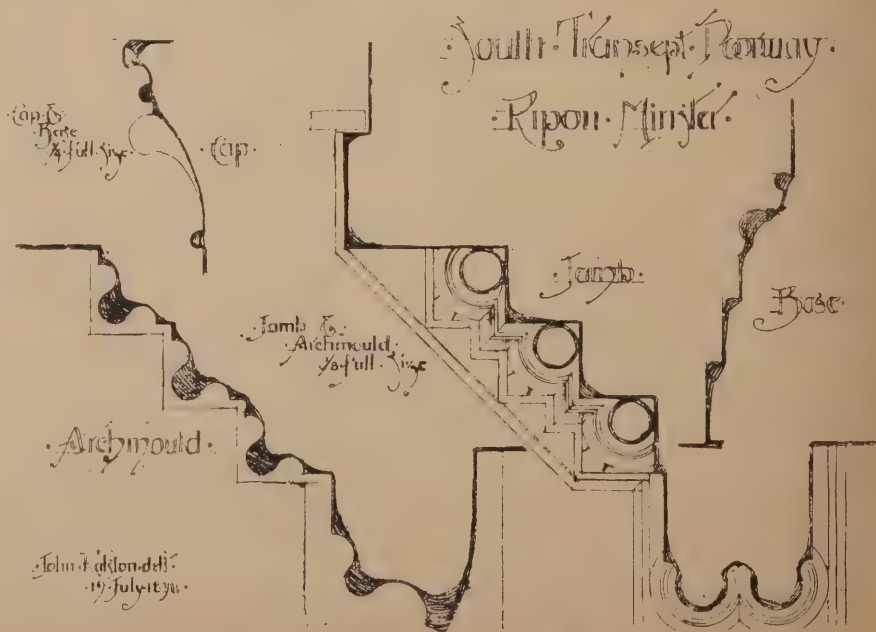
feature of the cloister garth is the quartette of Norman arches on the east side, connecting it with the chapter house. The Galilee porch is situated at the west end. Three arches of an open arcade alone remain of this interesting example. This porch was used for burials and also marked the limits beyond which females were not allowed to transgress. The chapel of the nine altars is considered by some to be the gem of the abbey. It is oblong in form and extends from north to south, and forms the east end of the church. It is like the similar example at Durham of earlier date. The great cloister or cellarium is 300ft. long by 40ft. wide, and is divided into two corridors by a row of nineteen columns. These columns have no capitals.

After having exhausted the abbey, and I think we did it fairly well, we went to have a look at Fountains Hall. It was built out of the ruins of the abbot's house or infirmary. We then returned to Ripon, well satisfied with our day's work and the things we saw. On Sunday we rested, and on Monday went for a circular tour. We left Ripon in the morning, and proceeded to Ripley. The church here is small and fairly interesting; the tower is rather quaint, and out of the usual run of village church towers. The castle is the seat of the Ingilby family, and was built in the reign of Mary. Remounting our machines, we now proceeded to Harrogate. As there was nothing of interest there we pushed on to

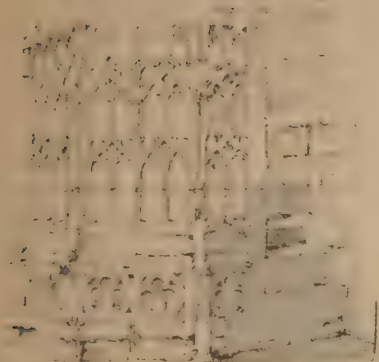
Knarborough. On the way we passed some very good modern houses. The situation of Knarborough is extremely picturesque, and in this respect, as well as its comparatively old-world appearance, the town stands out in bold contrast to Harrogate. The church is fairly large and interesting; the tower especially so, with its slender wooden spire. All the periods of architecture from Early English to Perpendicular are shown. The castle stands high, and overlooks a picturesque bend of the River Nidd. It owes its ruinous condition to a six weeks' siege which it endured from the Roundheads, in 1644. After spending about three hours here we continued our route, and arrived at Aldborough.

This is an old Roman town, and remains are to be seen all over the village. The church is fairly interesting. There is an old half-timbered house with the old village cross in front. The cross is early English, of clustered columns braced together. We then proceeded to Boroughbridge. This is an old-world place which saw its best days when the coaches went through it. The church is modern and extremely good in the detail. Here we reached our last stopping place for the day. On the following day we stayed in Ripon and did more work at the Minster. On Wednesday we proposed going to Jervaulx Abbey. On none of our previous rides had the scenery been particularly interesting, but this day we got a surprise. West Tanfield, our first stopping-place on the way, being one of the prettiest villages I have ever seen. The situation is charming. It stands on the left bank of the river Ure, with its little church tower and castle standing above the village and river. The colour in this view is simply grand. The church is extremely interesting. It has a squint close to the chancel arch. On the left of the church stands a tower which is interesting as the remains of Marmion Castle—the home of Sir Walter Scott's "Marmion." Above the gateway there is a beautiful little oriel. The tower is of Perpendicular work. Proceeding on our way we came to Masham—a very picturesque town with a large market-place, at the south-east corner of which stands the church. The most striking external feature of the church is the tower, Norman in its lower, octagonal in its upper part, and surmounted by an admirably proportioned spire.

Five miles beyond Masham we came to Jervaulx Abbey. There was not much remaining here, and if this had been the sole object of our day's visit, it would have been a day lost. Lovers of Scott need not be reminded that the jovial Prior Aylmer (mentioned in "Ivanhoe") hailed from Jervaulx. Having still some time left we continued on to Middleham, which is another picturesque town that is well worth being visited by artists. It has a huge old castle of more historic than archi-







OLD PULPIT, NORTH TRANSEPT, RIPON  
MINSTER. DRAWN BY JOHN RALSTON.

tectural interests. We then returned to Ripon by the same route. During the evening we were shown the gold plate belonging to the cathedral. Most of it belongs to Charles II.'s reign, and is very good.

On the following day, Thursday, our destination was Bolton Abbey. It was almost twelve o'clock before we got started and proceeded by Ripley till we met the Skipton Road. Until this day we had not met a hilly road and had begun to think there were no hills in England. We soon found out our mistake as the road to Bolton Abbey is something awful, at some parts being over 1000ft. above sea level. We took four hours to go twenty-six miles against a strong wind. We arrived at Bolton Abbey about 3.30. The situation of the abbey is simply grand and quite made up for the long ride. The river Wharfe runs round it, and it is a most picturesque stream. The grouping of the abbey is disappointing, the loss of the west tower spoiling the effect completely. The nave was restored by the late G. E. Street in 1864.

The west front is of very good Perpendicular work in splendid condition. The west door to the north aisle is of very good early English work. The arcading in the choir is noticeable for the continuous panel of waving tracing over the Norman arches. The river Wharfe is crossed by fifty-six stepping stones, probably the longest causeway of this kind in the kingdom. Owing to our late arrival at the abbey we did not get quite as much work done as we would have liked. We intended coming back by Otley and Ilkley, but had not the time to spare as this would have added four miles to our journey.

The next day we intended to go to Rievaulx Abbey. The morning was fine when we set out. The way lies through Thirsk, and here we stopped for about two hours to see its famous church. It is Perpendicular throughout and was restored by the late G. E. Street in 1874. The tower is supported by staged buttresses, and is surmounted, as also are the clear-story and aisles, by fine pinnacles. All round on tower, clear-story and aisles are prominent grotesque gargoyles—beast, bird, and humanity mixed in the most hybrid fashion. The roof is of Irish bog oak, and with its fine bosses and shield bearing angels is one of the features of the church. A new stone font stands under the old canopy. There is some fine old glass here. Our way was now through the pretty little village of Sutton, and over the Hambleton Hills to Rievaulx. After leaving Sutton the roads began to be hilly, and one and a half miles out there is a rise of 560ft. in one mile. The view from the top is very fine, and looks over the Vale of York. Arriving at the top we found the roads very bad—little better than a sheep's track. The situation of the abbey is extremely beautiful;

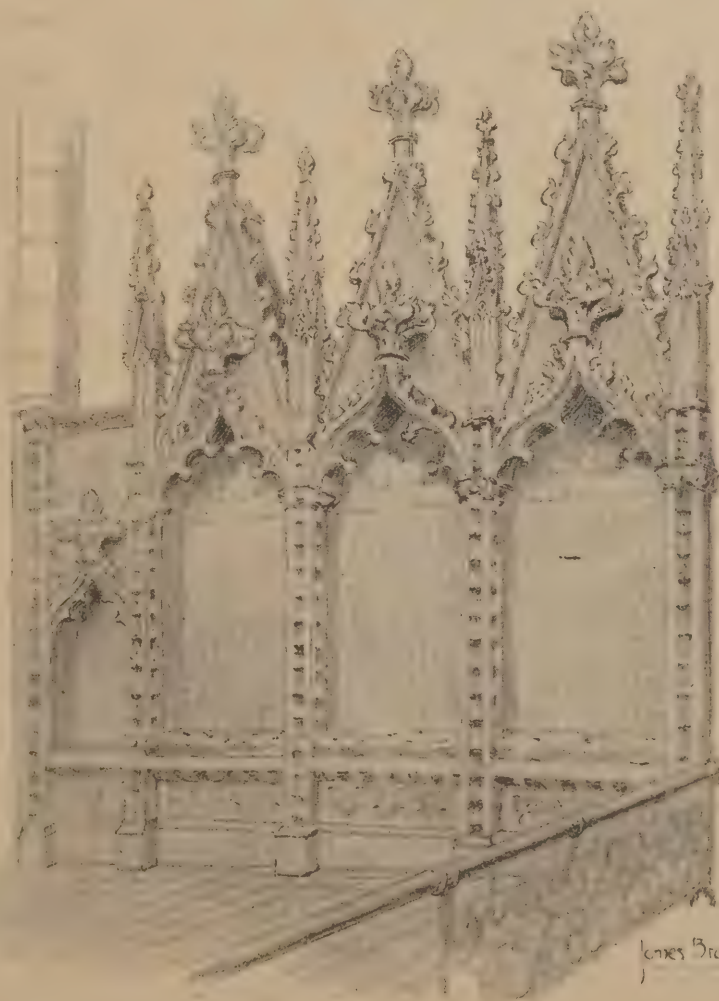
in fact, I cannot conceive the old Cistercian Fathers choosing a more Heavenly spot. The thought evoked by the first sight of Fountains was the glory of its past—with Rievaulx it was the beauty of its present. The remains consist of the choir, roofless but otherwise in excellent preservation, the transept, the refectory, and fragments of domestic buildings. The side of the nave is now marked by shapeless mounds which cover its ruins, and the pits here and there indicate what the village so clearly shows—that it has been used as a quarry. The choir, which recalled to us the one at Glasgow Cathedral, is exceedingly fine. It is of the finest Early English work. The mason work, exposed as it is to storms of wind and rain, looks as fresh as if it were just from the mason's chisel.

The following day, Saturday, was to be our last day at Ripon, as we intended to leave for York that day and there spend the remainder of our holidays. We had a farewell walk all round the town, and visited the minster before leaving. We did not get to York till about 3 p.m. As we neared this grand old city it was bathed in sunshine, and the green colour of the copped north transept roof of the cathedral helped to make our first impression of the place favourable. We first walked through the city to the cathedral and then sat and admired the enormous pile. There was so much to see in it that we could not think of working that day. Our first impression of the west front was that it was overcrowded with ornament and detail. Our guide book said that it was unequalled in style and decoration in the kingdom. I am not sure whether this is the case or not, as I have not seen all the cathedrals yet. The Early English work in the north transept pleased us better. The corbels on the south side of the nave are splendid examples of natural foliage and are all different. The south transept is of very good Early English work—the details excep-

tionally so. It was a relief to come on the chapter clerk's offices. They are so simple compared with the rest of the building and are a very good example of domestic Gothic. St. Cuthbert's window is 72ft. high, and has the appearance of a second transept, though it does not project beyond the aisle. We now came to the gem of the cathedral—the north transept, with its five sister windows. The lights are all of the same dimensions, 53ft. by 5ft. They retain their original glass of a diaper pattern, and remarkable for its subdued silver-grey tint.

The Chapter House is octagonal. The windows are good examples of decorated work. There are some fine carved canopies in the interior, and there is no central shaft. The height is 67ft., and diameter 42ft. The nave is the largest in England, being 210ft. long, 103ft. wide, and 93ft. high. The west window is a good example of late decorated tracery. It is not unlike the oak leaf in character. The choir is perpendicular, and is very good. The feature is its great east window, with its many flimsy mullions—more wonderful than beautiful. The minster library is of good Early English work.

The next thing of interest at York is St. Mary's Abbey, which stands in the grounds of the Philosophical Society. There is not much remaining of it except the north aisle of nave. What remains shows that it may have been a very fine building. There is an antiquarian museum in the same grounds, which contains many Roman remains. Not far from the cathedral on the west side is an old Jacobean palace, now used as a school for the blind. The walls of the city are interesting with their old gates, or bars as they are called. A walk round them gives one a good idea of the old city. The old churches in York are numerous, and particularly good, but they are mostly in such bad positions that it was almost impossible to get photos of them. St. Margaret's, in Walmgate, has a fine Norman



SEDILIA, FROM RIPON MINSTER. DRAWN BY JAMES BROWN.



## NEW CHURCH AT EALING.

ON Wednesday last the new church of St. Saviour, which has just been erected at Ealing from the designs of Mr. G. H. Fellowes Prynne, of Westminster, was consecrated by the Bishop of London. Being a mission church, situated in the midst of humble dwellings, an elaborate and costly building was not to be expected, and the new church—especially as regards its exterior—is for the most part extremely simple. Nevertheless, it presents several interesting architectural features. The church is built of red brick with stone facings; a copper covered *flèche*, rising to a height of 46ft. above the roof, is the most striking feature of the external design. On entering the building the visitor's attention is at once arrested by an elaborately carved oak rood beam surmounted by a sculptured representation of the Crucifixion. Some objections, we understand, are entertained against this rood beam on ecclesiastical grounds, and attempts are being made to have it removed. With that aspect of the matter we are not concerned, but on purely artistic grounds we may express the opinion that the removal of this beautiful and impressive architectural embellishment would be a grave mistake.

With the exception of the rood beam, the whole of the woodwork in the church—doors, roof, and furniture—is stained green. This gives a very pleasing effect, and harmonises well with the red brickwork.

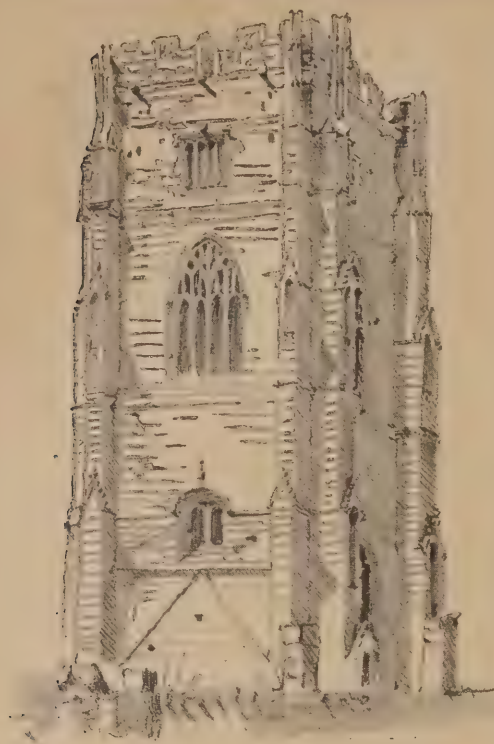
The roof of the chancel is to be decorated at some future time when funds allow, and the same remark applies to the plain plastered panels round the walls of the nave. Another contemplated embellishment is the placing of figures of the twelve apostles on niches provided for them on the splay of the nave walls at either side of the chancel arch. Only one figure—that of St. Peter, which has been presented by his architect—is at present in position. When the whole of the decorative work has been completed in accordance with the architect's designs, the interior will present a very rich and beautiful appearance.

The nave is 113ft. long by 40ft. wide, and has an apsidal-ended baptistry at the west end. Properly speaking, there are no aisles, but wide passages are provided on either side of the nave. Leading from the south transept is a small apsidal-ended chapel. Galleries for organ and musicians are placed on either side of the chancel. The cost of the church, including the fittings, has been about £12,000. Messrs. Goddard and Sons, of Farnham, were the contractors. The heating is by hot water, and the building is lighted by electricity.

The consecration ceremony aroused consider-

able interest in Ealing, some of the streets in the neighbourhood of the church being decorated with flags. After the service a luncheon was held at the Victoria Hall, presided over by the vicar of the parish, Rev. W. Templeton King. The Bishop of London gave the toast of "The Building Committee," and Mr. Henry Hall, in responding, gave some particulars of the progress of the building scheme. He explained how the committee had chosen their architect. A small sub-committee, appointed to visit churches in the neighbourhood of London, reported that they approved of Mr. Fellowes Prynne's churches more than of any others they had seen, especially mentioning the church of All Saints', Dulwich, and the one erected for Sir Edward Clarke at Staines. Mr. Prynne, accordingly, was instructed to prepare sketches, which were unanimously approved and adopted. Mr. Prynne had made church architecture his special study, and he thought they might feel justly proud in knowing that the church had been designed and carried out by so distinguished a member of the architectural profession; the result of Mr. Prynne's work was a building of admirable proportions, simple, dignified, effective, well lighted, well warmed, and of excellent acoustic properties. He concluded by proposing the health of Mr. Prynne.

Mr. Fellowes Prynne, in responding, said that an architect was greatly dependent upon those who helped him in carrying out the work. The contractors, Messrs. Goddard and Sons, were a well-known firm of church builders, having carried out sixty or seventy churches, including two of his own, and he had every confidence that their work would stand for many years. He also gratefully acknowledged the services of the clerk of works and the workmen. The difficulties with which the architect was encumbered were not realised, said Mr. Prynne, by the general public. One day the church architect had, perhaps, a client who wished to build with one sole aim—the glory of Almighty God. Most builders of churches, he was glad to say, belonged to this class. But there was another class who wished to make their building a mere whitened sepulchre, a mere brick or stucco building, void of Art or symbolism, which could not foster religious feelings. They must agree that Architecture had an enormous influence on devotional feeling. They could not go into the cathedrals and churches of England without feeling at least the spirit that inspired the ancient architects in raising such structures to the honour and glory of God. Some there were who, not content with living and worshipping in their white-washed walls, wanted to drag the



TOWER FROM SOUTH, LOOKING OVER THE RUINS, FOUNTAIN'S ABBEY. DRAWN BY JOHN BALSTON.

porch. Nearly all the churches contain old glass. The old streets are interesting, and many a picture can be got, notably in the Shambles, the Pavement, Stonegate, Goodramgate, &c. There is a good half-timbered house in Stonegate. In many of the narrow streets round the cathedral a glimpse of the towers of the minster is seen, giving the place an old world appearance. St. William's College on the east of the cathedral is interesting and is now used as a tenement for the poorer classes. We stayed in York until Thursday night, the 29th. On the Sunday night we walked out to Skelton to see the little church there. It is four miles out of York in the direction of Thirsk. It was built about the same time as the north transept at York. It is a beautiful little church. On Tuesday afternoon we took advantage of an excursion to Whitby. We found it a most picturesque place, very unlike the usual English watering-place. The abbey has a most unique situation; instead of lying in a cool, sequestered spot, it stands overlooking the sea, 200ft. above sea-level, exposed to "every airt the wind can blow." The remains are principally of Early English work and are very much ruined. The north transept and east end are very fine.

**The New Catholic Cathedral**, near the Victoria Station, Westminster, will shortly be finished. Over £88,000 has already been spent on its construction, and it is estimated that double that amount will have been spent by the time it is completed.

**Memorial Reading Desk at Little Wenlock.**—A carved oak reading desk has just been placed in the parish church at Little Wenlock, Shropshire, in memory of the late Rev. Canon Nash, for nine years rector of the parish, who died last year. It has been erected by the parishioners with the help of Lord Forester, patron of the living, and other friends of the late Canon. The reading desk has moulded and panelled standards and open tracery between, surmounting a closed panel, which bears a suitable inscription cut in the oak. The whole is of very solid workmanship. It has been designed by Mr. W. Arthur Webb, A.R.I.B.A., of 2, Colville Square, W., and carried out by Mr. T. Martin, of 118, Victoria Street, S.W.



THIRSK CHURCH, YORKSHIRE, FROM THE SOUTH.



architect and others down to their own white-washed level. Some would even wish to banish the very symbol of Christianity. Surely the first thing seen on entering a church should be the glorious symbol of our religion, that, in kneeling to worship, our thoughts should be led to the great Divine sacrifice for men, that, passing under the Holy Rood, we may be reminded that through the sorrows and suffering of the Cross alone can we hope to enter into the enjoyment of the highest blessings beyond. If he had added, or should add in the future, any devotional feeling through the building of that church, he could say from the very bottom of his heart he was amply and fully rewarded.

Other toasts followed.

## R. I. B. A.

### ELECTION OF COUNCIL, STANDING COMMITTEES, &c.

(Continued from page 284, No. CCXXVII.)

THE first business done at the meeting of the Royal Institute of British Architects, on the 12th inst., Mr. John Slater presiding, was to receive the report of the scrutineers appointed by the annual general meeting to direct the election of the Council, Standing Committees, &c., for the year of office 1899-1900. The result of the election has been as follows:—

*President.*—Mr. William Emerson.

*Vice-Presidents.*—Messrs. J. McKean Brydon; W. Milner Fawcett, M.A.Cantab, F.S.A.; H. L. Florence; E. A. Gruning.

*Hon. Secretary.*—Mr. Alexander Graham, F.S.A.

*Members of Council.*—Messrs. F. T. Baggalay; Thomas Blashill; James Brooks, Past Vice-President; J. J. Burnet, A.R.S.A. (Glasgow); W. D. Caröe, M.A.Cantab, F.S.A.; T. E. Colcutt; J. A. Gotch, F.S.A. (Kettering); E. T. Hall; H. T. Hare; E. W. Mountford; Beresford Pite; John Slater, B.A.Lond.; R. Phené Spiers, F.S.A.; H. Heathcote Statham; Leonard Stokes; Sir John Taylor, K.C.B.; Paul Waterhouse, M.A.Oxon; Aston Webb, A.R.A., F.S.A., Past Vice-President.

*Associate-Members of Council.*—Messrs. J. Sivewright Gibson; H. V. Lanchester.

*Representatives of Allied Societies.*—Messrs. D. Barclay (Glasgow Institute of Architects); R. Isaac Bennett (Manchester Society of Archi-

CORBEL FROM CHOIR, YORK MINSTER. DRAWN BY JOHN RALSTON.

itects); J. Crocker (Devon and Exeter Architectural Society); Thomas Drew, R.H.A. (Royal Institute of the Architects of Ireland); Robert Evans (Nottingham Architectural Society); C. B. Fowler (Cardiff, South Wales, and Monmouthshire Architects' Society); W. Glover (Northern Architectural Association); A. E. Sawday (Leicester and Leicestershire Society of Architects); J. Smith (Sheffield Society of Architects).

*Representative of the Architectural Association (London).*—Mr. G. H. Fellowes Prynn.

The following members were declared duly elected to serve on the Standing Committees for the ensuing year of office:—

*Art Standing Committee.*—*Fellows:* Messrs. J. Macvicar Anderson, F.R.S.E.; James Brooks; J. M. Brydon; W. D. Caröe; Ernest George; H. T. Hare; E. W. Mountford; H. H. Statham; Alfred Waterhouse, R.A., LL.D.; William Young. *Associates:* Messrs. R. S. Balfour, J. Sivewright Gibson, H. V. Lanchester, A. N. Prentice, W. H. Romaine-Walker, J. W. Simpson.

*Literature Standing Committee.*—*Fellows:* Messrs. John Bilson; H. L. Florence; Alexander Graham; B. Ingelow; J. Tavenor Perry; W. A. Pite; Sydney Smirke; R. Phené Spiers; H. H. Statham; Paul Waterhouse. *Associates:* Messrs. A. S. Fowler, M.A.Oxon, F.S.A.; J. H. Jones, B.A.Lond.; A. N. Prentice; R. Elsey Smith; L. Waterhouse, M.A.Cantab.; P. S. Worthington, M.A.Oxon.

*Practice Standing Committee.*—*Fellows:* Messrs. T. Batterbury, S. Flint Clarkson, T. Harris, G. Hubbard, A. H. Kersey, J. Douglass Mathews, W. Hilton Nash, Beresford Pite, J. Osborne Smith, E. Woodthorpe, M.A.Oxon. *Associates:* Messrs. W. H. Atkin-Berry, C. H. Brodie, H. Hardwicke Langston, Sydney Perks, A. W. Tanner, W. H. White.

*Science Standing Committee.*—*Fellows:* Messrs. L. Angell, M.Inst.C.E.; Delissa Joseph; H. W. Pratt; J. S. Quilter; H. D. Searles-Wood; Percival Gordon Smith; A. Saxon Snell; Lewis Solomon; W. C. Street; Benjamin Tabberer. *Associates:* Messrs. S. B. Beale; H. W. Burrows; Max Clarke; B. J. Dicksee; Matthew Garbutt, Assoc.M.Inst.C.E.; Charles Henman.

The hon. auditors for the past official year, Messrs. Zephaniah King and Frederick William Marks, were re-elected for the ensuing year.

It was then decided on a motion of Mr. H. Hardwicke Langston, that in the opinion of the meeting it was desirable to put a suitable and prominent inscription on the street front of 9, Conduit Street, indicating that those premises were occupied by the Royal Institute of British Architects.

The meeting then passed to the consideration of the report printed in our issue of last week, of the special committee appointed by the council to consider the administration of the building by-laws in non-metropolitan districts. After some slight discussion the report was passed *nem. con.*

The Chairman then moved the following resolution, passed by the Special Committee and approved by the Council: "That the Royal Institute of British Architects petition the Local Government Board to promote a Bill in Parliament to regulate the procedure in dealing with party structures in a similar manner to the London Building Act of 1894 in all parts of England where there are no Acts of Parliament dealing with such party structures." This resolution was carried unanimously.

Mr. J. M. Brydon then moved a resolution congratulating Sir Laurence Alma Tadema, R.A., who had done yeoman service to the Institute as a member of the Art Committee, upon his knighthood. The resolution was carried with acclamation.

A Vicarage is being erected in connection with St. Matthew's Church, Edgeley, Stockport, at a cost of about £2,000.

The Glasgow Architectural Association annual business meeting was held in the Rooms, 187, Pitt Street, on Tuesday evening, June 6th, at 7.30, the president, Mr. Geo. S. Hill, A.R.I.B.A., in the chair. The business of the evening comprised the reading of the secretaries', treasurer's and librarian's reports, which were adopted, and the election of new office-bearers for the ensuing season. The following gentlemen were elected to office:—President, Mr. John Fairweather, A.R.I.B.A.; vice-presidents, Mr. Chas. E. Whitelaw and Mr. Wm. J. Blain; secretaries, Mr. Alex. Wingate and Mr. Thos. Ramsay; treasurer, Mr. Walter S. Tucker; librarian, Mr. Andrew Rolls; general committee, Messrs. Geo. S. Hill, A.R.I.B.A., Jas. Lockhead, A.R.I.B.A., Alex. McGibbon, A.R.I.B.A., Jas. McKissack, Alex. Davie, Wm. Vickers, Wm. S. Lukeman and Robert J. Walker. A vote of thanks to the retiring president, Mr. Geo. S. Hill, concluded the meeting.

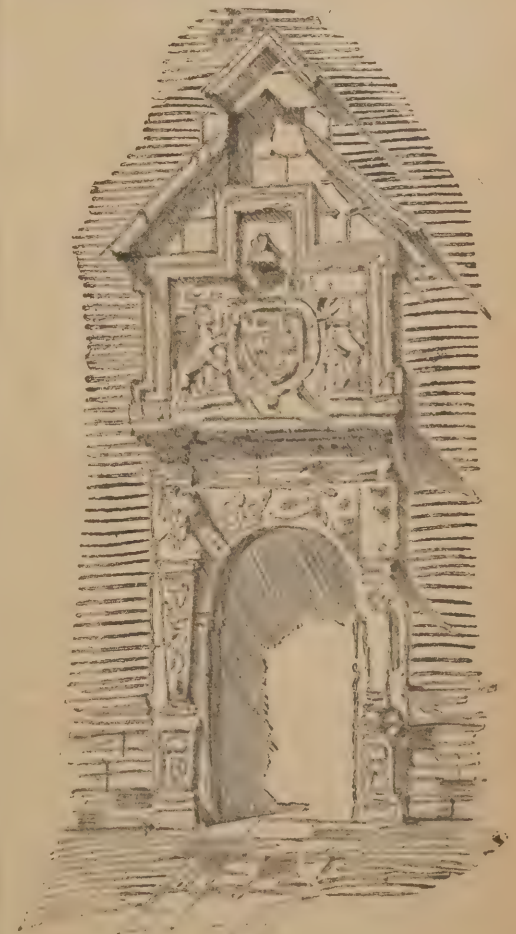


TOMB OF WALTER DE GRAY, SOUTH TRANSEPT, YORK CATHEDRAL. DRAWN BY JAMES BROWN.

T T 2



CORBEL FROM CHOIR, YORK MINSTER. DRAWN BY JOHN RALSTON.



ENTRANCE DOORWAY, SCHOOL FOR THE BLIND, YORK. DRAWN BY JOHN RALSTON.



## Correspondence.

### THE REGISTRATION OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.  
CLAPHAM, S.W.

SIR,—I beg to call attention to one or two points in the Architects' Registration Bill which I think want thrashing out, and I respectfully offer a few suggestions for consideration by the framers of the Bill.

(1) I consider that no annual fees should be paid, for it would be distinctly unfair if a

where so it would come under the head of non-professional conduct. (3) Members of the Royal Institute of British Architects ought not to be shown any favouritism by the exemption from the payment of fees. (4) With regard to the apprenticeship to a practitioner, I think this is quite unnecessary if the examinations are conducted properly, so as to show the knowledge of the candidate. To ensure this examination being of a sound and practical nature, I would add to the General Council members elected by the Master Builders' Association, the Engineers' and Surveyors' societies. (5) Clause 27 should not stand as it does at present; it provides that registered architects alone should be allowed

professions who was able to show certificates of competency from the council of whichever recognised society he belonged to. (6) Registered foreign or colonial practitioners ought not to be prevented from practising in the United Kingdom, for this would mean that were a large and very important building of world-wide interest to be erected in this country, and were the selection of the architect for the work a matter for open competition, as in the case of the building of the University of California, competed for just recently, the choice would be restricted to architects at home. I would propose that a foreign or colonial practitioner, registered as such, should be allowed to carry out work here provided he personally superintends the work. And, again, the Isle of Man and the Channel Islands are proposed for classification as colonies. Surely these are near enough for an architect to safely see to the carrying out of work in Great Britain. (7) I think that the register should also be made out under the towns in which the registered persons practice, and not only in alphabetical order, for it would often be necessary to know the disposition of practitioners in any locality.

But for these restrictions I consider the Bill is extremely sensible, and would undoubtedly obtain for the profession that much-needed recognition by the public, and would help to promote a better architecture.—Yours, &c.,

H. D.

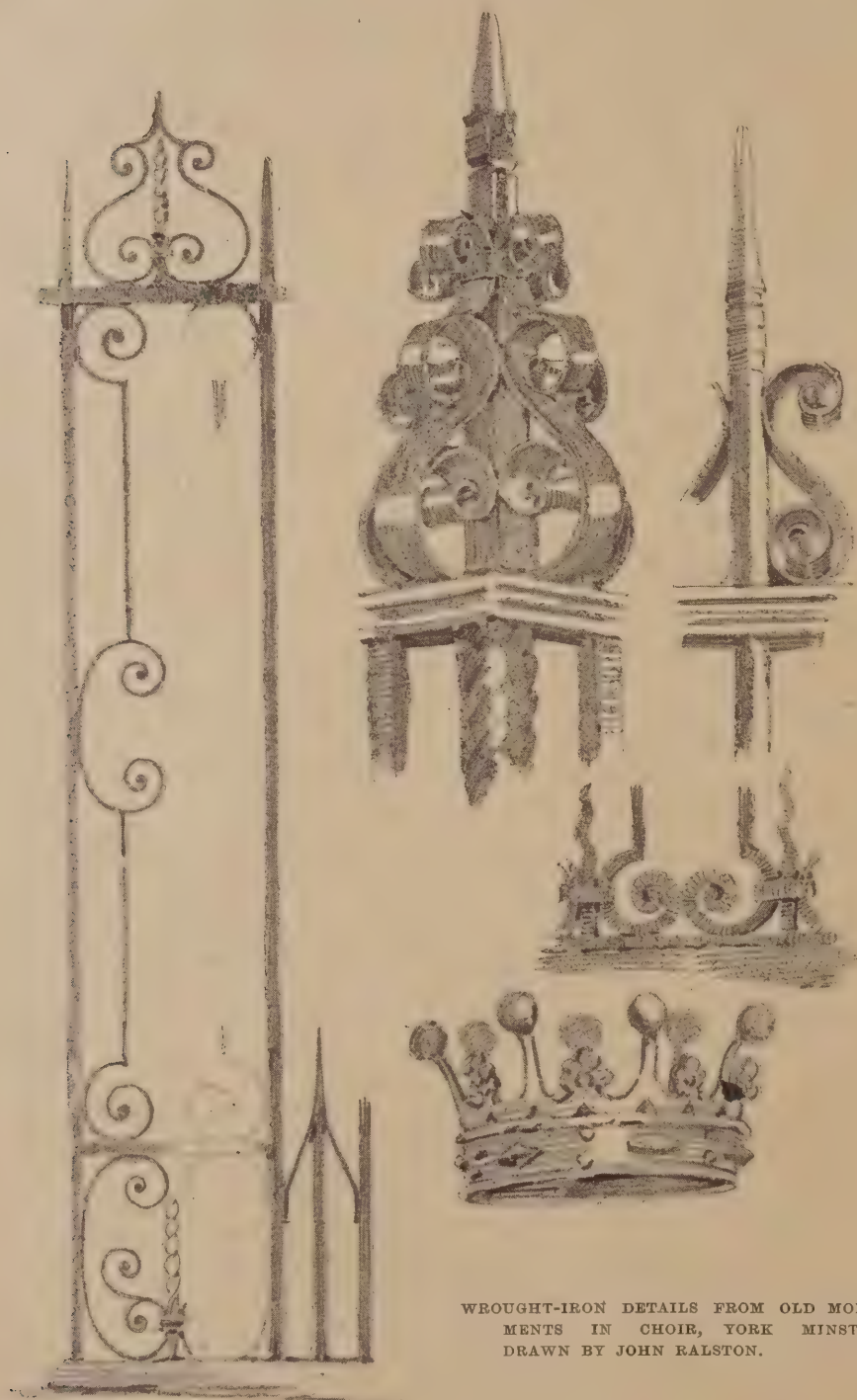
## Views and Reviews.

### LONDON'S WATER SUPPLY.

This book provides a comprehensive digest of the facts bearing upon the present controversy upon the water supply of London. Mr. Shadwell does not provide dry reading, but treats his subject in a most clear and generally satisfactory way. It is a great pity that the water question has descended into the arena of party politics, and, in truth, Mr. Shadwell does not seem to be entirely free from party bias. All the mud throwing that has taken place has wearied and disgusted the average Londoner until he has quite lost interest in the question. It will therefore be a relief to him to turn to the pages of this book and have the facts of the subject clearly placed before him. Although the author contends that the inhabitants of the metropolis are well supplied or could be, by the companies, he is not unwilling to admit the reasonableness of the public control of such necessities as water gas, &c., and to this end he makes a suggestion worthy of most careful consideration. He suggests that the water question is not simply a local one, but a national one, and should be controlled in respect to the sources of supply, and the treatment of water before delivery, and suggests amalgamation of the companies for the provision and distribution of water. Mr. Shadwell makes a strong case against the policy adopted by the London County Council in trying to secure control of the water supply to the Metropolis. With regard to the technical difficulties of the problem, he wisely leaves them alone. This side is being considered by Lord Llandaff's Commission, and we shall hear from them as to the advisability of the adoption of Sir A. Binnie's scheme for the bringing of water from Wales, and whether a large enough supply cannot be got for many years to come from the sources at present available. The question of long distance supply is also agitating the Midlands, and, therefore, Mr. Shadwell's suggestion is most opportune. He contends that the present supply of London compares most favourably with Continental towns and our own large towns, and the statistics he puts forward seem to warrant this view. We strongly advise the perusal of this work by all who are interested in the water problem.

"The London Water Supply." By Arthur Shadwell, M.A., M.B. 5s. London: Longmans, Green, and Co., 39, Paternoster Row, E.C.

The Dedication of a new Tower at St. Michael's, Aston, occurred last Thursday.



WROUGHT-IRON DETAILS FROM OLD MONUMENTS IN CHOIR, YORK MINSTER.  
DRAWN BY JOHN RALSTON.

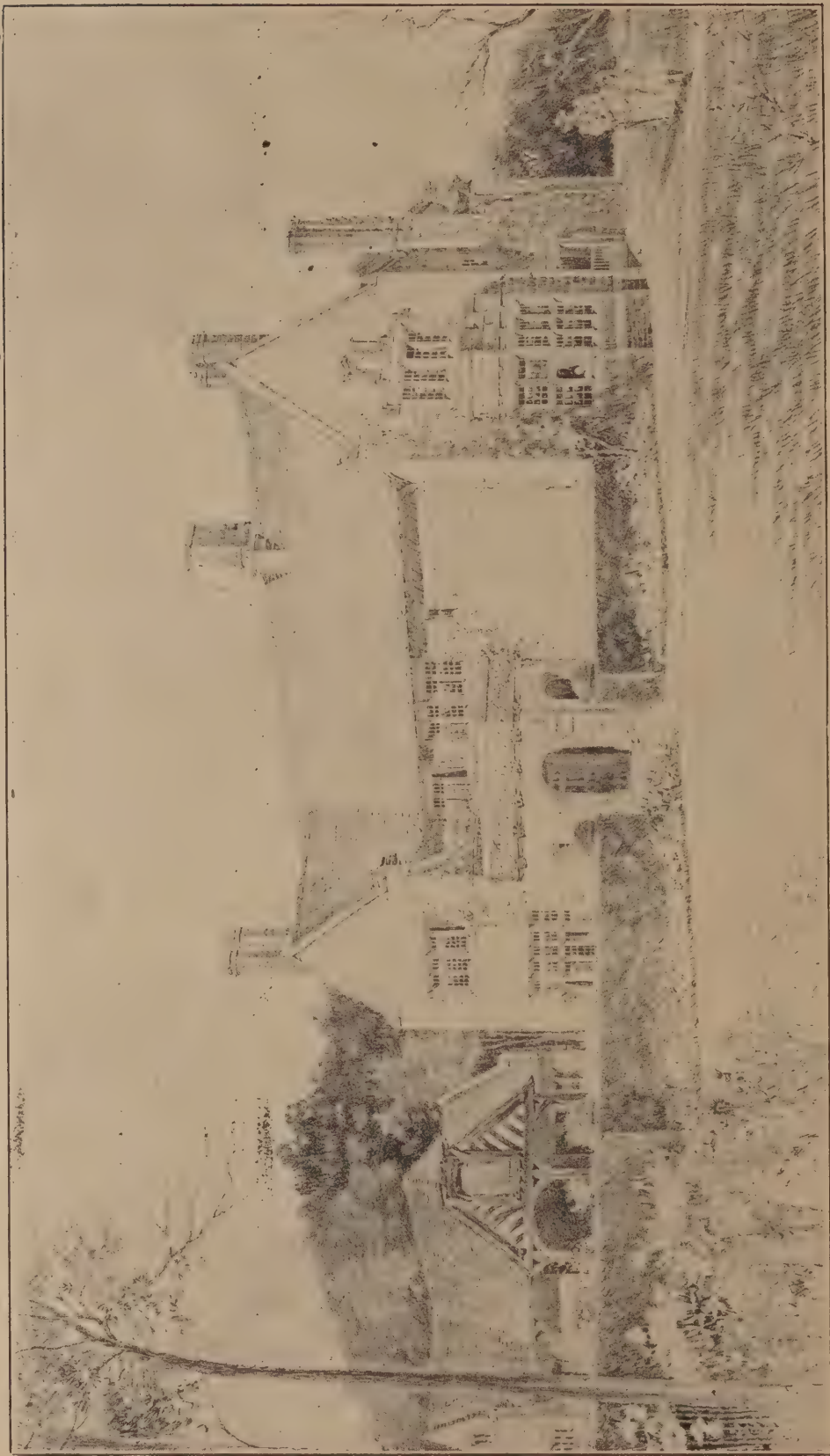
person were placed in such a position that he was unable to pay the fee within the time allowed that he should be practically deprived of the means of gaining his living in the domain of architectural practice until he had paid his fees. (2) I would omit in clause 18 the sentence relating to removal of name from register on account of misdemeanour or higher offence, for I do not consider that this would in all cases be detrimental to his standing as an architect, but

to recover fees for professional services, but that this shall not prejudice the right of professional members of the Institution of Civil Engineers or the Surveyors' Institution to recover charges for work of any kind falling within the duties of their callings. Surely there are other societies besides the two named which have a claim to the same consideration. Also 28<sup>(3)</sup> should be amended with regard to these same institutions. I would amend the clauses so as to include any member of these



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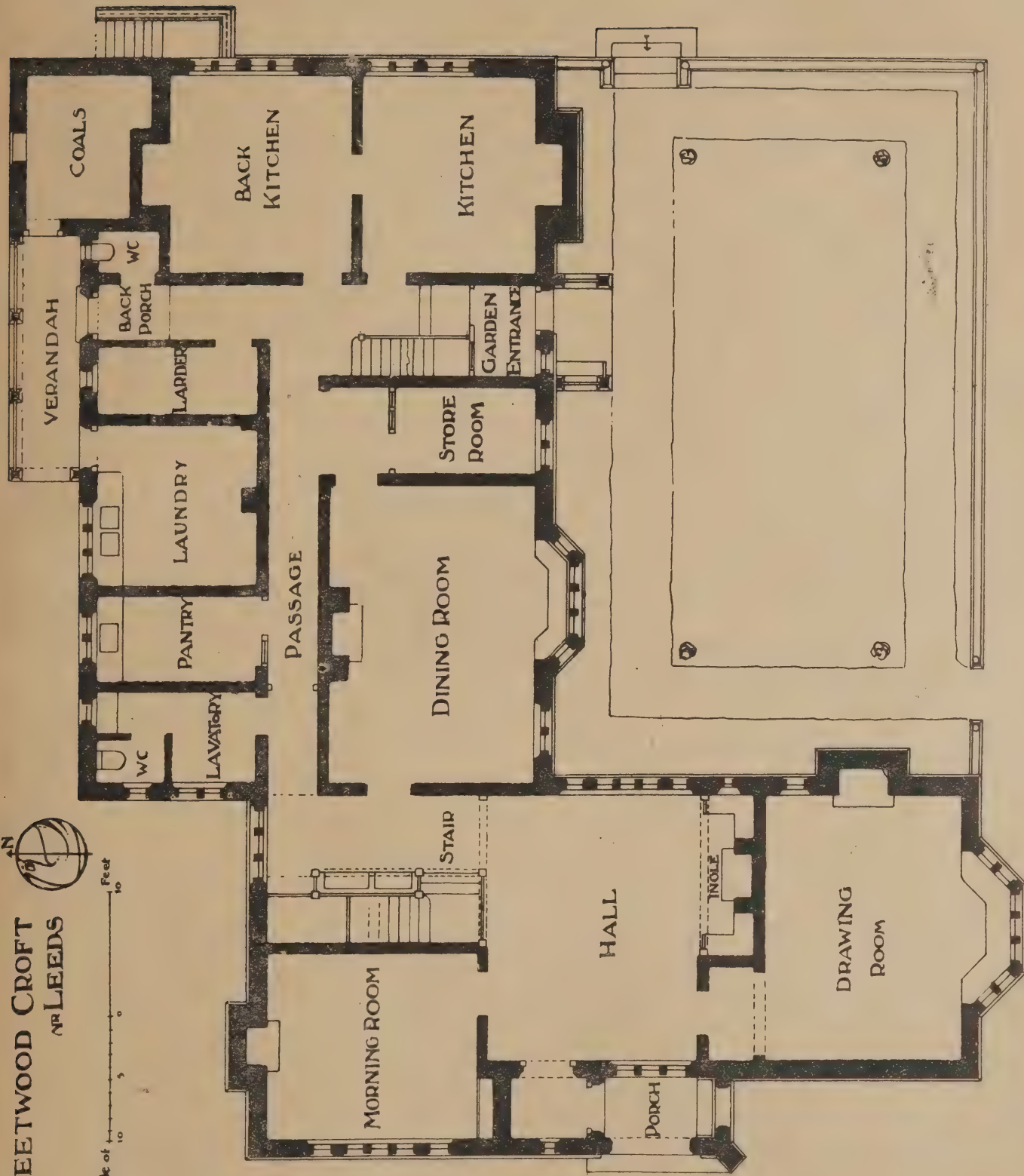
WEETWOOD CROFT, NEAR LEEDS. FRANCIS W. BEDFORD, ARCHITECT.



# WEETWOOD CROFT NEAR LEEDS



Scale of 10 Feet



GROUND PLAN OF WEETWOOD CROFT, NEAR LEEDS. FRANCIS W. BEDFORD, ARCHITECT.

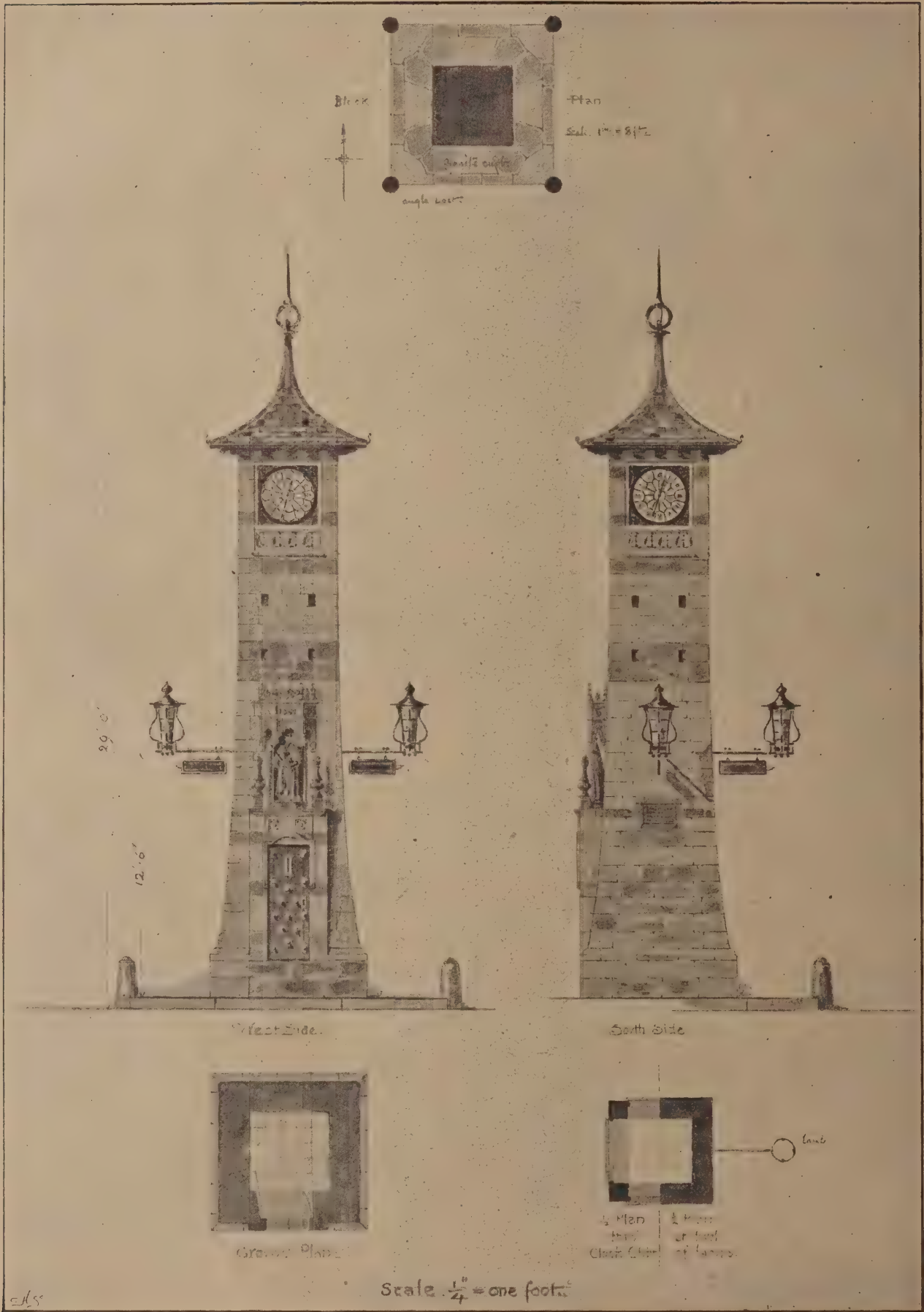


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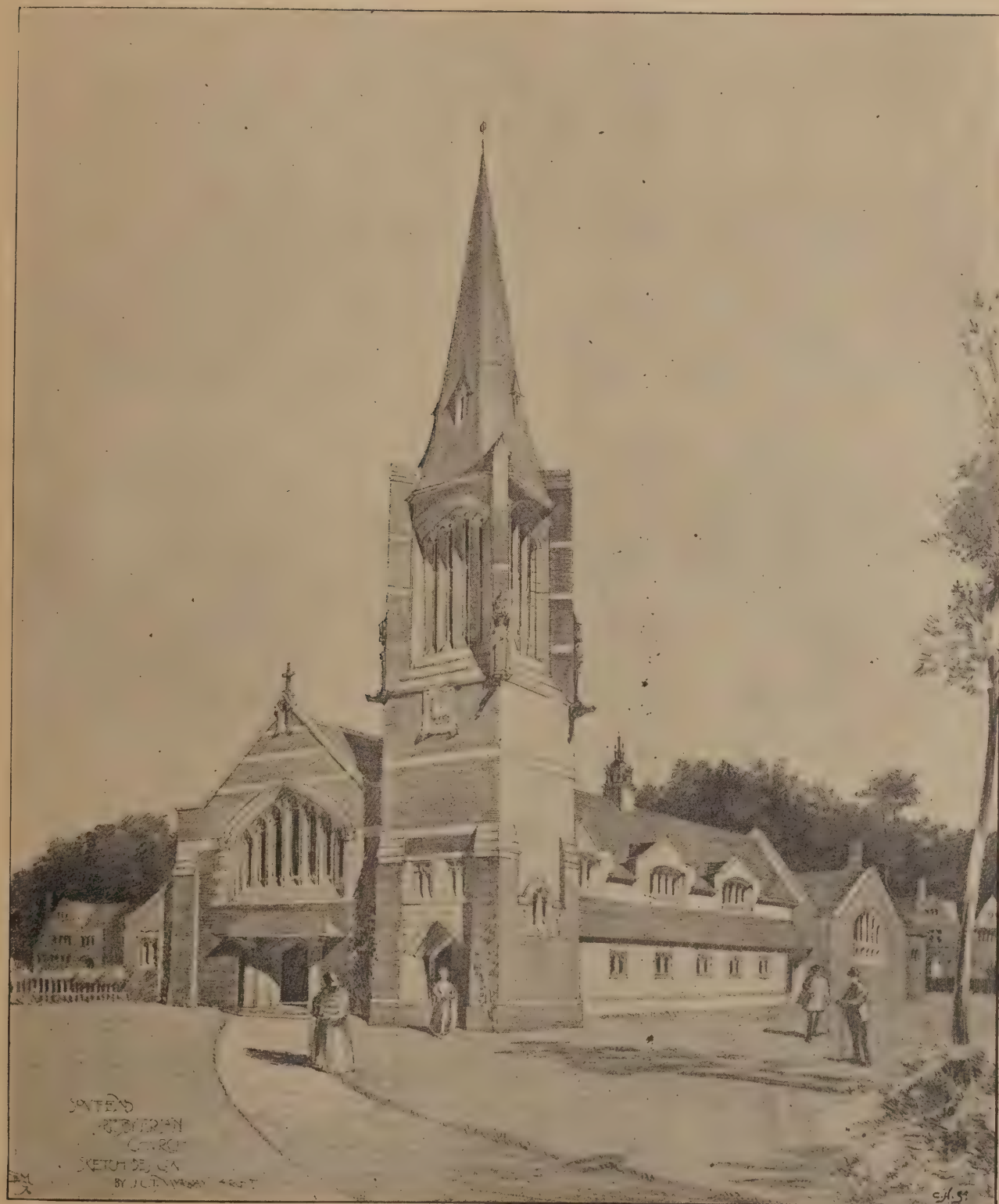
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DESIGN FOR A JUBILEE CLOCK TOWER AT LEWISHAM. HENRY ROSE, ARCHITECT.





DESIGN FOR SOUTHEAST PRESBYTERIAN CHURCH. J. C. T. MURRAY, ARCHITECT.



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## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### DESIGNS FOR SMALL COTTAGES.

To the Editor of THE BUILDERS' JOURNAL.

ALLOA.

SIR,—Do you publish a book, or special number, dealing with cottage designs? I want to build a cottage of about four or five apartments, two or three rooms downstairs, two upstairs, say storey and a half, something nice, simple, and cheap, and should be glad if you can give me any assistance in the matter. —Yours, &c., F. H.

An article on "The Planning of Small Houses," by Mr. H. V. Lanchester, A.R.I.B.A., appeared in our issues for February 10th and 17th, March 10th, April 21st, May 19th, and June 23rd, 1897. Small designs that probably meet your requirements appear in our issues for September 2nd and November 11th, 1896, and for March 30th, 1898. Designs for larger houses are constantly appearing in our columns.

### CONSTRUCTING TILED ROOF.

To the Editor of THE BUILDERS' JOURNAL.

RUGBY.

DEAR SIR,—I am constructing a roof over a house, without wood, tiling with plain Broseley tiles on steel laths. I propose to hang ribbed tiles with clean laths, not tiles, and torch in Portland cement mortar (2 and 1). Can you tell me (1) Whether any special treatment or precaution is necessary to insure the cement gripping the lath? (2) Whether the cement should be used in a larger proportion to the sand, or may be used in a less?—Yours gratefully, P. F. X.

We cannot remember ever having seen this construction attempted before, so that whatever is done will be experimental; but we fancy (1) That a key for the mortar would have to be provided, by punching rough holes through the laths or by indenting their edges; and (2) That hair should be mixed with the mortar, the proportions of which should otherwise be satisfactory. G. A. T. M.

### THE OLD "BLUE-COAT SCHOOL," AT WESTMINSTER.

To the Editor of THE BUILDERS' JOURNAL.

CATFORD, KENT.

SIR,—Would you kindly tell me what is going to be done to the old "Blue-coat School" in St. James' Street, Victoria Street, S.W., which is, I believe, ascribed to Sir Christopher Wren. It looks as if it were about to be pulled down. If so, can you tell me if measurements of it exist and where they are?—Yours faithfully, W. H. G.

We are informed by the Clerk to the Vestry of Westminster that the property has been purchased by the Vestry for conveyance to the Trustees of the National Schools of the Parish of Christ Church, in exchange for the site of the existing parish schools. One of the conditions of the conveyance is that the original building, erected in 1708-9, shall be preserved in perpetuity for the purpose for which it was erected. The ascription of the building to Sir Christopher Wren has several times been questioned, but some of the architectural features, both in the brickwork and internal woodwork, are admitted to be above the average. We know of no measurements.

### WATER SUPPLY AND DRAINAGE.

To the Editor of THE BUILDERS' JOURNAL.

NORTHAMPTON.

SIR,—Will you advise me how to remedy the present arrangement of the water supply to a country house, and also as to whether the drainage is satisfactory? There is not

sufficient flush in the w.c., which is a pedestal closet named the "Shark," to clear away paper, although the excreta goes away all right. The water is pumped by a lift and force pump from a well under the scullery into a tank in roof, this supplying sink, bath, lavatory, and w.c. The cistern (two gallons) is only about 4ft. 6in. above w.c. seat, with 1½in. flush pipe.—Yours, &c., SAXON.

It is not stated whether the flushing cistern to the w.c. is of the valve or syphonic action type. The fact that the water-flush does not thoroughly clear the basin is apparently due in this case to the small head of water available, and the insufficient velocity and volume of water discharged. A three-gallon syphonic action flushing cistern, with a 2in. diameter flushing pipe, should prove an effectual remedy. The flushing pipe should be fixed with easy bends. The plan you send shows the house drainage cut off from the public sewer by means of an intercepting chamber, with syphon trap. It is assumed that the "vent" to the intercepting chamber refers to the "fresh air inlet," and that it is properly arranged on the house drain side of the trap, so as to admit fresh air to the house drains. A ventilating pipe should be provided to the outdoor closet as well as to the indoor closet. It would be an improvement if the drain from the outdoor closet were carried in a straight line to the intercepting chamber, and the branch from the indoor closet connected thereto within an inspection chamber constructed for this purpose. All bends and junctions would then be accessible. The branch soil drain under the passage inside the house, and as far as the new inspection chamber, should be of heavy cast iron, with caulked lead joints, a cast iron duck's foot bend (bedded on concrete) being fixed to receive the soil pipe. T. E. C.

### SEDILIA, &c., IN LINCOLNSHIRE AND YORKSHIRE CHURCHES.

To the Editor of THE BUILDERS' JOURNAL.

NEWCASTLE-ON-TYNE.

SIR,—I shall be glad if any of your correspondents can tell me of a church about Yorkshire or Lincolnshire that contains either a good and fairly elaborate decorated sedilia, Easter sepulchre, or monument of about the same size. I know of Heckington and Newark.—Yours, &c., HAWKEYE.

(1) I do not know of an Easter sepulchre of any pretension in Yorkshire. There is a very good sedilia and piscina in the choir of Selby Abbey, with one or two good screens. In Beverley Minster is the celebrated Percy shrine, one of the most beautiful monuments in Great Britain. Also there are some very good tombs in York Cathedral, especially the one to Archbishop Walter Grey. But for beauty of proportion and good design it would be hard to beat the tomb to Lord Lionel Welles in Methby Church, near Leeds. If your correspondent would write to me, I should be very pleased to give him whatever information about architectural Yorkshire I know. HAROLD E. HENDERSON.

12, Ridge Road, Armley, Leeds.

(2) I know of nothing in Yorkshire or Lincolnshire to touch Heckington for its Easter sepulchre and sedilia, or for any monument of that size and of equal richness of the decorated period. There is a beautiful sedilia in Ripon Cathedral, and a fine Easter sepulchre at Lincoln; also a beautiful altar screen at Selby. Of course "Hawkeye" knows of Beverley and its beautiful altar screen (back part unrestored) and Percy tomb. There is a fine founder's tomb and chantry in Trinity Church, Hull, but much restored. At Helpringham, close to Heckington, there are also interesting sedilia, piscina, &c., of decorated date. J. J. C.

A New Wing has been added to Centre Cliff Hotel, Southwold, comprising a dining hall 52ft. long and 32ft. wide, and about thirty new bedrooms over it. The architects were Messrs. George J. and F. W. Skipper, of Norwich; general contractor, Mr. J. Youngs, of Norwich; and plasterer, Mr. Crotch.

## ACCOUNTS FOR ARCHITECTS.

By HENRY CALDER MARSHALL, F.C.A.

(Continued from page 279, No. CCXXVII.)

LET us now turn to the second part of our subject, "a simple system of accounts suitable for the profession of architects," but before doing so I would very briefly say a little on the rudimentary principles of book-keeping. I hope my readers will not think I am insulting them by beginning with "first steps" any more than I should feel insulted if they volunteered to teach me the A B C of Architecture.

What is book-keeping? We will not answer the question by replying, "The art of keeping books;" that reminds us too much of the student, who, when going up for an examination, was asked the question, "What is an Archdeacon?" gave as a reply, "One who performs Archidiaconal duties." Perfectly true, no doubt, but not such an answer as would convey to the examiners the feeling that the candidate knew anything of the subject.

Book-keeping may be defined as the art, science, or method of recording the financial transactions of a business or person so as to show at a glance, at all times, the value of the whole estate or capital, and of each of its component parts in a clear and concise manner.

It shows whether capital has been increased or diminished, and by what means such gain or loss has been effected, and also the state of the account between the professional or business man and the person or persons with whom he has transactions.

The component parts of an architect's business may be summed up, I think, as follows:—Cash (either at bank or in hand), fees (commission or otherwise), perhaps bills and debtors, lease, furniture, &c. These, after deducting creditors and other liabilities, form the capital or estate—and I will try to show how these can be exhibited in a way that shall be, at one and the same time, both comprehensive and concise.

There are two systems of book-keeping, one named "Single Entry" and the other "Double Entry." We will leave the first or "Single Entry" alone altogether as being incomplete and unsatisfactory, and only deal with the system called "Double Entry." But do not run away with the idea that "Double Entry" means double work. It does certainly entail a little extra work, but this is far more than compensated for by the "Double Entry" being both correct and in every way more satisfactory.

There are two sayings or axioms in connection with book-keeping by "Double Entry" which cannot, I think, be too strongly reiterated, these are "Every debit requires a credit" (and consequently "Every credit requires a debit") and "In debit out credit." The first is the foundation of the system, and the second is a short and trite way of explaining that a man should debit himself with all he receives and credit himself with all he gives out.

The page to your left hand in a ledger is called the debit side, and that on the right the credit side, and it must not be forgotten that every entry on the one side must have a corresponding entry on the other side, either in a single amount or in an amount made up of the several items. The totals of all the entries on the debit side should agree with the totals of all the entries on the credit side.

In one of our ablest works on book-keeping, the writer says:—"Book-keeping creates nothing, it merely records transactions as between a giver and a receiver, the giver (as an individual or an aggregate) being credited with what he gives, while at the same time the receiver (as an individual or an aggregate) is debited with what he receives, and thus the balance is always kept equal" (Gérard van de Lindes' Book-keeping, page 2). And so we come, back to our quotation, "In debit out credit." Let me give you an example. Our architect renders a bill of costs—what goes out and what comes in. The architect has given out his services, therefore the amount at which he values his work is placed to the



credit of fee account, and the client to whom the bill is sent becomes the debtor, so we debit his account with the amount. Now what happens when the account is paid? The money comes in to cash, therefore cash is debited, it goes out of the client's account, therefore the client is credited with the amount.

Again; you buy some goods: what comes in? The goods. Therefore you debit goods or purchases account. What goes out? Why your indebtedness to the seller of the goods; therefore you credit his account with the amount. When you pay for the goods what happens? You take the money out of your bank; therefore you credit cash and you put it to the seller's account, therefore you debit him.

Take the case of bills receivable. A man owes you money; he is debtor in your books for the amount. He gives you a bill, at say one month; that bill is a bill receivable. You say he has given me the bill in discharge of the debt, and until the bill becomes due he is no longer my debtor, therefore you credit his account with the amount, and as every credit must have a debit, you debit, what? bills receivable, for it is this account that now owes you the money. When the bill is paid, you debit cash and credit bills receivable.

Take the converse, you owe money and give a bill at say one month. This bill is a bill payable. The client to whom you gave the bill was a creditor in your books, but directly you give the bill he ceases to be a creditor until the bill becomes due. So you debit his account and credit bills payable, and when you pay the bill you debit bills payable and credit cash. Bear in mind that there is always a *raison d'être* in all these entries.

You will, no doubt, remember the story of the Irishman who gave a bill at a month for an amount he owed, and exclaimed, "Thank goodness, that account is settled." He was right in a book-keeping sense and to a certain extent, for of course during the month he no longer owed his creditor, he owed bills payable, but at the end of the time when the bill became due he would find out, not only in a book-keeping sense, but in a very practical and perhaps forcible manner, that he still owed the money.

Leaving the matter of book-keeping in the abstract, for the time being, we will turn our attention to what I would consider a satisfactory system for an architect's office, and in doing so, will you kindly imagine that I have been called in by a firm of architects (who up to this time have only had a letter-book and bank pass-book) to arrange a scheme of book-keeping for use in their office. They wish me to provide for all contingencies, and to frame for them a very complete system. They are not frightened at detail, being accustomed to that in the work of their own profession. I can find no book dealing with this special work on the shelves of our library, so I and my partners put our heads together to do the best we can for our clients, keeping the work as simple as possible and remembering that we shall have to audit the accounts at the close of the year.

We have already been in and analysed the pass-book and have gone through their letter-book, and have been able, with the aid of various vouchers, invoices, &c., to draw up a statement of assets and liabilities to form the basis of the new system.

There are four important matters that I have taken into consideration in arranging the books:—

1. Book-keeping as between the work or commission and the client.
2. Book-keeping as between the work or commission and the architect.
3. Book-keeping as between the client and the architect.
4. Book-keeping as between the architect and his partners, or the internal work of the architect's office.

I will now give you a list of books, and I hope you will not be staggered at the number. I do not say that they are all absolutely necessary, but, as you will remember, I was called in to prepare a scheme for a very complete system.

**SPECIAL BOOKS.**—1, Instructions Book; 2, Register of Plans and Drawings; 3, Specifications, Estimates, and Sub-contract Book; 4, Certificate Book; 5, Contract Book.

**FINANCIAL BOOKS.**—1, Commissions Book; 2, Cash Book; 3, Petty Cash Book; 4, Journal; 5, Ledger—Clients; 6, Ledger—Private.

**SUBSIDIARY BOOKS.**—1, Register of Letters Inwards; 2, Postage Book; 3, Press-Copy Account Book; 4, Press-Copy Letter Book; 5, Wages Book.

Before entering upon particulars of each of these books, I would ask you to bear in mind the following fundamental rules, which the firm of architects, at my suggestion, willingly acceded to:—

1. Every commission work or job to bear a distinctive name or number, corresponding to the number given to it in the instructions book.
2. Every penny of cash received in the business to be paid into the bank and not used for petty cash purposes.
3. All books to be closely written up—say, daily. This is most important in the case of

plans and meeting surveyor and builder—&c., &c.

This book is, as it were, a complete history of each commission, the closing entry being, account sent in such and such a date, the want of such an entry showing that the commission is still open, and that it has not come into the financial books.

The Instructions Book should be under the continuous inspection of the principal, and I would also advise that the architect have small memorandum books, one for each job, for facility in carrying about; in these would be jotted down roughly, notes, &c., for transcription into the Instructions Book.

**REGISTER OF DRAWINGS.**—This is a very useful book, as by its aid the working drawings of any building can readily be referred to without the necessity of turning over a pile of plans. A place for every drawing, and every drawing in its place, would be a good motto for an architect's office. A column is given in which to note the date and number of copies supplied to builder, as if more than one drawing is required an extra charge may be made.

REGISTER OF DRAWINGS.

No.	Date.	Name of Job.	Description.	No. of Drawing.	Date sent out.	Date returned.	Remarks.

books of initial entry, such as instruction book, &c., &c.

4. No account or letter to go out of the office without being press-copied in the book provided for that purpose.

5. No payment to be made out of petty cash without having a voucher for the same.

6. All vouchers both for cash payments and petty cash payments to be filed in numerical order.

7. No posting allowed from one ledger account to another, except through the journal.

**INSTRUCTIONS BOOK.**—A plainly ruled foolscap book is all that is necessary. It should have an index so that any entry can be easily referred to. In this book are entered up under a distinctive number all the particulars of each work or commission that comes into the office, with rough sketches, notes, &c., from the clients' instructions. It is not necessary to restrict each entry to one page, as if the work

**SPECIFICATION, ESTIMATE, AND SUB-CONTRACT BOOK.**—An ordinary guard book (with an index) for gumming in the various specification and quantity sheets which form the basis on which the estimates are prepared and contracts fixed; also for estimates and contracts themselves. If closely kept up and indexed this book will be found most valuable.

**CERTIFICATE BOOK.**—This is a counterfoil book containing the usual certificates, with builders' receipt form on the back. On the counterfoil should be noted the distinctive number of the commission, with details, showing amount of contract, amount certified, and balance.

CONTRACT BOOK.

Contract No.  
Name.  
Description of Building.  
Builder's Name.  
Contract Date.

Accepted Tender.	Name of Contractor.	Certified Instalment.			Commission.		Remarks.
		Date.	No.	Amount.	Rate.	Amount.	

is considerable the particulars would occupy more space, thus the particulars of building a church or town hall would occupy more space than those pertaining to alterations in a private house.

EXAMPLE OF ENTRY.—No. 1.

CHURCH OF ST. ANDREW'S. Slumpton.

January 1st, 1898.—Called by request on the Rev. Robert Spalding, and received instructions to make plans and drawings for a new church, cost not to exceed £5,000; viewed the site, and made rough ground plan.

March 5th, 1898.—Submitted plans and drawings, met the committee, and arranged to make an alteration by the addition of a side chapel—and so on.

EXAMPLE.—No. 2.

W. JOHNSON. Klondyke House, Goldborough.

February 4th, 1898.—Received instructions from Mr. Johnson that he wished to construct a billiard room to Klondyke House, drawing

The Contract Book will be found useful for showing the state of the work as between the contractor and the client. It is posted up from the Instructions and Certificate Books—a page being given for each commission—it contains particulars of contract number, name, description, contractor's name, contract date, amount of accepted tender, instalments as per certificates, number, date, amount, commission. By adding the last columns it will be seen what the work has cost the client up to a given date.

(To be continued.)

**A New Chapel at Drumcondra.**—A new chapel for St. Patrick's Training College, which has been built from the designs of Mr. G. C. Ashlin, of Dublin, was opened recently. The chapel is built of red bricks with Portland stone dressings, and is 85ft. long by 28ft. broad, and 36ft. high. Mr. James Donovan, of Dublin, was the builder.



## Bricks and Mortar.

June 21st, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### Westwood Croft.

THE country house, of which a perspective view and ground plan are given in one of our inset plates, has been erected from the designs of Mr. Francis W. Bedford, A.R.I.B.A. We think our readers will agree that it forms a very pleasing example of domestic architecture. The house is all of local stone, and the roof was intended to be covered with stone slabs, but by the owner's wish red tiles were used instead. The parapet of the porch is carved with vine, grapes, birds, and butterflies; the knots under it are carved with different flowers, and on the sundial are carved wild roses and the motto "True as the Sun." All the principal rooms have oak floors and the hall is panelled to door height. Our illustration is from a pencil sketch by Mr. C. E. Mallows.

### Design for a Clock Tower.

THE design illustrated in our second plate was submitted by Mr. Henry Rose, of 3, Staple Inn, Holborn, W.C., in competition for the Lewisham Clock Tower, in commemoration of the Queen's Jubilee. The total cost of this tower was not to exceed £700. The site was in the High Street at the junction of the High Road. Mr. Rose's design was intended to be built in Portland and Red Mansfield stones. The statue was to be of cast lead, partly gilt, the door flush, faced with wrought iron studs, &c., special tiles for roof, and the wood-work painted green. The conditions of competition required the base not to exceed 8ft. square, and the design to include finger posts and ornamental lamps on the north-east and south sides at a height of not less than 12ft. from the ground. Neither iron nor brick, it was stated, would be considered suitable; stone, marble, or terra-cotta, or similar material, was to be used. The accepted design was by Mr. Arthur R. Gough.

### Southend Presbyterian Church.

THE design by Mr. John C. T. Murray, of 21, Old Queen Street, Westminster, which we illustrate in one of our centre plates, was recently submitted in a limited competition for the new church at the corner of Park Road and Park Terrace. The buildings comprise a church, seated for about 520, a hall to seat 230, vestry, session room, doreas room, and the necessary cloak room, lavatory, and scullery accommodation, and were estimated to cost about £8,700. Red brick and stone with green slate roofs were intended to be used throughout for the main buildings, tower and spire,

the floors were to be of solid wood blocks on concrete, the heating being by hot water supplied from chamber in the basement. The plan consists of nave and aisles with angle tower. The architectural treatment is Late English Gothic.

### The Reform of the Academy.

MR. W. J. LAIDLAY, writing to the "Morning Post," calls attention to the pressing need of a reform of the Royal Academy. Two Parliamentary inquiries of 1836 and 1863 have—he points out—after most careful and elaborate investigation of the facts, condemned the Academy, and have recommended reforms. The public ought to know (1) that it has been decided that the Academy needs reforming; (2) that the commissions have suggested so far back as 1863 the reforms they considered necessary; (3) that not a single reform has been adopted by the Academy, though in the Academy itself there is a considerable number of members committed to the policy of reform; and (4) that the excuse these academicians make for not carrying out the reforms they declared as outsiders to be necessary and desirable, is that though desirous of reforming the Academy they are powerless, the management being, as they assert, in the hands of the president and council. Mr. Laidley clearly forces upon one the conviction that (a) no further inquiry is needed, and (b) that the question is no longer whether the Academy needs reforming, but rather whether the Government will insist on the Academy honouring the reports of the Commissions of 1836 and 1863. A president of the Academy has stated that no outsider has made a disinterested complaint against the Academy, because the object of all the complainants was to have their work well hung. But some of the Academicians complained when they were outsiders, and now defend themselves by stating that they are powerless, as the whole power wielded by the Academy is vested in the President, Keeper, and eleven members of the Council. But as these are elected at short intervals, it is difficult to understand how the other fifty-seven members are so helplessly powerless. The allegation that because they spent some money on Burlington House and their Art Schools, which were condemned by the Commission of 1863 as "insufficient and inefficient," they may conduct the Art affairs of the nation as they choose is absurd, because the money so expended was made when they had free rooms in other Government buildings, and more than that has been derived by the exhibition—in part, at any rate—of the works of outsiders.

### Some suggested Reforms.

MR. JAMES STANLEY LITTLE writes commending Mr. Laidley's letter and suggests the following reforms: "(1) Academicians should be elected for a limited period, not necessarily annually. Possibly a term of five years might meet the case. They should not be elected from their own body, but by the suffrages of the whole body of artists. (2) The works of Academicians should be subjected to selection, and the Selecting Jury should be a body in which critics, amateurs, and connoisseurs were represented. (3) No artist, Academician, or outsider should be allowed to submit more than three works to the jury. (4) The number of pictures accepted should be reduced. The present system of hanging and cramming the pictures on the walls, so that they make a pattern much like a piece of nursery patchwork, makes it impossible for a real work of Art to assert itself, while it is obvious that it is quite impossible for any country to produce in one year upwards of a thousand pictures of sufficient value to merit inclusion in what poses as being, and ought to be, a national exhibition. (5) The snobbish pre-eminence of pictures in contradistinction to other expressions of the artistic temperament is inimical to the true interests of Art. The so-called minor, or applied arts, are of equal, if not of greater importance to the national welfare from an æsthetic, and certainly from a commercial and utilitarian point of

view, than pictures. These branches of art should be represented at Burlington House." We fully endorse this last suggested reform, which we have constantly been striving to obtain, for it is a scandal that Architecture, to which the other arts owe everything, is so ignored, and even treated with contempt. In the House of Lords, on Monday, Lord Stanley of Alderley addressed to the Government various questions on the subject of reform. We shall have something further to say next week with regard to the matter.

### The Hanging of Pictures.

IN connection with the suggested reform of the Academy, Mr. Walter Severn, of the Dudley Gallery, brings to notice the need for a more expeditious and simple method of arranging and securing the pictures on the walls. Mr. Severn has found out a plan which is used at the Dudley Gallery, where 400 pictures can be hung in two days with only one carpenter to help the hangers. The plan has also been adopted largely on the Continent. It consists in attaching small wood battens to the wall, on which the pictures hang. The upper and lower line are first arranged on two of the battens, and the pictures can be shifted and changed any number of times along these battens. The plan is most simple, and allows of such easy alteration of a picture if the position is not suitable. The Academy, with its wooden walls, would be specially suitable for this system, which would be a great improvement on the present system of fixing each picture to the wall with several plates and several screws, the alteration, if even one picture, involving the laborious unscrewing of a whole group.

### The Potter as Historian.

ON the mantelpieces of many cottage homes may be found representations in clay of subjects which the inmates admire and revere, as their ancestors did before them; but these ceramic portraits are crude, and not very high art, and mainly deal with military and naval personages. Mr. Henry Willett, of Brighton, has an idea that the history of the country may be traced in its homely pottery, and to support his somewhat fantastic theory, he has been ransacking English cottage homes for several years, and the result of his labours is being exhibited at the Bethnal Green Branch of the South Kensington Museum in the shape of 1,715 pieces of potters' work. These are not to be regarded as examples of ceramic art, but rather as carrying out Mr. Willett's idea. Conspicuous in this large collection are two busts of Josiah Wedgwood, one of which is in Parian ware after Flaxman's medallion in Stoke Church, and is some 21in. high; the other is in the form of a medallion, and measures 4½in. by 4in. There are several specimens of the work of George Tinworth in terracotta; one is a medallion portrait of himself, and another represents his father's shop. His father was a wheelwright, and the plaque shows George Tinworth busily engaged in modelling in clay, instead of attending to his father's business. There are several earthenware plaques representing the potter's art in various countries.

### Architecture in Clay.

AS might be expected, the kind of potter whose work Mr. Willett has collected, has not made very many attempts at reproducing models of buildings, and the architectural section of this collection would not form anything like a record of the architecture of the past. Whenever the potter has ventured into this department he seems to have contented himself with small models of cottages. There is on view a pastille burner in Delft ware in the form of a house, printed in blue, and inscribed "In De Rokende Moor." This is a modern Dutch work, and is about 6in. high. Other pastille burners in the shape of thatched and half-timber cottages, a lock-up, and a bungalow, have been made with a certain amount of finish. There is a gaudily coloured model of a church shown, which stands about 9in. high, and was presumably made in 1790.



The best representation of the potter's art exhibited is a coloured model of Westminster Abbey, 7in. high. There are various plates, cups and saucers, jugs, &c., with views of well-known buildings printed upon them, very much after the style of the china presents bought at watering places.

### Preserving Natural Beauties.

WE are glad to see that the Richmond Town Council are not indifferent to the natural beauties of their beautiful town. The Office of Woods and Forests have proposed to fill in the little stream known as the Ha-Ha, which flows between the Old Deer Park and the Thames sidewalk at Richmond. What particular advantage is expected to be gained thereby does not appear. The town council very properly objected, and at their meeting last week they unanimously agreed that the proposal, if carried out, would mean the destruction of one of the most beautiful scenic features in Richmond; they accordingly appointed a deputation to place their views before the authorities of the Office of Woods and Forests who have charge of the stream.

### Glass Makers and their Work.

WE noticed a few weeks ago, giving it no more than its due, a thoroughly capable, as well as enjoyable, book on the "Romance of Glass Making," and having had occasion to refer to the chapter devoted to Venice we find our first impressions confirmed, and would advise everyone who wishes to know just as much as he need about glass to give it a place on his shelves. If it were likely to have the evil effect of making him an indiscriminate collector of things merely curious, we should not recommend it so heartily; but quite the reverse is the fact, for, judged by the things they display, there are really deplorable exhibits at the British Museum, and at South Kensington, beyond doubt, a vast number. Probably most people have noticed that the quarrel with the glass-factor generally begins at the points of juncture between the part that is blown and the part or parts that must be attached to it; as, for instance, between the bowl and the handles. Out of many one sees it would be difficult to select more than a few in which this joining of parts has been effected quite satisfactorily.

### British Archaeological Association.

THE concluding meeting of the session was held at 32, Sackville Street, on June 7th. Mr. Thomas Blaskill, hon. treasurer, in the chair.—Mr. Hornblower exhibited a fine Roman cameo dug up in Worship Street at a depth of 18ft., also some Flemish and other pottery found in Curtain Road, Shoreditch, at a depth of 8ft., in excavating for foundations of a new factory.—Mrs. Day exhibited an original description of the "First aerial voyage in England," by Vincent Lemardi, in 1784.—Mrs. Pears contributed some notes upon a curious discovery recently made on the Scarisbrick Estate in Martin Mere, between Southport and Rufford. This consisted of a canoe or "dug-out." The canoe is 16ft. 6in. over all, the greatest breadth being 4ft., the inside width 3ft. 9in.; it is made out of the trunk of an oak tree. The wood having warped at the stern, a boomerang-shaped piece of wood has been used to hold it together with wooden pegs. This remedy apparently failed, and a sheet of lead about the thickness of a sixpence was placed over the warp and attached with pegs or nails, which from the analysis of the dust from the pegholes appear to have been of iron. The vessel was discovered whilst ploughing, and the obstacle to the plough was thought at first to have been a stump, but on carefully digging away the soil the canoe was unearthed. It was lying slightly on one side and tilted upwards. The position in which it was found was about 200 yards from the old bank of the lake.—Mrs. Collier read a paper, "On the Châteaux and Domestic Dwellings of France in Mediæval Times," which was profusely illustrated by drawings, photographs, and engravings.—A paper, "On Ancient Customs," by Mr. Andrew Oliver, was read by the author; and a short paper contributed by Dr. Russell

Forbes in continuation of his account of the Discoveries in the Forum at Rome was read by Mr. Patrick, hon. secretary.

### Fire Tests.

THE Testing Station of the British Fire Prevention Committee was again the scene of an important series of investigations last Thursday, which were attended by Sir John Taylor, K.C.B. (H.M. Office of Works), and Mr. Alexander Siemens on behalf of the Council, Mr. H. H. Statham, for the Members' Testing Sub-Committee, Mr. Edwin O. Sachs (chairman), and the members of the executive. The strictly limited number of visitors was this time chiefly representative of the London County Council, Mr. Waterlow and Mr. Yates, chairmen of the Building Act and the Theatres Committees, attending with Mr. Riley, the architect, with several officials from his department, Lieut. Sladen, of the Metropolitan Fire Brigade and a number of district surveyors. The leading Government departments, with some of the great insurance offices, were again represented. The tests comprised:—(1) A two and a half hours test with a concrete floor, by the Columbian Fire-proofing Company, U.S.A., being the severest test so far applied by the committee to any floor. (2) A half hour test with a skylight of Prisms by the British Luxfer Prism Syndicate. (3) A three-quarter of an hour test with plain electro-glazed casements by the same makers. (4) An hour (comparative) test with an iron door, and an armoured wood door. The reports describing the tests will be issued by the executive in due course.

### Threatened Vandalism at Croydon.

CROYDON is at present very much interested in the question of removing the old Whitgift Hospital. It is rumoured that this piece of vandalism is to be carried out in order to make way for the widening of George Street. The building, which is of great historical interest in the town, stands at the junction of four of the most important roads, and it has been suggested that the needs of traffic would be served quite as well, if not better, by constructing a new road behind the almshouse buildings, leading from George Street into North End. The original building of the hospital is a quadrangular erection of brick and stone in Elizabethan style, and it was renovated some years ago. The charity was founded in Queen Elizabeth's time by Archbishop Whitgift. The men almoners, who are selected by the Archbishop of Canterbury, receive £40 a year, and the women £30, together with medical and nursing attendance, gas and partial firing. According to the constitution of the hospital, the almoners must be chosen either from the household of the archbishop, the Croydon or Lambeth parishes, or from the parishes in Kent whose benefices are annexed to the See of Canterbury. It is to be hoped that previous to destroying such an interesting and historical building, all possible alternatives will be carefully considered.

### An Unfounded Rumour.

LAST week we warned our readers against attaching undue weight to the rumour that "more scandals" were to be revealed in connection with the Works Department of the London Council. According to the "Daily Chronicle" of last Friday the facts of the case are as follows:—"There was an adverse balance of £55,000 against the department, but under the present management this has been reduced to £45,000, in addition to which there is a balance on jobbing works of £8,000 in favour of the department. The two instances on which the authors of the rumours rely have been known to the Council for some time, although the certified figures have only just been presented. The story has its foundation in anticipation of figures being presented to the Council showing on works commenced under the late management to the amount of £50,000 a loss of nearly £5,000, whilst, on the other hand, upon works commenced under the present management to the tune of £12,500 there is a saving of £555."

### A Cretan Exploration Fund.

MESSRS. ARTHUR J. EVANS and George Hogarth announce that a Cretan Exploration Fund is being formed under their direction, and in co-operation with the British School at Athens, in order to carry out a series of comprehensive excavations. His Royal Highness Prince George of Greece, High Commissioner of the Powers in Crete, has consented to become patron of the fund. By his support sites for excavation have been secured at Knosos, which was the city of Minos and the traditional centre of the ancient sea power of Crete, at Prasos, where it is hoped to discover the chief stronghold of the original Eteocretan race, and at Lyttos, regarded as the model Dorian city. The Cave of Psychro, on Mount Dikta, is also included in the present plan; and the investigation of some prehistoric sites on the South-east Coast of Crete promises to throw a valuable light on the early intercourse with Egypt. For these explorations £5,000 at least are required. It is intended to enrich the National Cretan Museum, adapted from the old Venetian Armoury at Candia, with the chief results of the excavation. Mr. George Macmillan is the treasurer to the fund, and subscriptions may be paid to him at St. Martin's Street, or into the account of "The Cretan Exploration Fund," at Messrs. Roberts, Lubbock and Co., Lombard Street, E.C.

A GENERAL MEETING of the Killarney National Trust for Places of Historic Interest or Natural Beauty will be held to-morrow afternoon at 4.30 p.m. at Grosvenor House, by kind permission of the Duke of Westminster, the president, to consider the proposal to acquire the Muckross Estate, Killarney, as a public park and international tourist resort, after the manner of the Yellowstone Park in the United States. This action has been caused by the rumour that the estate was likely to be sold to a commercial undertaking, to the detriment of this beautiful and world-renowned spot.

### Mr. Watts' Gallery of Heroes.

DR. TRISTRAM, Chancellor of the Diocese of London, delivered judgment last Friday in reference to the application for a faculty to carry out certain alterations at the Church of St. Botolph, Aldersgate. He explained that it would be to the interest of the parish to have his decision at once on the part of the faculty relating to the proposed covered way. It will be remembered that the vicar, the Rev. Henry Reginald Gamble, and the churchwardens of the parish applied for the faculty authorising them to make certain improvements in the churchyard as well as in the church. A faculty was granted some years ago, under which the churchyard was laid out as a garden open to the public. Additional ground has since been added at a cost of £6,000, provided by public subscription. To this sum the Kyrle Society and the Metropolitan Public Gardens Association contributed more than a third. A wall will have to be erected separating the churchyard from the street, and Mr. G. F. Watts, R.A., has generously offered to decorate this wall with frescoes delineating acts of heroism in humble life. For the purpose of protecting the paintings from exposure to the atmosphere, he proposes to construct, at his own cost, a covered way, giving free access from the churchyard and grounds. For this covered way the faculty is sought. Dr. Tristram explained that the court was of the opinion that by the construction of the covered way the whole of the churchyard would still remain as an open space for the exercise and recreation of the inhabitants, and the Court therefore authorised the proposed construction. The solicitors for the Public Gardens Association and for the Kyrle Society formally gave notice of their right to appeal. To the remainder of the faculty a decision has not yet been given; this latter portion deals with an even more interesting point, namely, the suitability or otherwise of the panels painted by Mr. W. Sigismund Goetze, and offered by him as a gift to the church.



## LONDON COUNTY COUNCIL DOINGS.

THE members of the Council for the administrative County of London reassembled on Tuesday last week, after the Whitsuntide recess, at the County Hall, Spring Gardens, the chairman, Lord Welby, presiding. Among the several subjects dealt with was the

### Holborn to Strand Improvement.

The Improvements Committee recommended that a portion of the site of Reid's Brewery, bounded by Clerkenwell Road, Gray's Inn Road, Portpool Lane, and Leather Lane, should be acquired for £200,000 under Part III. of the Housing of the Working Classes Act, and that application should be made to Parliament in the session of 1900 to enable the Council to acquire compulsorily other lands adjoining this site. It is proposed to rehouse on the complete site 3000 persons of those who will be displaced by the Holborn to the Strand and Clare Market improvement schemes. The rest of the people to be displaced will be accommodated on the Millbank site.—Mr. Beachcroft moved as an amendment that the following words should be added to the recommendation:—"And that the Parliamentary Committee be instructed to take steps with a view to the Council being given powers to sell or let land acquired under Part III. of the Housing of the Working Classes Act." It was contended that this was a matter which should first be considered by the Housing Committee, and the amendment was, on a division, rejected by sixty-six votes to thirty-eight. The recommendation of the committee was adopted. It was stated that a

### Chief Assistant Architect

was required, and, on the recommendation of the Establishment Committee, it was agreed to issue advertisements inviting applications for the appointment at a salary of £800 a year.—On the motion of Mr. Baker, the following resolution concerning

### Underground Tramways,

was adopted:—"That it be referred to the Highways Committee to investigate and report to the Council as to the practicability of constructing a shallow underground electric tramway from Westminster (via Parliament Street, Strand, Fleet Street and Cheapside) to the Bank, thence under Moorgate Street to the terminus of the North Metropolitan Tramways Company at Finsbury Pavement, on a similar principle to those laid under Andrassy Strasse, Budapest, and in Boston, U.S.A., provision being made beside the tram lines for suitable subways to contain gas and water mains, electric light mains, telephone wires, &c."

### An Art and History Committee,

The following motion was proposed by Mr. Granville-Smith, and carried by a small majority:—"That it be referred to the General Purposes Committee to consider and report as to the desirability of appointing a new Standing Committee, to be called the "Art and History Committee," to which all questions of an artistic, archaeological, or historical character should be referred, so that the artistic claims or needs of the streets, buildings, monuments, antiquities, statues, and works of art of the Metropolis may be fully considered."

### Miscellaneous.

It was agreed, on the recommendation of the Finance Committee, to lend the St. Giles District Board £5,000 for the purchase of offices, stoneyard, &c.; the Wandsworth District Board £10,000 for a contribution towards the provision of open space, and £1,000 for wood paving works; the Clerkenwell Vestry £2,677 for wood and granite paving works; the Battersea Vestry £30,000 for the purchase of two wharves, and £12,555 for wood paving works; the Holborn Guardians £5,000 for draining works at the infirmary; and the London School Board £150,000 for new schools. In connection with the Rotherhithe Tunnel rehousing question, the Bridges Com-

mittee recommended, and it was agreed, that the estimate of £4,900 submitted by the Finance Committee for the purchase of certain land in connection with the rehousing of persons of the working classes who will be displaced by the carrying out of the Rotherhithe Tunnel scheme, be approved, and that they be authorised to purchase the land in question, in accordance with the powers given by Part III. of the Housing of the Working Classes Act, 1890. The plans of proposed new theatres at Whitechapel and Finsbury Park were approved. The Water Committee presented a long report on the water supply of the metropolis, and on their recommendation it was agreed:—"That the Standing Orders be suspended so far as they would affect proposals for legislation in the session of 1900, dealing with the Metropolitan Water Supply, and that the Water Committee be authorised, if they deem it advisable, notwithstanding the Standing Orders, to recommend application to Parliament on this subject at any time not later than November 14, 1899."

## Keystones.

**The New Presbyterian College at Cambridge** is to cost £28,000, and will be opened on October 17th next.

**The Leeds Shambles** are to be demolished, after having long disfigured the principal thoroughfare of Leeds.

**A new Auction Mart** which has been erected at Maud, at a cost of nearly £2,000, was opened last Thursday.

**Corporation Dwellings for Glasgow Workmen** are to be erected at Haghill, the tenders for which amount to £14,399.

**A Stained Glass Window** has been erected in Spring Congregational Church, Grimsby, in memory of the late Mr. John Winttingham.

**A Permanent Lighthouse** is to be constructed on the River St. Lawrence, Canada, in place of the floating lightships, formerly used as aids to navigation.

**A New Masonic Lodge** for the convenience of professors of the arts of sculpture and painting was consecrated last week at the Freemason's Hall, London, W.C.

**Two Stained-glass Windows** have just been placed in St. Matthew's Church, Newcastle-on-Tyne, which are the work of Mr. C. J. Baguley, of Newcastle-on-Tyne.

**New Church for Balsall Heath.**—The foundation stone of St. Barnabas Church, Ladypool Road, Balsall Heath, was laid last Wednesday afternoon by Lady Holder.

**The Electrical Engineers' Conference** took place last Thursday evening at the Natural History Museum, South Kensington. Over 2000 guests were present.

**The Corner Stone** of the temporary church and mission buildings of the new district of St. Alban's, Stamford Hill, was laid by the Bishop of Islington last Saturday afternoon.

**A Darwin Statue**, which is an excellent likeness, by Mr. Hope Pinker, was unveiled at the Oxford University Museum last Wednesday afternoon by Mr. Edward B. Poulton, M.A.

**A New Section of the Isle of Man Electric Tramway** was opened last Saturday morning. It extends from Douglas to Ramsey. The line is double throughout, and is on the overhead system.

**New Sunday Schools** are being erected at Boston, Linc., in connection with the Zion Chapel, by Mr. Bradley, of Langrick, from plans by Mr. Talbot, of Batley. The cost will be about £400.

**The Sheffield Society of Architects and Surveyors**, in accordance with a practice that has existed for several years, obtained for exhibition purposes the prize drawings in the annual examinations of the Royal Institute of British Architects. These were shown in the large committee room of the Montgomery Hall last week.

**A New Primitive Methodist Church and Schools** are being erected at Stapleford, Notts, at a cost of over £1,600. Mr. T. Harper, of Hyson Green, is the architect, and Mr. C. Moul, of Stapleford, the contractor.

**Loughborough Parish Church Bells.**—Messrs. J. Taylor and Co., bell founders, of Loughborough, have recently recast, at their own expense—stated at about £500—the fine peal of bells at All Saints Parish Church.

**New Disinfectant Station at Bury.**—At a meeting of the Bury St. Edmunds Town Council last week a tender for the erection of a disinfectant station at the Isolation Hospital, at an estimated cost of £184 10s., was accepted.

**A New Chapel and Schools** are to be erected at Barnsley from plans by Messrs. Senior and Clegg, at a cost of about £4,000. The buildings are to be in Pitt Street West. The foundation-stone was laid on the 15th inst.

**An Episcopal Church and Hall** are to be erected at Tayport, the first-named to seat 200, and the second 130. The walls are to be of dark-red brick, while the roofs will be covered with green slates. Mr. T. Martin Cappon is the architect.

**Extension of City Goods Station.**—The London and North-Western Railway Company will shortly open an extension of their goods station at Broad Street. The new warehouse consists of six floors, with a superficial area of 135,000 square feet. The storage floors have been erected in sections, so that each can be completely isolated from the other portions of the building.

**Towards a New Church, School, and Parsonage** at Chorlton-cum-Hardy the Earl of Egerton has given £1,000 and a valuable site. Plans have been prepared for the new church, which is to be dedicated to St. Werburgh, and when the sanction of the Ecclesiastical Commissioners has been obtained the building of the chancel will be commenced, Lord Egerton having lent the congregation an iron church for temporary use as a nave.

**A Memorial Tablet to Lieut.-Colonel Cairncross**, which is being executed by Messrs. D. Carnegie and Son, sculptors, of Ladywell Place, Dundee, is to be erected in St. Paul's Episcopal Church. The tablet consists of a brass plate mounted on a white polished Sicilian marble slab. The brass is 3ft. 4in. high by 2ft. 3in. broad, and the inscription is encircled by an engraving of Gothic design. The marble slab on which the tablet is to be placed is 4ft. 4in. high and 3ft. broad.

**A Memorial Window in the Duke of York's School**, erected by old boys and friends of the school in memory of former pupils who have either been killed in battle or who have died on active service, was unveiled by the Duke of Cambridge on the 18th inst. The window was designed by Mr. Charles Kemp, and in the centre is a picture of the Crucifixion, with the Virgin and Child underneath. On the right and left of the window are the figures of St. Michael and St. George.

**New Buildings at St. John's Hospital, Lewisham.**—The foundation stones of new buildings for the Nursing Sisters of St. John the Divine were laid last Wednesday. The buildings will provide accommodation for the reception of thirty-three additional patients, and will be of red brick with Monk's Park stone dressings and tiled roofs. The architects are Messrs. Barnes - Williams, Ford, and Griffin, and the contract has been let to Mr. H. L. Holloway at £5,370.

**Cumberland and Westmoreland Antiquarian and Archaeological Society.**—The first meeting of this society for this year will be held on Thursday and Friday, June 29th and 30th, at the Keswick Hotel, Keswick. On the 29th inst. the members will proceed to the Stone Circle, 1½ miles distant from Keswick Station, and from thence to St. Kentigern's, Crosthwaite. In the evening there will be a meeting for the transaction of business, election of members, &c. On the 30th inst. visits will be paid to Orthwaite Hall and Camp, Whitefield Cottage, Snittlegath, Caermote, and Peel Wyke, and the party will disperse at Bassenthwaite Station.



## Professional Practice.

**Birkenhead.**—The opening of a new high altar and reredos was performed at the Church of Our Lady recently. The new high altar is executed chiefly in Caen stone, and is approached by steps of Walplaque marble. The altar-stone is supported on four columns of Labrador granite, between which are carved panels containing emblems of the Blessed Sacrament. The super-altars are of marble. The tabernacle, which has beautifully engraved and jewelled doors, and the throne, are surmounted by a great pinnacled and crocketed canopy rising to a height of 30ft. The reredos, which is placed against the three walls of the apse, is divided into two parts, the lower forming a dado to set off the altar in front and containing on each side an ambry and a piscina, whilst the angels are accentuated by carved shafts carried up into the second and higher part of the reredos, and supporting niches which contain stone images of the four evangelists. The whole of the work has been designed by the architects of the church, Messrs. Pugin and Pugin, of London, and Paradise Street, Liverpool. The structural work has been carried out by Mr. Fogarty, of Old Swan, Liverpool, the new altar, by Messrs. Boulton and Sons, of Cheltenham, whilst the painted panels—three of which only have been done—are from the studios of Messrs. Hardman and Co., Birmingham.

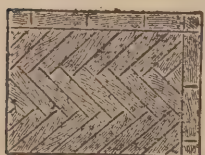
**Birmingham.**—The foundation stone of the new church of St. Barnabas, in Ladypool Road, was laid last Wednesday by Lady Holder. The plans, prepared by Mr. T. Frederick Proud, the architect, provide at present only for the erection of a chancel, with organ-chamber and vestries, but when complete the church will consist of a wide nave, aisles, transepts, and morning chapel. The chancel will be 24ft wide, with apsidal end, the morning chapel and organ-chamber being separated by richly-moulded arches. At the corner of Ladypool and Clifton Roads a tower will be erected, under which is the main entrance. A projecting octagonal baptistry adjoins, and above rises the end of the nave with a group of lofty traceried windows. The south side shows a range of traceried clerestory windows and bold buttresses. The style is late Perpendicular, and the whole building both inside and outside will be constructed of red brick, with moulded terra-cotta arches and tracery, and covered by a bold open timber roof and

green slates. The church will hold 900 people, and the cost, exclusive of the tower, will be £6,000. The builders are Messrs. E. Giles and Son, of Camp Hill.

**Sheffield.**—The Sheffield Athenæum in George Street is to be erected on the site of the old building, which is now in course of demolition. The new building will have a frontage to George Street of 125ft. The building will be of brick with stone dressings, and mullion and casement windows. The entrance will be in the centre of the façade. There is to be an outer porch 9ft. square, with porters' offices on either side, leading into an inner hall, 15ft. wide, with staircase beyond and a handsome staircase window. To the right will be a large reading-room and morning-room, and to the left there will be ladies' reading and dining-rooms. A corridor will run to the right of the entrance hall to a waiting-room, a library, and a committee or private dining-room. The left corridor will lead to the lavatories, &c. On the first floor there will be a suite of apartments. The staircase will open into a wide corridor, at one end being the dining-room, 40ft. by 28ft., and at the other end the billiard-room, 40ft. by 30ft. There will also be a smoke-room, 40ft. by 17ft., a card and chess-room, 24ft. by 17ft., cloak-rooms, lavatories, and steward's office and service room. The upper floor and the floor in the roof are, with the exception of two dressing-rooms for members, devoted entirely to the kitchens, larders, laundry, matron's and servants' rooms. Messrs. Flockton, Gibbs and Flockton are the architects.

**Staffordshire.**—The consecration of a new church at Hawkesyard Priory took place last Monday week. The style of the new church is late Perpendicular Gothic, and, built with red bricks with dressings of Penkridge stone, the external appearance of the building is simple enough. The west front is rather more ornate than the rest. The main entrance is deeply recessed and moulded, and above it is a fine traceried seven-light window. In the gable above is a niche in which stands, underneath a rich canopy, a large statue of St. Thomas Aquinas, to whom the church is dedicated. This gable is flanked, like the one at the east end, by two crocketed pinnacles. To the east end is the sacristy, over a portion of which is the organ chamber reached by an external octagonal turret containing a bell. Inside the proportions are pleasing. There are nine bays, marked out by stone shafts coming about half-way down the walls. The

fifteen clerestory windows occupy nearly every bay on either side of the church. The roof is of open timber. The floor space of the church is divided into three portions. The first four bays from the main west entrance are given up to the nave. This part is paved with plain red tiles and wood blocks. Beyond this is the choir, extending the length of three bays and raised three steps. The floor is laid with tiles. Three steps more lead up to the sanctuary, which occupies the space of the remaining two bays. The floor is of mosaics of an elaborate design. In the centre are the arms of the Order, with the monogram of St. Dominic on the right, and on the left that of St. Thomas Aquinas. The high altar and reredos form a striking feature. The altar stands forward, allowing of a flight of steps at the back up to the throne. The low super-altar, in front of which stands the rich metal tabernacle by Hardman, has its six panels filled with mosaics. When completed, the reredos will rise up to the roof timber; at present only some two-thirds of it are finished. The lower portion, to the top of the super-altar, is of plain masonry, relieved by a gabled Piscina and Ambry. Above these, in the centre, are the throne and canopy, rich with delicate tracery and carving. Right and left of these rise two tiers of niches, with delicately worked shafts. When these niches are filled with statues and the upper part of the reredos containing the rood and statues of Our Lady, St. John, and other attendant figures of angels and saints, is completed, the whole composition will be striking, and will in a slight degree recall the beautiful old examples of reredos to be seen at Winchester, Christ Church, and All Souls', Oxford. The organ case, designed by Wren and originally erected at Eton, is a beautiful example of the Renaissance style. On the right of the west entrance is a richly moulded arch, opening into the chantry chapel. The chapel is richly panelled in stone, and is vaulted in fair tracery, also elaborately executed in stone; and the windows are filled with beautiful stained glass, designed by Hardman. The Lady Chapel is on the opposite side and occupies the space of two bays. The roof is panelled in wood, and the altar and reredos are of stone. In the latter is a group containing the seated figure of the Virgin and Child, and the kneeling figures of St. Dominic and St. Catharine of Siena. On the other side are carved representations of some of the mysteries of the rosary. Mr. Edward Goldie is the architect. An article on Mr. Goldie and his work appeared in our issue of December 14, 1898.



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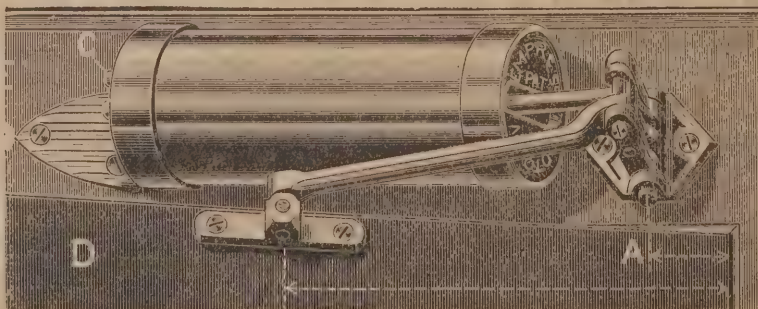
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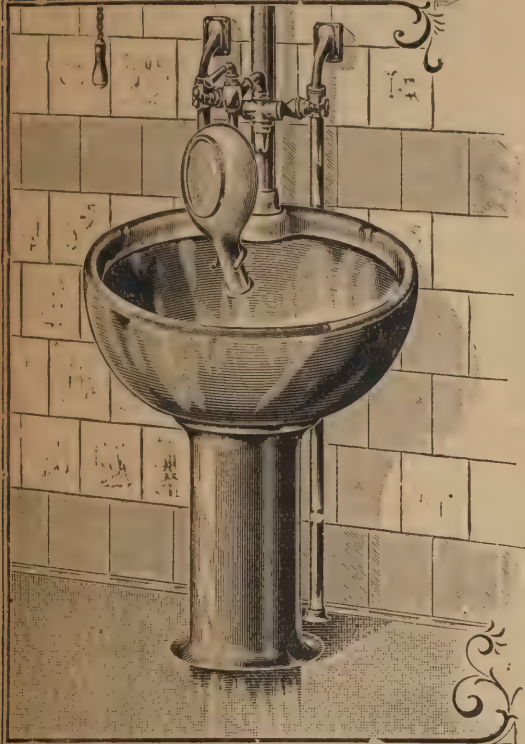
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## New Companies.

### Dalbeattie Quarries, Ltd.

This company was registered with a capital of £4,000 in £1 shares with the object of carrying on the business of quarrymasters and brickmakers, &c. The registered office is at 129, St. Vincent Street, Glasgow.

### George Bence and Sons, Ltd.

This company was registered on June 8 by Jordan and Sons, Ltd., of 120, Chancery Lane, London, W.C., with a capital of £1,000 in £1 shares, to acquire the business carried on by G. Bence, as George Bence and Sons, at 43, Fairview Road, Cheltenham, and to carry on the business of hardware and building material merchants, &c. Registered without articles of association. Registered office: 43, Fairview Road, Cheltenham.

### South Berks Brick, Tile, and Pottery Company, Limited.

This company was registered on May 20th by Jordan and Sons, Limited, 120, Chancery Lane, W.C., with a capital of £50,000 in £1 shares, to adopt an agreement made between John Rankin of the one part and this company of the other part for the acquisition as a going concern of the business of brick and tile manufacturers as now carried on by the Shaw Kilns Company, Limited, to develop and extend the same, and to carry on business as manufacturers of bricks, tiles, pipes, pottery, earthenware, china, terra-cotta, and ceramic ware of all kinds; as lime burners, builders and contractors, decorators, merchants and dealers in stone, sand, lime, bricks, timber, hardware, &c.; to construct and maintain rail and tram roads; to develop the resources of land by clearing, draining, planting, farming,

or building thereon; to acquire and turn to account any patents, patent rights, and inventions; as producers and suppliers of gas and electricity, hotel keepers, restaurant proprietors; to construct and maintain telegraphs and telephones, &c. The first shareholders (each one share) are Messrs. F. S. Watts, M. A. Boulton, J. W. Spence, H. H. Osborne, J. Cope, T. C. Johns, and H. C. Bazett. The first directors—of whom there shall not be less than three nor more than seven—are J. Rankin, W. and T. McIlroy, and J. Winter. Qualification, £50. Remuneration, £175 per annum, divisible.

### Hill Park Estate Company, Ltd.

This company was registered on May 30th by Ashurst and Co., of 17, Throgmorton Avenue, London, E.C., with a capital of £15,000 in £1 shares. Its object is to enter into an agreement with W. Scott and J. M. Winter for the acquisition of the Westerham, Tatsfield, and Cudham Estates, in the counties of Kent and Surrey, and to carry on the business of builders, contractors, decorators, brick and stone merchants, &c. The first directors—to number not less than two nor more than five—are W. Scott and J. M. Winter (life directors). Remuneration as fixed by the company. Registered office: 21, Grainger Street West, Newcastle-on-Tyne.

### Crypt Discovered under Crosby Hall.

For several months the demolition of buildings round about Crosby Hall—the palace of King Edward IV., in Bishopsgate Street—has been going on, and during the operations, some pointed arches, which were probably portions of the sub-structure or cellars of the southern wing of Crosby Hall, long ago destroyed, were discovered. The arches are of fine masonry, and seem to be as strong as when the foundations of the building were laid centuries ago.

## COMING EVENTS.

### Wednesday, June 21.

SOCIETY OF ARTS.—Conversazione.

BUILDERS' FOREMEN AND CLERKS OF WORKS' INSTITUTION.—Ordinary meeting of the Members. 8 p.m.

### Thursday, June 22.

SOCIETY OF ANTIQUARIES.—8.30 p.m.

### Saturday, June 24.

PEOPLE'S PALACE ARCHITECTURAL SOCIETY.—M. Posenheim on "Defects in Plumbing Work." 7.30.

### Monday, June 26.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Ad on the Presentation of the Royal Gold Medal.

### Wednesday, June 28.

SOCIETY OF ARTS.—Annual General Meeting.

## CURRENT PRICES.

### FORAGE.

		£ s. d.	£ s. d.
Hay, best	per load	3 0 0	3 10
Sainfoin mixture	do.	3 0 0	3 10
Clover, best	do.	3 10 0	4 0
Beans	per qr.	1 6 0	1 10
Straw	per load	1 4 0	1 10

### OILS AND PAINTS.

Castor, French	per cwt.	1 4 6	1 5
Colza, English	per cwt.	1 3 8	1 4
Copperas	per ton	2 0 0	2 0
Lard	per cwt.	1 8 9	1 9
Linseed	per cwt.	1 0 6	1 0
Neatsfoot	per gal.	0 0 5 5/8	5 8/11
Petroleum, American	per gal.	0 0 5 1/8	5 8/11
Do., Russian	per gal.	0 0 5 1/8	5 8/11
Pitch	per barrel	0 8 0	0 8
Tallow, Town	per cwt.	1 4 3	1 4
Tar, Stockholm	per barrel	1 6 6	1 6
Turpentine	per cwt.	1 14 4	1 14
Glue	per cwt.	1 14 0	2 18
Lead, white, ground, carbonate	per cwt.	0 19 0	0 19
Do., red	per cwt.	0 17 0	0 17
Soda crystals	per ton	2 15 0	2 15
Shellac, orange	per cwt.	3 8 6	3 8
Do., sticklac	do.	2 2 6	2 2
Pumice stone	do.	0 8 9	0 8

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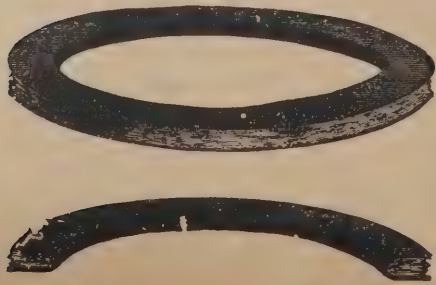
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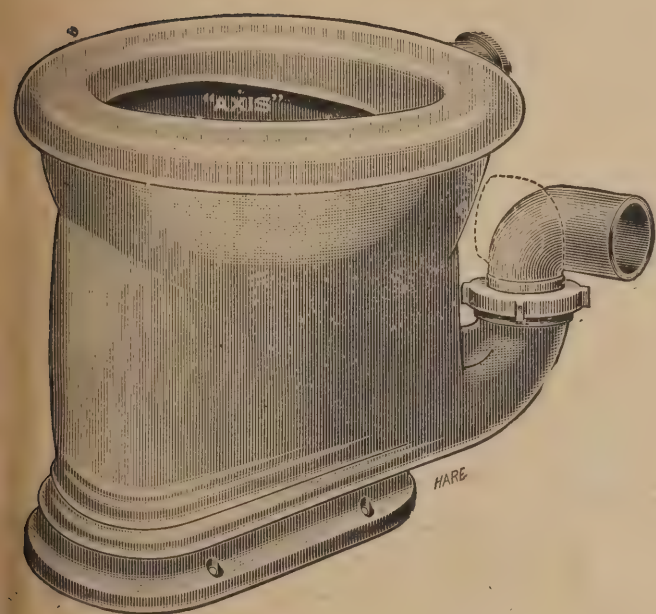
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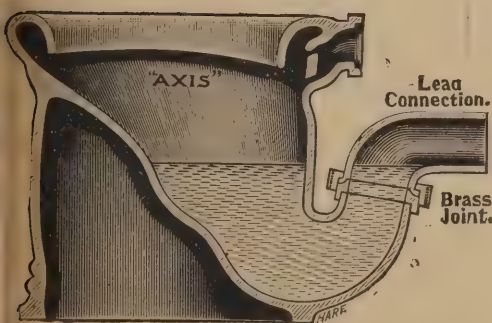
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Deals, Archangel 2nd & 1st per P. Std.	9 0 0	18 10 0
Do. do. 4th & 3rd. do.	12 0 0	12 5 0
Do. do. unsorted do.	7 5 0	8 5 0
Do. Riga ... do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow do.	10 10 0	14 15 0
Do. do. 2nd do.	10 10 0	12 0 0
Do. do. Unsorted do.	8 0 0	11 5 0
Do. do. White do.	7 15 0	9 15 0

	£ s. d.	£ s. d.
Deals, Swedish ... per P. Std.	10 15 0	15 15 0
Do. White Sea ... do.	12 5 0	—
Do. Quebec Pine, 1st ... do.	18 0 0	19 0 0
Do. do. 2nd do.	12 0 0	—
Do. do. 3rd & 2nd do.	7 15 0	9 15 0
Do. Canadian Spruce, 1st do.	9 0 0	10 5 0
Do. do. 3rd & 2nd do.	6 5 0	7 15 0
Do. New Brunswick do.	7 5 0	8 0 0
Battens, all kinds ... do.	6 15 0	9 5 0
Flooring Boards, 1 in. prepared, 1st ... per square	0 12 0	—
Do. 2nd ... do.	0 9 6	0 11 3
Do. 3rd & 2nd ... do.	0 9 6	—

HARD WOODS.

Ash, Quebec ... per load	3 17 6	4 10 0
Birch, Quebec ... do.	3 12 6	3 17 6
Box, Turkey ... per ton	7 0 0	15 0 0
Cedar, lin, Cuba ... per ft. sup.	0 0 4	0 0 4 1/2
Do. Honduras ... do.	0 0 3 1/2	—
Do. Tobasco ... do.	0 0 4 3/16	—
Elm, Quebec ... per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras ... per ft. sup.	0 0 4 7/8	—
Do. African ... do.	0 0 3	0 0 4
Do. St. Domingo ... do.	0 0 4 23/32 - 6 23/32	—
Do. Tobasco ... do.	0 0 4 13/16	—
Oak, Dantzic and Memel ... per load	3 5 0	3 5 0
Do. Quebec ... do.	4 12 6	5 0 0
Teak, Rangoon, planks ... do.	9 15 0	14 5 0
Wainscot, Riga (Bauk) ... do.	3 15 0	5 15 0
Do. Odessa Crown ... do.	3 15 0	5 15 0
Walnut, American ... per cub. ft.	0 2 6	0 4 2

TENDERS.

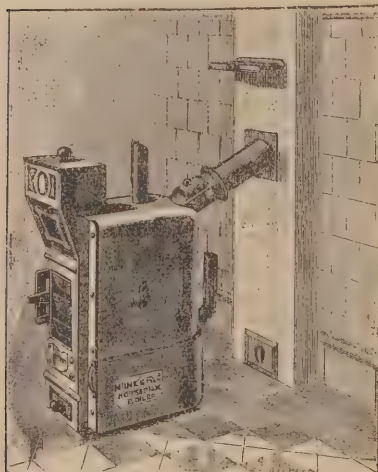
Information from accredited sources should be sent to "The Editor." No results of tenders be accepted unless they contain the name of the Architect or Surveyor for the Work.

ALTON (Hants).—For rebuilding the "White Hart Inn" Holybourne, for Messrs. Crowley and Co. Mr. R. A. Croley, architect, 22, High-street, Croydon:—  
B. E. Nightingale ... £2,475 | J. H. and E. Dyer ... £1,100  
Tompsett and Co. ... 2,055

BARRY (Wales).—For the erection of refuse destructor buildings, for the Barry Urban District Council. Mr. J. Pardoe, C.E., Barry:—  
J. Prout ... £23,318 8 6 | Jones Bros. ... £2,970  
Price Bros. ... 3,150 0 0 | Alban Richards ... 2,960  
C. H. Hirst ... 3,150 19 7 | W. Britton ... 2,911  
Geo. Rutter ... 3,121 12 1 | Lloyd and Tape ... 2,848 0

Refuse Destructor Chimney Stack.  
Price Bros. ... £2,395 0 0 | O. H. Hurst ... £1,958 2  
Lloyd and Tape ... 2,242 0 0 | W. Britton ... 1,920 19  
Geo. Rutter ... 2,013 14 10 | Alban Richards ... 1,849 11  
Jones Bros. ... 1,980 0 0 | J. Prout ... 1,805 0

BRIDLINGTON QUAY.—For the erection of a pair of villas, Spring-street, for Mr. F. G. Purdon. Mr. J. E. Shaw, architect, Wellington-road, Bridlington Quay:—  
Blackburn and Son £1,499 0 | J. H. Hudson ... £1,328 13  
E. Corner ... 1,385 0 | W. Moody ... 1,318 10  
W. Barnes ... 1,360 0 | A. Gardam ... 1,158 14  
T. Blackburn ... 1,329 0 | E. Wilson ... 1,137 14  
[All of Bridlington Quay.]  
\*Accepted.



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BRISTOL.—For extensions and alterations to boot factory, Kingswood, near Bristol, for Messrs. E. W. Pratt and Mr. J. Mackay, architect, Kingswood, near Bristol:—  
Walters ... £3,300 S. Williams Redfield ... £2,995  
Hatherly ... 3,253 W. G. Bindon, Avonmouth ... 2,688  
Owlin and Son ... 3,183 Milsom ... 2,370  
Humphreys ... 3,183 Wiltshire ... 2,300  
Howard Bros. ... 3,050  
\* Accepted.

GLOUCESTER.—For rebuilding the Golden Heart Hotel, Leadenworth, for Messrs. Godsell and Sons. Mr. J. Fletcher reu, M.S.A., architect, Gloucester:—  
Willey and Dean ... £1,071 0 A. H. Lewis ... £964 4  
Trinity Bros. ... 993 0 Freeman and Jones ... 960 0

GLOUCESTER.—For additions to the Spread Eagle Hotel, for Messrs. Godsell and Sons. Mr. J. Fletcher Trew, S.A., County Chambers, Gloucester, architect:—  
P. Lewis ... £1,934 10 9 Bailey and Dean ... £1,038 11 2  
Freeman & Jones ... 1,920 0 0 Gurnley Bros. ... 1,500 0 0  
Ford ... 1,887 0 0

GORLESTON.—For shelter hall, Gorleston, for the Great Yarmouth Town Council. Mr. J. W. Cockrill, borough surveyor. Quantities by borough surveyor:—  
Cork ... £1,400 J. F. W. Bray ... £5,063 0  
Wright and Wright ... 6,051 Yarmouth\* ... 5,895 14  
E. Bond ... 6,050  
\* Accepted.

GREAT YARMOUTH.—For destructor and chimney shaft, for the Great Yarmouth Town Council. Mr. J. W. Cockrill, borough surveyor. Quantities by the borough surveyor:—  
Cork ... £5,570 J. F. W. Bray ... £4,233 17  
E. Bond ... 5,299 R. Eastoe ... 4,204 15  
Anlove, Alliot, and ... 4,483 Wyles and Warner ... 4,197 9  
Co. ... 4,483  
\* Accepted.

HEYWOOD (Lancs.).—For the erection of stables, Greenfield, for the Phoenix Brewery Company, Limited. Mr. H. Openshaw, C.E., Fleet-street, Bury. Quantities by architect:—  
Fletcher Bros. ... £2,650 Daniel Diggle ... £2,380  
Brierley ... 2,456 Blakeley and Wild ... 2,390  
Hn Tinline ... 2,390 Heywood (accepted) 2,368

ILFORD.—For providing and fixing about 19,000ft. lineal of Norway kerb: 8,500 yards super. of Patent Victoria Adamant, or Victoria Indurated stone paving; and 7,500 yards super. of pitched crossings, &c., at Ilford, for the Essex County Council. Mr. Percy J. Sheldon, Chief Surveyor, County Offices, Chelmsford:—

	Victoria Stone.	Adamant Stone.	Indurated Stone.	Imperial Stone.
J. W. Moran and Sons, Harwich ... ..	£8,878	£6,407	£6,106	—
William Iles, Southend ... ..	6,462	6,123	5,802	—
William Gibbs and Co., Ilford ... ..	6,418	6,074	5,735	—
William Griffiths, London ... ..	5,882	5,882	5,429	—
B. W. Glenn, Colchester ... ..	6,099	5,759	5,415	—
W. and C. French, Buckhurst Hill ... ..	6,020	—	5,567	£5,643
R. A. Bonnett and Co., Chelmsford ... ..	5,895	5,513	5,206	5,513
G. J. Anderson, Poplar, E. ... ..	5,907	5,455	5,304	—
D. T. Jackson, Barking ... ..	5,740	5,439*	5,099	5,401

\* Accepted.

HISTON (Cambs.).—For the erection of a Baptist church. Mr. G. Baines, architect, 5, Clement's Inn, Strand, W.C.:—  
J. G. Cowell ... £3,490 0 Coulson and Lofts ... £2,820 0  
W. Pamphilon ... 3,093 0 Thoday & Co., Ltd. ... 2,679 0  
W. Wade ... 2,929 0 J. Feast ... 2,530 0  
The Cambridge Builders' Co., Ltd. ... 2,894 7  
Scales and Robins ... 2,850 0  
\* Accepted.

ILFORD (Essex).—For the erection of business premises in Ilford-lane, for Mr. Geo. Summers. Messrs. Paxton and Witt, architects, Manor Park, Essex:—  
W. Downs ... £3,095 R. L. Pridmore ... £2,748  
T. Ravey ... 2,952 F. Willmott ... 2,743  
[Architects' estimate, £2,758.]

LONDON.—For mission church at Chatsworth-road, Lower Clapton. Mr. F. Farrow, architect:—  
Roome and Co. ... £1,754 W. Shurmur ... £1,692  
LONDON.—For new wing and sundry additions to South Western Polytechnic, Manresa-road, Chelsea. Mr.

F. G. Knight, architect. Quantities by Mr. F. R. Smith:—  
Scrivenner and Co. ... £6,448 Messum ... £6,229  
Faulkner ... 6,383 Holliday and Green-wood ... 6,077  
Bywaters ... 6,277  
Stimpson and Co. ... 6,230

LONDON.—For mission hall at Dove-row, Haggerston. Mr. J. Hamilton, architect:—  
Snewin Bros. ... £2,111 Jarvis ... £1,922  
Chessum and Son ... 2,076 Goodall and Son ... 1,901  
Godfrey ... 1,977 W. Shurmur ... 1,899  
Beal ... 1,945

LONDON.—For alterations and additions at the "Shipwright's Arms" public-house, Tooley-street, S.E. Mr. R. Willock, architect. Quantities by Mr. E. J. Gee:—  
Toms ... £2,478 Stimpson and Co. ... £2,154  
Patman and Fotheringham ... 2,331 Sheffield Bros. ... 2,124  
Pritchard and Renwick 1,994

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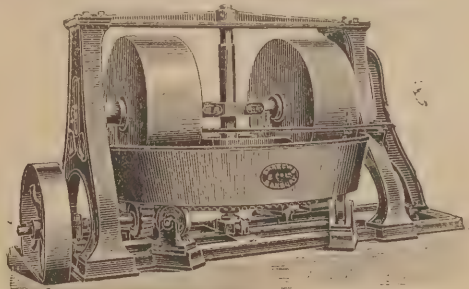
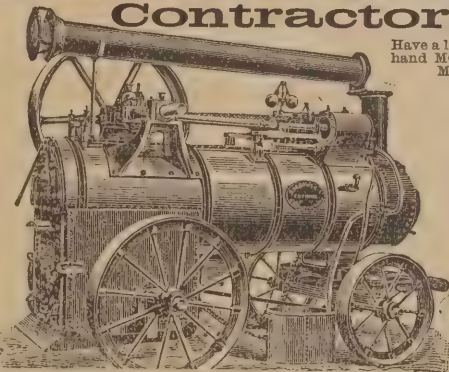
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LONDON.—For additions and alterations to Paddington Chapel, Marylebone-road, W. Mr. Alfred Conder, architect, 8, Bridge-street, Westminster. Quantities by Mr. E. J. Paine, F.S.I., of 11, Great James-street, Bedford-row, W.C. :—

		Extra for Ancaester stone.
Higgs and Hill	£10,760	£300
G. H. and A. Bywaters	10,566	364
L. H. and R. Roberts	10,295	300
Grover and Son	10,175	397
John Greenwood	10,119	430
Holloway Bros.	10,087	405
Smith and Sons	9,739	350
Akers and Co.	9,533	280
Edmund Toms	9,300	530
Stimpson and Co.	9,110	486
Kingerlee and Sons	8,990	500

LONDON.—For new mission church in St. Stephen's District, Wandsworth. Messrs. Crickmay and Sons, architects. Quantities by Messrs. Raven and Crickmay :—

Roffey	£6,351 0 0	Holloway Bros.	£5,900 0 0
Parsons	6,130 8 7	Carmichael	5,900 0 0
Higgs and Hill	6,038 0 0	Gregory and Co.	5,745 0 0
Lawrence and Sons	5,958 0 0	Stimpson and Co.	5,646 0 0
Dove Bros.	5,935 0 0	Johnson and Co., Ltd.	5,390 0 0

LONDON, W.C.—Tenders for proposed alterations at 4 and 5, Duncannon-street, Charing Cross, for Messrs. Wippell and Co. Mr. John Moir Kennard, architect :—

Rider and Sons	£1,993	Howell J. Williams	£1,632
Lawrence and Sons	1,870	Norton	1,550
G. Williams and Sons	1,859		

LURGAN (Ireland).—For the erection of a masonic hall for the trustees. Mr. Godfrey W. Ferguson, architect. Quantities by Mr. Samuel Hunter :—

Burns and Prentice	£1,534 19 0	Collin Bros.	£1,400 0 0
Bright Bros.	1,530 15 9	T. M. Millard, Belfast	1,299 7 5
T. Collin	1,445 0 0		* Accepted.

MANCHESTER.—For the erection of new offices and works for Saville's, Limited, Brewers' Manufacturers, Chorlton-road, Old Trafford. Mr. T. W. Hudson, architect, Manchester :—

Henry Matthews	£2,050	Peter Hodgkinson	£1,899
Wm. Henry Thorps	2,015	Burgess and Galt	1,890
Wilson and Toft	1,933	Robt. Carlyle, Jun.	1,878

\* Accepted.

MANSFIELD.—For six cottages off Nottingham-road, Mansfield, for Mr. E. Taylor. Messrs. Vallance and Westwick, architects, Mansfield :—

S. B. Frisby	£1,717 10 0	F. H. and J. W. Moore	£1,436 8 6
J. Keeling	1,689 0 0	F. L. Parsons	1,436 0 0
J. Greenwood	1,580 0 0	Vallance and Westwick	
J. Wignall	1,495 0 0	Blyth, Mansfield	
Brailsford & Son	1,490 17 8		
C. G. Bradder	1,489 8 6		1,396 0 0

\* Accepted.

MITCHAM (Surrey).—For new roads and outfall sewer, Ravensbury Park Estate, for the Mitcham Land Company, Limited. Messrs. Poolley and Follett, architects and surveyors, 21, John-street, Adelphi, W.C. :—

Chafen & Newman	£2,352 0	Neave and Son	£2,430 0
Thomas Adams	2,745 0	Stephen Kavanagh, Surbiton	2,298 13
Killingback and Co.	2,510 0		
William Langridge	2,505 0		

\* Accepted subject to the approval of the plans by the Local Authority.  
[Surveyors' estimate, £2,400]

PLYMOUTH.—For the construction of a stoneware pipe sewer, &c., Pennycross, for the Corporation. Mr. Jas. Paton, borough engineer, Town Hall, Plymouth :—

Pethick Bros.	£8,964 0 0	H. G. Skinner	£6,198 13 4
Shellabeer & Son	7,200 0 0	J. Fisher	5,976 13 10
J. Shaddock	7,134 17 0	R. T. Hortop	5,884 17 4
W. C. Shaddock	6,612 3 9	A. N. Coles, Plymouth	5,592 16 10
T. Shaddock	6,318 7 7		
R. H. B. Neal	6,250 0 0		

\* Accepted.

MELROSE.—Accepted for alterations to Roxburgh District Asylum. Messrs. S. Mitchell and Wilson, architects, 13, Young-street, Edinburgh. Quantities by Messrs. A. Hay and Co. :—

R. Hall and Co., Galashiels	£2,390 10		
SIDCUP.—For erecting St. John's Church, Sidecup. Mr. Geo. H. Fellowes Prynn, architect :—			
Lawrence and Sons	£13,150	Adamson and Sons	£10,886
Rider and Sons	13,075	Lowe	10,876
Dover Bros.	12,070	Holliday and Greenwood	10,714
Stimpson and Co.	11,285	Knight	10,481
Holloway Bros.	11,097	Porter	10,337
Osway	11,033	Goddard and Sons	9,846
Stephens, Bastow, & Co.	10,954		
Co. Prynne, & Co., W.,			

WINSLOW (Bucks).—For oak seating in nave and aisles, St. Lawrence Church, Winslow, Bucks. Mr. J. Oldrid Scott, F.S.A., architect, 35, Spring Gardens, S.W. :—

Robinson	£658	Matthew Bros.	£465
Harry Hems and Sons	590	Webster and Cannon	458

## COMPETITIONS.

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# THE MANUFACTURE OF TERRA-COTTA.

## DESIGN FOR GABLE TYMPANUM.

By WILLIAM REID.

FIG. 1 shows the complete design, and Fig. 2 the gable when set in its place on the building. To give any idea of how enriched work of this sort is produced in terra-cotta, it will be necessary, in the first place, to describe briefly how the ornament is modelled. The design itself may or may not be original on the part of the modeller, for, in the majority of cases, he has to work from designs supplied by the architect. In the present instance, the first thing to be done is to have a sheet of plaster run to serve as a bed on which the ornament is to be modelled. This sheet of plaster is then varnished, because, on account of the porous nature of the material, it would be practically impossible for the modeller to work on a surface which would, in a few

modelled may only be a couple of inches thick, it is propped up on bricks as shown at Fig. 3, making its full depth or thickness about 6in. Clay is then carefully spread over these bricks so as to present a fair and clean face. The sides are the first parts modelled. A strip of clay is laid along the side to be modelled, and within the space thus formed the plaster is put in exactly the same way as already described in the article on terra-cotta mouldings in No. CCXVI. of the BUILDERS' JOURNAL. The moulding of the ornament is work requiring considerable skill, particularly if the design presents much undercutting. For the sake of clearness, loose pieces are shown at A and B, Fig. 1. At these spots the ornament is undercut; that is, it is in high relief, and curving inward in such a manner that, if the mould for this part were made by merely pouring plaster over it, it would be impossible to pull it off without destroying the ornament. Now, wherever the design appears undercut, as at A or B, what is called a "loose piece" is inserted and trimmed up with a knife to a shape like that shown in the illustration. This piece is made by surrounding the particular part with a wall of clay and filling up the space with

pressing. The mould is filled in the same manner as already described, but in more elaborate work of this sort the finishing of the clay pressing is usually done by the one who has modelled the ornament.

It will be noticed that the complete design has not been cast in one mould but has been divided into two parts. This is necessary not only on account of the difficulty there would be in handling a heavy mass of clay of this size, but because there would be great danger of the piece getting warped or twisted during firing. Indeed, if the design were a very large one, say 6ft. or 7ft. in height and of proportionate width, it would be necessary to cut it into several pieces, in which case the cuts would be made in the least prominent parts so as to make the joints as little noticeable as possible when the whole is built up.

In the illustration showing the panel built into position (Fig. 2) it is seen surrounded by a moulding. This moulding is made separately, though if the design had been small enough to permit it and the extra weight of the added moulding immaterial, it would have been run in plaster on the plaster slab before the ornament was modelled, and the

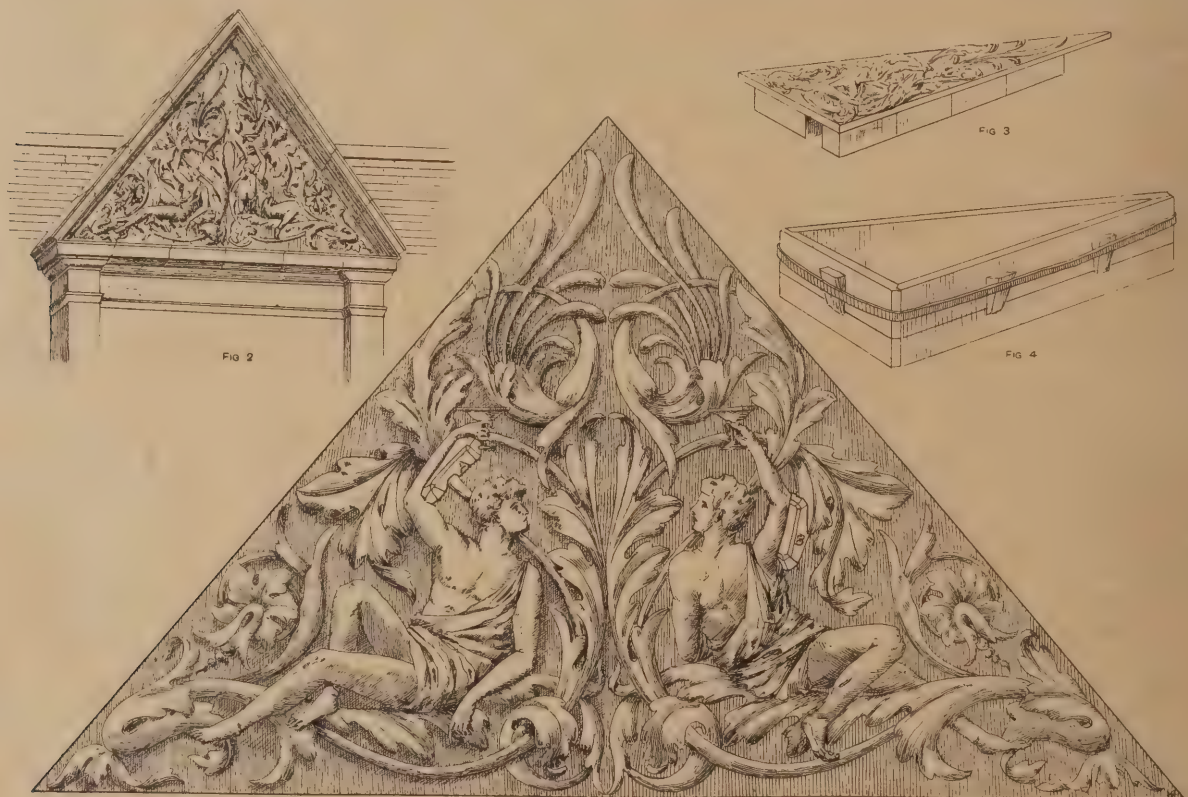


FIG. 1.

minutes, absorb all the moisture from his modelling clay. The varnish serves to close the pores of the plaster, and allows the modelled enrichment to adhere without any danger of falling off. The first thing the modeller will do is to sketch in the leading lines of the design, and block out the masses of foliage, for the present disregarding all minor details. He will then roughly suggest with clay these lines and masses, and, when satisfied with the relief and effect of this preliminary sketch, will proceed to fill in the more important details. In any case, the golden rule with modelling is to build up as much as possible, and carve away as little as possible.

In the early stages almost the only tools used are the thumb and fingers—the best of all modelling tools. The whole design, as far as possible, is carried on simultaneously; that is, no particular part is finished to the neglect of the rest, but a little is done here and a little there, so that the general effect of the whole design is constantly in view. When the modeller has finished his part of the work, the mould-maker takes it in hand. As the sheet of plaster on which the ornament has been

plaster. When the plaster is set it is pulled off, trimmed up, replaced, and either a letter or number or some distinctive mark is cut on it. Notice that all the facets of the piece are sloping outwards.

When every undercut part has been treated as at A and B, it will be seen that the remaining parts of the design, including the loose pieces, may now be safely covered with plaster, and when this is done the mould will be complete. Fig. 4 shows the complete mould turned over ready to receive the clay. As some pressure is used in filling the mould, a rope or hoop is wound round the sides in order to keep them in their places during this operation. This is known as a "piece mould." Moulds of this class for terra-cotta are somewhat easier to make than if the object to be cast were of some rigid material as, say, plaster or cement. If the ornament in terra-cotta be only very lightly undercut it is not usual to spend time making loose pieces for these parts, because the clay, when pressed into the mould, is soft and plastic, and, as it shrinks if left in the mould for a time, it becomes a simple matter to free the mould from the clay

whole cast in one mould. The method of making this moulding has been described in the issue of the BUILDERS' JOURNAL already referred to.

The clay is thoroughly dry before being fired. In the kiln the panel is set in a vertical position on its shortest edge, and boxed round with bricks to keep it in its position during the process of firing. The bricks also serve the purpose of protecting it from getting flashed or marked by coming in contact with the fire.

**Main Sewerage Works for Great Ayton** have just been completed, and about three miles of sewers have been laid. The purification of the sewage is to be effected by chemical precipitation, and the effluent will be distributed over land on the ridge and furrow system. The work has been executed by Messrs. Crudas and Son, of Guisborough, at a cost of about £4,000, and Mr. H. W. Taylor, of Newcastle and London, was the engineer.



## THE VENTILATION OF SEWERS.\*

By SIR CHARLES CAMERON, C.B., M.D.

THE ventilating openings in the street sewers, which are now so general in almost every town in the United Kingdom, have not met with universal approval. When first used many complaints were made of the unpleasant odours emitted from them. The late Sir Robert Rawlinson was wont to say when such a complaint was made, "Put more ventilators in the sewer." No doubt the larger the number of ventilators the less the odours from any one of them. Practically the sewage of Dublin is now conveyed in sewers open to the external atmosphere. If they were altogether open it would be better than their present state of being open only at certain points. The houses opposite those points receive more than their due share of whatever comes out of the sewer, whereas if the sewer were open as a ditch, every house would be treated alike to the emanations, if any, from it.

I am bound to say that as a rule there are no sensible nuisances caused by the street sewer ventilators; but there are occasional exceptions to this rule. Now and then persons complain to the Public Health Committee that the ventilators near their houses are offensive. On examination these complaints are generally found to be justifiable. Ordinary sewage generally has very little odour until it becomes stale; but now and then what may be termed exceptional sewage, having an offensive odour, flows through sewers in our streets, and it is chiefly from such sewage that the offensive emanations come through the ventilators.

The chief object in the use of ventilators is to prevent a greater pressure of the air of the sewers than that of the external atmosphere. It is assumed that the gases generated by the fermentation of the organic matter always present in sewage might cause the sewer air to acquire sufficient pressure to force the traps on the house drains connected with the sewer. I have always doubted very much that the sewer gases could acquire a pressure sufficient to displace two or three inches of water. I have made many experiments in reference to the so-called pressure in the air of sewers. I have had the sewer ventilators closed on considerable lengths of sewer mains, and have inserted delicate pressure gauges in them. I never observed any pressure except of the most trifling kind in the air of the sewers when the ventilators were closed. I did, however, notice that in the early morning, air often passed into the sewers from the streets. This descent of the air into the sewer I attributed to the insuction of air from the sewer into houses, the drains of which were untrapped or provided with defective ones. When the fires began to be lighted in the kitchens, air was drawn into the street sewers, especially in those parts of the city inhabited by the poorer classes. According to my experience, the pressure which occasionally may be observed in the sewers is sometimes caused by the wind. When a strong gale is blowing, gusts of wind enter the sewer through the ventilating opening.

The second object in ventilating sewers is to protect the workmen engaged in cleaning or repairing them. I greatly doubt that the emanations from ordinary sewage are so abundant and dangerous as to imperil life or health. The manholes should, of course, be open for some time before the sewer was entered. Deaths of workmen from inhalation of sewer gases have not been infrequent, but it has been caused not by ordinary sewage air,

but by sulphuretted hydrogen set free from refuse from gas works, or from waste gases from gas engines allowed improperly into sewers, or from other exceptional causes.

It is worth noting in connection with the subject of this paper that the sewers of one city, as large as Dublin, are not ventilated at all. This city is Bristol. Its sewers discharge their contents into a tidal river in which the water rises so high that for a large portion of the day the sewage cannot escape into the river. Bristol enjoys a remarkable immunity from typhoid fever, and I am informed that no injury to the health of the workmen who cleanse the unventilated sewers has taken place.

Notwithstanding the experience of Bristol, I confess that I am in favour of the ventilation of street sewers, though not by the means now generally employed. I object to the ordinary sewer openings in streets which are narrow and confined, and I have suggested another method of ventilation, which my colleague, Mr. S. Harty, City Engineer, has approved of, and uses under certain circumstances. In order to explain my system it is necessary to say a few words in reference to the passage of gases through certain solid substances. If we take a gas—say oxygen or hydrogen—and enclose it in a vessel of metal, glass, or glazed porcelain, it will remain there for an indefinite period; but if the vessel is composed of unglazed porcelain or plaster of Paris, the gas will rapidly pass out of it. If a galvanic porous cell be connected with a glass tube, the latter filled with water, and its open end sealed in water, and a vessel of coal or hydrogen gas be placed over the cell, the water will be immediately expelled from the tube. This phenomenon is explained as follows:—All gases diffuse in right lines in all directions. The lighter gases diffuse more rapidly than the heavier ones, and all pass through porous materials. As coal gas is lighter than air, it passes more rapidly into the cell than the air in the cell passes out of it, and therefore pressure is caused, as shown by the expulsion of water from the tube.

I have applied this property of the diffusion of gases through porous materials to the ventilation of sewers. Cylinders, composed of a mixture of two parts of porcelain clay and one of sulphate of lime, 18 in. in height and 6 in. in diameter, are used. Four or six are inserted in the crown of the sewer, and in a chamber resembling that used for the ordinary ventilators. The rain that enters the chamber from the street is carried into the sewer through a small syphon, and no wet can get at the cylinders.

As the cylinders allow air to pass freely through them, but effectually bar the passage of micro-organisms, there can be no greater pressure in the sewer air than in the street atmosphere. Air continuously comes out of the sewer, filtered through the cylinders, and air as continuously enters the sewer through the porous vessel. The action of the filter on the air resembles the action of a Pasteur filter on water.

The sewer diffuser ventilator is manufactured by Messrs. Doulton, of Lambeth, London, and Burslem, Staffordshire.

The "fresh air inlets" of the house drains are often the outlets for foul air. When they are placed in the basement areas of houses they not infrequently cause an unpleasant odour. Whenever a w.c. is flushed, the air in the soil pipe is forced out through the inlet into the external air. Mica valves are occasionally used at the inlets to prevent the gases from the soil escaping into the atmosphere. They are never airtight, and soon get out of order. A better protection against the emission of foul air through the inlet would be a porous plate such as is used in the diffuser ventilator. As every precaution is usually taken to prevent even a "pin-hole" in the soil pipe, it seems contradictory that a large opening should be made in it.

In conclusion, I may state that the sewer diffuser ventilators have given satisfaction in Dublin, and have been found efficacious. They have been in use for the last two years, and, on examination, have been found to remain quite clean.

## THE DISPUTE IN THE BUILDING TRADES.

THE settlement of the plasterers' dispute has prevented the spread of disagreement to the other branches of the building trades in the country with the exception of Yorkshire, and in particular Hull. Here it has failed to bring together the parties to the dispute, and the quarrel between the Hull masters and men is remarkable for the apparent total absence of any desire to bring it to an end.

A meeting of the Northern Centre of the National Building Trade Employers' Federation was held at the Queen's Hotel, Leeds, last Wednesday, Mr. R. Neill, of Manchester, presiding. The following resolution was passed:—"That this meeting approves of the formation of a National Conciliation Board for the building trade, but before they consent to this being formed steps must be taken to clear up the matters contained in the Yorkshire manifesto, and they agree to the suggestion of Mr. Cook, Editor of the London "Daily News," for the Yorkshire Federation to have a conference with the whole of the operatives' unions, and if this is arranged in a bona-fide manner the 25 per cent. locked out in Yorkshire will be reinstated." The co-operative scheme initiated by the Leeds branch of the London Order of Bricklayers is steadily progressing. A deputation from the Leeds Master Builders' Federation waited upon the Leeds and Yorkshire Architectural Society at their rooms in Park Street, Leeds, last Thursday afternoon, with the object of explaining the present position of the building trade as a whole, and of securing the support of the local architects in the existing crisis. The deputation was very favourably received, and an undertaking was given that the matter should be carefully considered and the Federation provided with copies of any resolutions that might be adopted.

At the Salisbury Hotel, Fleet Street, on Thursday, a conference took place between representatives of the National Association of Master Builders and of the National Association of Operative Plasterers for the purpose of making arrangements for the termination of the lock-out. Mr. E. T. Cook, editor of the "Daily News," presided. The proceedings were held in private, but at their conclusion the following memorandum was handed to Press representatives:—"Some discussion took place on an alleged breach of the agreement at Bromley, referred to in Mr. Hassall's letter of June 10th. The representatives of the National Association of Operative Plasterers denied and disavowed the action referred to. With regard to the last clause of Rule 5 (the non-unionist clause), the chairman gave it as his definite interpretation that it was intended and agreed in the discussions at the conferences that no man should be objected to as 'specially objectionable' because he may be a non-unionist. This was agreed to. It was agreed that notices should immediately be issued by the National Association of Master Builders withdrawing the lock-out notices, and work be resumed on Monday, June 19th." The cost of the plasterers' dispute to the men's Union is said to be £22,000, of which London has absorbed £8,000.

**Proposed Improvements at Tipton.**—In addition to a public park of 34 acres, the land for which was purchased in commemoration of the Diamond Jubilee, and which is being laid by the District Council at a cost of £5,000, the development of the adjacent property which consists of about 24 acres, mostly lying between the new park and the railway has been commenced. It is proposed to remove all the old structures on the land, and to erect in their place 800 houses of various types. According to present proposals the Seven Stars Inn is to be demolished and a public hall erected on its site. The development of the estate is being carried out under the direction of Messrs. Perry and Nightingale, architects, of Dudley.

\* A paper read at a meeting of the Royal Institute of Architects of Ireland on May 25th, 1899.



## Masters and Men.

**Sheffield Masons** have put in an application for an advance of 1d. per hour.

**Lancaster Plasterers** resumed work last Wednesday at an advanced wage, namely, 9½d. instead of 8½d. per hour.

**The whole of the Grimsby Bricklayers** went out on strike last week for an advance in wages of 1d. per hour.

**Chester Bricklayers' Labourers** are striking for an advance of ½d. per hour, which will make their wage 6d.

**The Dumfries Masons' Strike** has been settled on the understanding that the masters give an advance of ½d. per hour.

**Barnsley Builders' Labourers** have resumed work on a basis of mutual concession. The labourers came out on strike on May 1st, because the masters sought alterations of working rules, so that they might have greater freedom in utilising the work of the men in various ways.

**Bricklayers' Lock-out in Berlin.**—The Building Trade Employers' Association of Berlin, at a meeting held last Tuesday week, decided, with but four dissentient votes, upon an immediate lock-out of all the bricklayers in Berlin and the suburbs, rejecting the men's demands for a wage of 65 pfennig per hour.

**Four Hundred Carpenters who struck** work at Messrs. Vickers, Sons, and Maxim's shipyard, Barrow, owing to a complaint that the joiners were doing certain work on a steamer under construction which belonged to the carpenters, resumed work last Thursday, the dispute being referred to arbitration.

**The Associated Joiners on Tyneside** gave notice some three months ago of a demand for an advance of wages from 9½d. to 10d. per hour. The notice time expired on the 9th inst. The employers offered arbitration, but the men refused, and about 700 have gone on strike. About an equal number remain at work with non-associated masters, who have conceded the advance.

**The Paisley District Strike Ended.**—As a result of a conference between the representatives of the locked-out men and of the masters, the builders' labourers resumed work at the beginning of last week at their old rate of wages, 5½d. per hour. The agreement came to, however, is that the wages should be increased to 5½d. per hour from the 19th inst., and that the plasterers' labourers should, from August 1st, have their wages increased to 6d. per hour, the other labourers still remaining at 5½d.

**The Stonemasons' Strike at Wigan,** which has lasted six weeks, has come to an end. The wages are advanced to 9½d. per hour from July 1st. Certain alterations are made in the rules, and a Conciliation Board of joint representatives is appointed to deal with minor disputes. In case of future proposed alterations in the rules six months' notice is to be given, terminable on May 1st in each year. The President of the Board of Trade is empowered to appoint an umpire, failing settlement by the Joint Arbitration Board.

**Edinburgh and Leith Plumbers' Strike Ended.**—At a meeting of Edinburgh and Leith plumbers last Saturday week, a letter from the secretary of the Masters' Association was read, intimating that at a meeting on the previous Friday night it had been resolved to adopt the alterations on the rules of working, as adjusted at the conference of masters and men on Friday afternoon. The men, therefore, begin work at an increase of 1d., and there will be a minimum rate of wages for apprentices, while the Examination Board for apprentices will come into operation about the end of September.

**Edinburgh and Leith Joiners' Strike.**—Nearly seventy masters have conceded to the men's terms. An offer of arbitration has been refused by the men, and at a meeting of Edinburgh joiners' employers the recommendation to lock out 25 per cent. of the workmen throughout Scotland was favourably considered, and a meeting of joiner employers throughout the country has been convened for next week for the purpose of carrying this into effect. The Aberdeen branch of the Scottish Building Trades Federation have agreed to support the proposal of the Federation to pay off 25 per cent. of the men in their employment, with a view to bringing about a settlement of the Edinburgh strike, on the understanding that Glasgow and Dundee join in the step.

**The Great Strike in Denmark.**—The Danish employers have sent a letter to the German association of employers in the building trade explaining the motives which induced them to declare a general lock-out, and requesting the latter not to give employment to any Danish workmen during the continuance of the lock-out. The lock-out is producing so much hardship amongst the men thrown out of work that a deputation, consisting of K. M. Klausen, A. C. Meyer, labour members of the Danish Parliament, and N. Landhye, secretary to the Danish Engineers' Society, have come over to England with the object of obtaining assistance from their fellow-workers in this and other countries. They allege that whilst the Danish employers are trying to fill the places of those who are locked out with foreign workmen, they are appealing to foreign employers not to engage Danish workmen; and, further, that the following, amongst other conditions, are insisted upon by the employers:—(1) That in future no agreements shall be entered into with local organisations. (2) That the right of the employers to divide and arrange the work must be acknowledged by the heads of the workmen's organisations. (3) That foremen must not be members of trade unions. (4) That all agreements between the men and their employers shall be terminated by three months' notice on January 1st.

## Builders' Notes.

**Brechin Building Contracts.**—The contracts for the erection of a new block of workmen's houses in St. Andrew Street to the order of Mr. William Black, joiner, have been given to the following:—Mason, Mr. David Crabb; joiner, Messrs. Black and Sons; plumber, Mr. George Cuthbert; plasterer, Mr. James Gibson; and slater, Mr. William Fraser—all of Brechin.

**The Risk of Employing a Gouty Man.**—Judge Lumley Smith gave his award in the Westminster County Court on Monday last week in the case of Lloyd v. Sugg, an action under the Workmen's Compensation Act. The applicant was George Lloyd, a blacksmith, of North Kensington, aged sixty-seven, and the respondents were Messrs. Sugg and Co., gas engineers. The plaintiff's case was that he was holding a tool by means of a piece of wood, and a boy who should have hit the tool with a hammer missed it, and hit the wood. Several bones in his hand were broken by the blow, and two days afterwards he was discharged. The defendants' evidence was that no bones were broken, and that Lloyd was suffering from gout, which was brought out by the jar. The reason he was dismissed was because of bad work done before January. The boy missed the tool because a spark went in his eye. His honour's view at the former hearing was that employers took the risk of employing a man with gout in his system, and if an injury was received which brought out the gout they would be liable to compensation. He awarded the applicant 15s. a week.

## Surveying and Sanitary Notes.

**New Town Hall for Dukinfield.**—A Local Government Board inquiry was held at the Dukinfield District Council offices last Thursday into an application of the district council to borrow about £12,000, principally for the erection of a new town hall, and a small portion for sewerage. There was no opposition.

**Road Widening in Sheffield.**—The Improvement Committee of the Sheffield City Council have resolved to accept the offer of the Church Burgesses to throw out 130 square yards of land in Coleridge Road for the widening thereof, on condition that the Corporation carry out the street works over the land, estimated to cost £100.

**Birmingham Requirements.**—At a recent Local Government Board inquiry at Birmingham, it was stated that the Town Council desired to borrow £47,186 for the purposes of street improvements, £14,291 for market purposes, and £3,300 for sewerage works and surface-water drainage; £30,000 of the sum required for street improvements was for the widening of Colmore Row. The next section of the loan was for wood-paving in Resshore Road, from Sherlock Street to Priory Road. The work in Great Charles Street was being undertaken at the request of the Mason University College authorities, the traffic on the granite setts interfering with the work in the classrooms. The granite taken up would be used in repairing Kenyon Street. The work in Pasture Street and Great Charles Street, with the repairing of the footpath in Wheeler Street between New John Street and Great King Street, would amount to £14,170. One thousand pounds were wanted for the paving of Church Road, and £2,016 for widening Moat Lane. With regard to the £14,291 required for market purposes, the works for which it was required were a new cattle market in Montague Street, and the extension of the vegetable market. The application for £3,300 was for sewerage Edwardes Street, Ballsall Heath, and Church Street.

**Sanitary Inspectors' Association Conference.**—The autumn excursion to Lincoln, and Provincial Meeting and Conference at Lincoln, with Sir John Hutton as president, will take place on August 3rd to August 5th inclusive. On Thursday, August 3rd, there will be an official reception of the members at the Guildhall by the Mayor, Sheriff, members of the City Council, and Mr. C. H. Seeley, M.P., after which the conference will be opened. There will be an extraordinary general meeting for the election of members and associates, after which the opening of the Health Exhibition and a garden party at the Arboretum, at the invitation of the Mayor will take place. On the following day there will be a council meeting at the School of Science and Art, Monk's Road. The council will resume its proceedings at eleven o'clock, when the following papers will be read:—"Thirty-three Years of Sanitary Work in the City of Lincoln," by H. K. Hebb; "The Action of Sun, Air, and Vegetation, on Surface Waters," by G. M. Lowe; "The Sources of Underground Water Supplies," by T. J. Moss-Flower; "The Prevention of Smoke," by I. G. Dee; "Slaughter Houses, and Slaughter House Inspection," by George Anderson; "Construction and Sanitation of Cowsheds and Dairies," by J. F. Skinner; and "Domestic Sanitation," by William Watkins. In the evening a visit will be paid to the Corporation Electricity Works, after which the annual provincial dinner at the Saracen's Head Hotel will be held, and the day will be concluded by a grand tableaux entertainment at the exhibition. On Saturday the last day of the conference, visits will be paid to the Castle, the Museum of Roman Remains, the Newport Arch, the Cathedral, the Old Palace, and the Sewage Works.



Engineering Notes.

**The Society of Engineers Visited,** last Wednesday, the London Station and Goods Depot of the Great Central Railway, Mary-lebone.

**The Iron and Steel Institute's** autumn meeting will be held in Manchester on August 15th to 18th inclusive. The meetings on August 15th and 16th will be held in the Town Hall.

**Electric Light Installation at Barking.**—The official opening of the electricity supply works of the Barking Urban Council took place recently. The lighting station comprises an engine-room, a boiler-house, battery-room, and a shaft 100ft. high.

**Electric Glow Lamp.**—Following their success at Turin, the Improved Electric Glow Lamp Co., Ltd., of 109, Queen Victoria Street, E.C., have obtained a gold medal for their lamps at the International Exhibition, recently terminated in Rome. The result must be highly gratifying alike to the company and their customers, as testifying to the high standard of excellency and favour which their lamps have obtained.

**Overhead Tramways System at Brighton.**—At a meeting of the Brighton Town Council last Thursday a scheme of municipal tramways was accepted which will effect communication between the centre of the town, the Front, and the outlying districts. There will be eight lines, and the Tramways Committee unanimously thought that the tramways should be worked by electricity, and that the overhead wire system was the best suited to the requirements of Brighton. It was estimated that the total cost will be about £140,000.

**The Proposed Tunnel to Ireland.**—A conference was held last Monday week of members of Parliament who advocate the construction of a tunnel between Great Britain and Ireland. The Marquis of Londonderry, who presided, did not think there could be two opinions as to the extreme desirableness of the proposed tunnel. He argued that the scheme was practicable, stating that the length of the submarine tunnel by the most favourable route was twenty-five miles, and the extreme depth of water eighty-five fathoms. Lord Spencer moved a resolution to the effect that the First Lord of the Treasury be asked to receive a deputation on the subject, and Sir Mark Stewart seconded the motion, which was supported by Lord Morris; the resolution was carried unanimously. On the motion of Mr. Horace Plunkett, seconded by Sir C. M. Palmer, a small committee was appointed to arrange for the proposed deputation.

Trade and Craft.

THE ANDERSON PATENT COUPLING.

The Anderson patent lead pipe coupling is a capital appliance for connecting all sizes of lead pipes and lead to iron pipes. It possesses great pressure resisting powers, as is shown by the tests applied by Mr. W. H. Stanger. He applied a pressure of 1,000lb. per square inch to the No. 2 B  $\frac{3}{4}$ in. coupling, when the lead pipe burst, but the joint itself showed no signs whatever of leaking. The lead pipe used weighed 1.46lb. per foot. He also tested the No. 4 B  $\frac{3}{4}$ in. coupling, and in this case applied pressure up to 1,200lb. per square inch. The result was that the lead pipe, which weighed 2.4lb. per foot, burst some 7in. from the joint. His opinion was that in order to really test the absolute strength of the tightness of the coupling itself, it would be necessary to fit it to piping capable of withstanding higher pressure than the coupling. Fig. 1 shows the

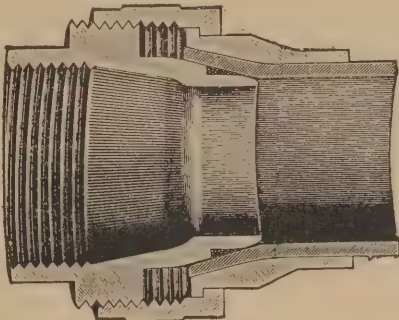


FIG. 2.

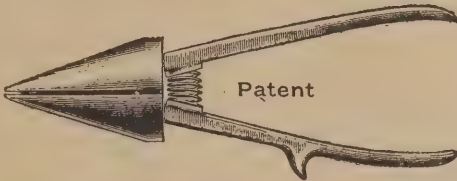


FIG. 3.

method of coupling two lead pipes, which are easily and quickly adjusted. The advantage of the coupling for lead to iron pipes is the combination of union, joint, and nipple. Fig. 2 represents lead and iron pipes joined in a very strong and neat way. This coupling is supplied in the

rough, brass finished, or nickel plated, and necessitates the use of no special tools or detailed instructions. The patent lead expanding pliers, Fig. 3, are of great use in expanding the ends of lead pipes, and prevent any danger of buckling or bending the pipe. They are not only useful in fitting the Anderson coupling, but are of great value in all kinds of plumbing work, being much better than the old-fashioned wooden cones hitherto used by plumbers and coppersmiths. Any of our readers

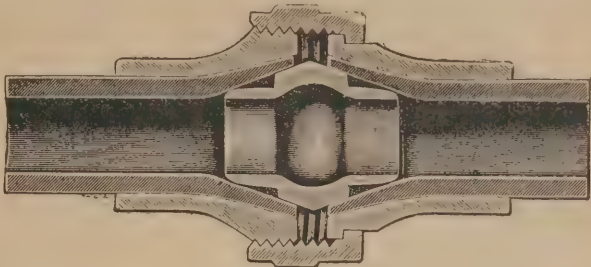


FIG. 1.

desiring further information with regard to this coupling can obtain it from the Anderson Patent Pipe Coupling Syndicate, of Clun House, Surrey Street, London, W.C.

**The Cefnywaen New School,** near Carnarvon, is being warmed and ventilated by means of Shorland's patent Manchester stoves, supplied by Messrs. E. H. Shorland and Brother, of Manchester.

**Railway Contractors sued for Damages.**—In the First Division of the Edinburgh Court of Session last Wednesday, before Lords Young, Trayner, and Moncreif, the settlement was intimated of an action by Wm. Paton, junior, labourer, who had sued Messrs. Robert M'Alpine and Sons, railway contractors, of 188, St. Vincent Street, Glasgow, for compensation for injuries. The plaintiff was a fireman in the employ of the defendants upon a railway in connection with a contract which they have with the Edinburgh and District Water Trust, near West Linton. On February 23rd he was standing on his engine, which was pushing a waggon, when the waggon left the rails, and, rearing up, jammed the pursuer against the fire-box. His right leg was so severely injured that it had been necessary to amputate it. It was averred that the railroad was in a defective condition, and that it was not regularly inspected. The defendants denied this, and said that the pursuer undertook his work knowing the risk of injury involved in it. They were willing to pay the plaintiff reasonable compensation. It was stated that the plaintiff had accepted an offer of £111 and expenses.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—			
June 23	Halifax—Stabling and Caretaker's House, &c. ...	.....	J. F. Walsh, Lanes. and Yorks. Bank-chambers, Halifax.
" 23	Kelvedon, Essex—Four Almshouses ...	.....	Chancellor and Son, Architects, Chelmsford.
" 23	Nantwich—Bridge ...	.....	J. Bebbington, District Surveyor, Willaston, Nantwich.
" 23	Neyland, Pembrokeshire—Police Station... ..	.....	A. H. Thomas, Assistant County Surveyor, Haverfordwest.
" 23	Southampton—Church Works ...	.....	M. Smith, 30, Bellevue-road, Shirley.
" 23	Little Ilford—Six Houses ...	.....	Office, 54, Maryland-street, Stratford, E.
" 24	Bodmin—Additions, &c., to Constabulary Buildings	.....	H. J. Snell, Architect, Plymouth.
" 24	Knaresborough—Boundary Wall, &c., to Gasworks	.....	Clerk, Council's Office, Knaresborough.
" 24	Manchester—Hospital Buildings ...	.....	City Surveyor, Town Hall, Manchester.
" 24	Selby—Steam Laundry, &c. ...	.....	G. F. Pennington, Central Chambers, Castleford.
" 24	Wigmore—Alterations to Police Court ...	.....	A. Dryland, County Surveyor, Shire Hall, Hereford.
" 25	Blaina, Mon.—Schoolroom, &c. ...	.....	W. S. James, Secretary to Trustees, 77, High-st., Blaina.
" 26	Alnwick—Repairs to Highway Bridges ...	.....	J. Short, Highway Surveyor, Alnwick.
" 26	Cwm, near Ebbw Vale, Mon.—Additions to School	.....	R. L. Roberts, Victoria-chambers, Abercarn.
" 26	Edinburgh—Extension of Boiler-house, &c. ...	.....	Burgh Engineer, 1, Parliament-square, Edinburgh.
" 26	Carlisle—Alterations to Asylum ...	.....	G. D. Oliver, 5, Lowther-street, Carlisle.
" 26	Gloucester—Two Cottages ...	.....	T. Cadle, Surveyor, Lynwood, Denmark-road, Gloucester.
" 26	Hursley, near Winchester—Workhouse ...	.....	Chancellor and Hill, 12, Jewry-street, Winchester.
" 26	Leeds—Slatting Roof of Coal Store ...	.....	R. H. Townsley, Manager, Municipal-buildings, Leeds.
" 26	Pontearreg, Carmarthenshire—Additions to Infirmary	.....	H. Howell, Secretary, Carmarthenshire, Pontearreg.
" 26	Thornham, Norfolk—Repairing, &c., Roof of Church ...	.....	Vicar, Thornham Church, Norfolk.
" 26	Wardle, Lancs.—Slatting, &c. ...	.....	S. Brierley, Surveyor to Council, Board Room, Wardle.
" 27	Bundoran and Belleek—Stationmasters' Houses ...	.....	Company's Engineer-in-Chief, Amiens-st. Terminus, Dublin.
" 27	Hill End, near St. Albans—Hospital Block, &c. ...	.....	G. T. Hine, 35, Parliament-street, Westminster.



COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—Continued.</b>			
June 27	York, Alteration, &c., to Office	Yorkshire Banking Company Limited...	Bedford and Kitson, Greek-street-chambers, Leeds.
" 27	Woolwich—Lodge, Shelter, and Mortuary	Local Board	Church, Quick and Whincoop, William-street, Woolwich.
" 27	Sedbergh—Extensions, &c., to Royal Hotel	L. Chorley	S. Shaw, Architect, Kendal.
" 27	Halifax—11 Houses	S. Webster and Son, Ltd.	Jackson and Fox, 7, Rawson-street, Halifax.
" 27	Great Horton, Bradford—Shop and House		Spencer, 344, Great Horton-road, Great Horton, Bradford.
" 28	Barrow-in-Furness—Extensions to Electricity Works and Sewage Pumping Station	Corporation	Borough Engineer, Town Hall, Barrow-in-Furness.
" 28	Pillaton, Cornwall—Church Restoration		H. G. Luff, 64, Chapel-street, Devonport.
" 28	Halifax—Detached Villa Residence		M. Hall, 29, Northgate, Halifax.
" 28	Walton-on-the-Naze—Floral Hall, &c.	Coast Development Company, Ltd.	C. H. M. Mileham, 1, Lincoln's Inn-fields, W.C.
" 28	Whitney—Blanket Manufactory		J. Kirk and Sons, Architects, Dewsbury.
" 29	London, N.—Works at Relief Offices	Islington Guardians	W. Smith, 65, Chancery-lane, W.C.
" 29	Stockport—Fire Station	Watch Committee	J. Atkinson, Borough Surveyor, St. Petergate, Stockport.
" 29	London, S.W.—Baths	Wandsworth Commissioners	Spalding and Cross, 15, Queen-street, Champsie, E.C.
" 30	Brighton—Underground Convenience	Town Council	F. J. C. May, Borough Engineer, Town Hall, Brighton.
" 30	Chatham—Post Office	H.M. Commissioners of Works	Office of Works, Storey's Gate, S.W.
" 30	Bedford—Converting Wards, &c.	Workhouse Guardians	H. Young, 35, Maitland-st, Bedford.
" 30	Swindon—Painting and Repairs	School Board	J. Clark, 130, Princes-street, Swindon.
July 1	Manchester—Hospital Buildings	Sanitary Committee	City Surveyor, Town Hall, Manchester.
" 3	London, E.—Works at Town Hall	Overseers of All Saints', Poplar	W. Clarkson, 136, High-street, Poplar.
" 3	Sheffield—Hospital, &c.	Corporation	Flockton, Gibbs and Flockton, 15, St. James-row, Sheffield.
" 4	West Ham—Cleansing, Repairs, &c.	School Board	W. Jacques, 2, Fen-court, E.C.
" 4	Bexley—Repairs, &c.	School Board	Offices, Upland Schools, Bexley Heath.
" 6	Derby—Super Structure to New Depot	Corporation	Borough Engineer, Babington-lane, Derby.
" 10	Preston—County Sessions Hall	Lancs. County Council	H. Littler, Architect, County Offices, Preston.
" 13	Saxmundham, Suffolk—Works	School Board	J. Fry, Solicitor, Saxmundham.
" 17	Stamford—Workhouse	Union Guardians	J. H. Horton, 50, King-street, South Shields.
" 17	Wimbledon—Public Baths	Urban District Council	R. J. Thompson, 47, Hill-road, Wimbledon.
" 27	Brighton—Alterations, &c., to Library, Museum, &c.		F. J. C. May, Town Hall, Brighton.
<b>ENGINEERING—</b>			
June 23	Denton, Northampton—Sinking Well	Hardingstone Rural District Council	J. Haviland, 2, St. Giles'-square, Northampton.
" 24	Selby—Laundry Plant	Steam Laundry Co., Ltd.	G. F. Pennington, Architect, Central-chambers, Castleford.
" 26	Alnwick—Reservoir	Rural District Council	H. W. Walton, Clerk, Alnwick.
" 26	Guildford—Reconstructing Bridge	Rural District Council	N. Lailey, 16, Great George-street, Westminster.
" 26	Uganda—Steel Trestle Viaducts	Uganda Railway Committee	Crown Agents for the Colonies, Downing-street, S.W.
" 26	Carlisle—Extension of Water Mains	Rural District Council	G. Armstrong, 24, Bank-street, Carlisle.
" 26	Gotham, near Basford—Reservoir	Basford Rural District Council	G. and F. W. Hodson, Engineers, Loughborough.
" 26	Halifax—Bridge Girders, &c.	Corporation	E. E. S. Escott, Borough Engineer, Town Hall, Halifax.
" 26	Maldon, Essex—Reservoir	Rural District Council	H. G. Keywood, Engineer, Market-hill, Maldon.
" 27	Horbury—Railway, &c.	Lancs. and Yorks. Railway Co.	Engineer, Hunt's Bank, Manchester.
" 27	Staines—Steam Roller	Rural District Council	G. W. Manning, Surveyor, Council's Offices, Ashford, Staines.
" 28	Barrow-in-Furness—Electricity Supply	Corporation	Kincaid, Waller, & Manville, 29, Gt. George-st., Westminster.
" 29	North Walsham, Norfolk—Sinking Well, &c.	Urban District Council	J. C. Melis, 264, Gresham House, Old Broad-street, E.C.
" 29	Lichfield—Coal Filter, &c.	Rural District Council	G. F. Reader, Engineer, Chasetown, near Walsall.
" 30	Withington—Culvert, &c.	Urban District Council	A. H. Mountain, Surveyor, Town Hall, Withington.
" 30	Shanghai—Tramway Concession	Municipal Council	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
" 30	Ruabon—Storage Reservoir		Dennie and Son, Engineers, Ruabon.
July 1	Bishop's Stortford, Herts.—Repair of Engines	Urban District Council	Surveyor, Council's Offices, Bishop's Stortford.
" 5	Weston-super-Mare—Pavilion Foundations	Urban District Council	H. Nettleton, Engineer, Town Hall, Weston-super-Mare.
" 6	Hunstanton—Water Tower and Tank	Urban District Council	Stevenson and Burstal, 38, Parliament-street, Westminster.
" 10	Grimsby—Electric Lighting	Corporation	M. Petree, Borough Engineer, Town Hall, Grimsby.
" 10	Tynemouth—Reservoir	Corporation	J. Mansergh, 5, Victoria-street, Westminster.
" 26	Christiania—Harbour Works	Harbour Management	Commercial Department, Foreign Office, S.W.
" 31	Rio de Janeiro—Lease of Railways	Brazilian Government	Commercial Department, Foreign Office, S.W.
<b>IRON AND STEEL—</b>			
June 24	Inverness—Railway Stores	Highland Railway Co.	O. Kennedy, Stores Superintendent, Inverness.
" 26	Alnwick—Cast-iron Finger-posts	Rural District Council	H. W. Walton, Clerk, Alnwick.
" 26	Glasgow—Lamp-posts	Trustees of the Clyde Navigation	T. R. Mackenzie, 16, Robertson-street, Glasgow.
" 29	Knutsford—Wrought-iron Fencing	Urban District Council	W. J. Downes, Surveyor to Council, Knutsford.
July 3	Kingston-on-Thames—Fence	Guardians	W. H. Hope, Union Offices, Kingston-on-Thames.
" 3	London, N.—Wrought-iron Shingle Bins	Islington Vestry	J. P. Barber, Vestry Hall, Islington, N.
" 5	London, E.C.—Railway Stores	East Indian Railway Co.	A. P. Dunstan, Secretary, Offices, Nicholas-lane, E.C.
<b>PAINTING—</b>			
June 23	Leeds—Painting, &c.	School Board	W. Packer, Clerk, School Board Offices, Leeds.
" 27	Macclesfield—Painting Two Gasholders	Gas Committee	Newbigging, Engineer, Gasworks, Macclesfield.
" 28	London, S.E.—Painting, &c., at Infirmary	Lambeth Guardians	Guardian's Offices, Brook-street, S.E.
<b>ROADS—</b>			
June 23	Surbiton—Making-up Roads	Urban District Council	S. Mather, Surveyor's Office, Victoria-road, Surbiton.
" 24	Tewkesbury—Paving Flags	Corporation	W. Ridler, Borough Surveyor, Tewkesbury.
" 24	Withington, Lancs.—Street Works	Urban District Council	A. H. Mountain, Surveyor, Town Hall, Withington.
" 24	Kempston, near Bedford—Street Works	Urban District Council	W. Payne, Clerk, Offices, Bedford-road, Kempston.
" 26	Folkestone—Three Roads		H. B. Bradley, 52, Sandgate-road, Folkestone.
" 26	Cheriton, Kent—Three New Roads	Limehouse Board of Works	Marler and Co., 95A, Gloucester-road, South Kensington.
" 26	London, E.—Granite and Paving Works	Urban District Council	S. G. Ratcliff, Clerk, White Horse-st. Commercial-rd. East, E.
" 26	Tredegar, Mon.—Street Works	Corporation	W. C. Widdowson, Surveyor, Town Hall, Tredegar.
" 27	Southampton—Street Works	Urban District Council	W. B. G. Bennett, Engineer, Municipal Offices, Southampton.
" 28	Winton, Bournemouth—Granite	Urban District Council	W. T. Streather, Surveyor, Council Offices, Winton.
" 28	North Walsham—Granite	Urban District Council	Surveyor, Council Offices, North Walsham.
" 28	Thame—Broken Granite	Urban District Council	D. W. Slocombe, 27, Park-street, Thame.
" 30	Wolverhampton—Granite Setts	Streets Committee	J. W. Bradley, Surveyor, Town Hall, Wolverhampton.
" 30	Little Woolton, Liverpool—Macadam	Urban District Council	R. Simmons, Surveyor, Grange-lane, Gateacre, nr. Liverpool.
July 4	Acton—Paving, Kerbing, and Channelling	Urban District Council	Surveyor, Council Offices, Acton.
" 5	Hales Owen—Paving Works	Worcester County Council	J. H. Garrett, County-rd. Surveyor, Shire Hall, Worcester.
<b>SANITARY—</b>			
June 26	Bridgend—Sewerage Works	Penybont Main Sewerage Board	E. Cousins & Son, Engineers, Palace-chbrs., Westminster.
" 28	London, S.E.—Barging away Dust, &c.	St. Mary Magdalen's Vestry, Bermondsey	F. Ryall, Vestry Clerk, Bermondsey Town Hall, Spa-rd., S.E.
July 1	Hythe, Kent—Sewers	Corporation	E. S. Wilks, 2, Douglas-avenue, Hythe.
" 3	Wickham Market, Suffolk—Alterations	Guardians of Plomesgate Union	Henry J. Wright, 4, Museum-street, Ipswich.
" 5	Westminster, S.W.—Sewer and Wood Paving Works	Vestry	Survey, Vestry Offices, Westminster.
" 11	South Mimms—Sewerage Works	Rural District Council	W. H. Mansbridge, 40, High-street, Barnet.
" 15	Dublin—Drainage Works	Corporation	S. Harty, City Engineer, City Hall, Dublin.

COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
June 27	Edinburgh—County Buildings	£200, £100, £50	Midlothian County Council.
" 30	Wakefield—Central Buildings	£50, £30, £20	Wakefield Industrial Society, Ltd., Bank-street, Wakefield.
" 30	Buckie, Scotland—Bridge over Burn	£26 5s.	Commissioners.
July 3	Harrogate—Kursaal	£150, £100, £75	Corporation.
" 3	Lichfield—Grammar School	£20	H. H. Brown, Clerk to Governors, Lichfield.
" 18	Tendring—Sewerage Scheme	£21	District Council.
" 27	Plumstead—Municipal Buildings and Public Library	£100, £75, £50...	Edwin Hughes, Clerk, Vestry Hall, Maxey-road, Plumstead.
Sept. 1	Otley—Isolation Hospital	£30, £15	C. V. Newstead, Clerk, Wharfedale Union Joint Hospital Committee, Union Offices, Boroughgate, Otley.



Property and Land Sales.

CHADWELL HEATH, ESSEX.—Adjoining the G.E.R. main line station, ten miles from town, and close to Ilford, the highly important and fully ripe FREEHOLD BUILDING ESTATE of 58 acres, occupying an unusually fine position, with extensive frontages to existing roads, and very favourably circumstanced for immediate development to cope with the rapidly growing demand for small villas in this locality. Gravel subsoil.

MESSRS. KEMSLEY will SELL the above by AUCTION at the MART, E.C., on MONDAY, JULY 10th, at TWO o'clock, in One Lot. Particulars of Messrs. E. F. and H. LONDON, solicitors, 53, New Broad-street, E.C.; and of the AUCTIONEERS, 41, Bishopsgate-street-within, E.C., and at Romford and Woodford Green.

FINCHLEY.—Important Sale of about 24 acres of exceedingly eligible FREEHOLD BUILDING LAND, occupying exceptionally fine and elevated positions on the main London road and Nether-street, five minutes from Finchley Junction (G.N.R.), eight miles from town, and unquestionably some of the choicest land available in the northern suburbs for immediate building operations.

MESSRS. KEMSLEY will SELL by AUCTION at the Mart, E.C., on MONDAY, JULY 10th, at TWO o'clock, in Four Lots, the valuable Freehold Properties, comprising the attractive residence, Field Cottage, Ballards-lane (the main road to Barnet), together with the outbuildings and grounds extending to about ten acres, and having valuable frontages to Ballards-lane and Long-lane; the highly important block of Building Land of nearly nine acres, situate nearly opposite the above, with extensive frontage to the main road; two blocks of very eligible Land, with valuable frontages to Nether-street, and comprising an area of about three and a quarter and two acres respectively. Each of the properties lend themselves very readily to economical development, and are in every respect adapted and thoroughly ripe for the erection of a superior class of property, for which the demand at Finchley is much in excess of the supply.

Particulars of Messrs. CARTER, VINCENT, DOUGLAS, JONES and Co., Solicitors, Bangor; of A. STOKES, Esq., Solicitor, 43, Bedford-row, W.C.; and of the AUCTIONEERS, 41, Bishopsgate-street-within, E.C., and at Woodford Green and Romford.

TO LAND SOCIETIES, BUILDERS, and SPECULATORS.—LEATHERHEAD, Surrey.—Valuable FREEHOLD BUILDING ESTATE of about 10 acres, occupying an elevated site in close proximity to the town and its two railway stations, to be SOLD by AUCTION by Messrs. WHITE and SONS, at the Swan Hotel, Leatherhead, on FRIDAY, JUNE 23rd, 1899, at Five o'clock, in One Lot. The property is ripe for development, and there is a valuable vein of gravel on it available for road making.

For particulars and conditions of sale and plans attached, apply to Messrs. WHITE and SON, Auctioneers, Land Agents, and Valuers; or Messrs. HART, SCARES, and HODGES, Solicitors, both at Dorking and Leatherhead.

SALE DAYS for the Year 1899.  
Messrs.

FAREBROTHER, ELLIS, EGERTON, BEECH, GALSWORTHY, and CO. beg to announce that the undermentioned dates have been fixed for their AUCTIONS of FREEHOLD, Copyhold, and Leasehold ESTATES, Reversions, Shares, Life Interests, &c., at the AUCTION MART, Tokenhouse-yard, E.C.

Other appointments for intermediate Sales will also be arranged.

Thursday, June 22	Thursday, Sept. 21
Thursday, June 29	Thursday, Oct. 12
Thursday, July 6	Thursday, Oct. 26
Thursday, July 13	Thursday, Nov. 16
Thursday, July 20	Thursday, Nov. 23
Thursday, July 27	Thursday, Dec. 7
Thursday, Aug. 3	Thursday, Dec. 14
Thursday, Aug. 10	

Messrs. FAREBROTHER, ELLIS, and CO. publish in the advertisement columns of "The Times," "Standard," and "Morning Post," every Saturday a list of their forthcoming Sales by Auction. They also issue on the first of every month a schedule of properties to be let or sold, comprising landed and residential estates, farms, freehold and leasehold houses, City offices and warehouses, ground-rents, and investments generally, which will be forwarded free of charge on application.—No. 29, Fleet-street, Temple Bar, and 18, Old Broad-street, E.C.

By order of the Trustees of the St. Clement Danes Holborn Estate Charity, High Holborn.—Letting on Building Leases of Valuable Sites for Shops, Trade Premises, and Dwellings.

THURGOOD and MARTIN have received instructions to LET by AUCTION, on building Leases, on WEDNESDAY, JUNE 28th, 1899, at TWO o'clock precisely, in Three Lots, Nos. 101 to 104, High Holborn, and neighbouring PLOTS of LAND on the east and west sides of Dean-street, well situate in and near the main thoroughfare from the City to the West End, in one of the busiest and widest parts, having areas varying from 7,374ft. to 3,121ft. respectively. Very valuable sites for important shops, warehouses, and dwellings.

Particulars and conditions of letting, with plans, may be had of Messrs. J. C. and W. W. ISAACSON, Solicitors, 11, New-inn, Strand, W.C.; H. C. BOYES, Esq., Ormond House, Great Trinity-lane, E.C., Architect and Surveyor to the Trustees; at the place of sale; and of the AUCTIONEERS, 27, Chancery-lane, W.C.

ANSELL and MALLOWS, Architectural Draughtsmen and Quantity Surveyors, 21, Buckingham-street, Strand, W.C.

R. I. B. A. EXAMS. PREPARATION, personally or by correspondence, in three, six, nine, or twelve months' courses. Architectural Lending Library. Special three months' finishing courses.—For full particulars apply to Messrs. HOWGATE and BOND, Associates R.I.B.A., Perchard House, 70, Gower-street, W.C. (close to the British Museum).

ARCHITECTURAL Institute, Society of Architects, and Civil Service Technical Examinations. Preparation by correspondence, personally, or in residence. Seventeen first places.—MIDDLETON and CARDEN, 19, Craven-st., W.C.

MASON'S CHISEL, STEEL,  $\frac{1}{2}$  to  $1\frac{1}{8}$  octagon, 12s. to 16s. per cwt.; Chisels, 6d. lb.; Best Cast Steel for Lettering Tools, &c., from  $\frac{1}{4}$  in. to 4 in. lb.—E. DEALEY, Moore-street, Sheffield.

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The charge for Advertisements under this heading is 1s. 6d. per insertion not exceeding four lines, and 6d. per line afterwards, prepaid. Three insertions may be had for the price of two.

WANTED, at a small Terra-cotta Works near London, a thoroughly experienced KILN-SETTER and BURNER (to fill up time with pressing). Abstainer preferred.—Apply, stating terms, to "Kiln," Box, 1074 "BUILDERS' JOURNAL" Office.

QUANTITY SURVEYOR (ASSISTANT) required; must be thoroughly competent to measure up, abstract and bill.—Reply, stating experience and salary required, to M. and C., 106, Colmore Row, Birmingham.

ARCHITECT AND SURVEYOR'S ASSISTANT required in Leeds office. Must be good draughtsman. One with a knowledge of quantities preferred. State age, experience, and salary. Apply Box 1096, BUILDERS' JOURNAL Office.

CLERK of WORKS WANTED for an important Ecclesiastical Restoration. State full particulars and salary desired to "No. 133," care of Castle Lamb and Storr, 133, Salisbury Square, Fleet Street, London, E.C.

HENRY HOPE AND SONS, LIMITED, wrought steel window and casement makers and glass roofing contractors, require a London REPRESENTATIVE, with knowledge of the trade. Good opening for a smart, energetic young man. Preference given to one with experience in drawing office.—Apply by letter, stating qualifications and salary required, to 55, Lionel-street, Birmingham.

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YOUNG ARCHITECT, A.R.I.B.A., ASSISTS in the PREPARATION OF DRAWINGS, TRACINGS, &c., at his own Office. G. SCORER, 28, Newman-street, W.

ARCHITECTS and QUANTITY SURVEYORS—Temporary ASSISTANCE rendered in taking-off, measuring, &c., either by commission or the hour; reference given.—"H. R. A.," 30, Fontarabia-road, Clapham Common.

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By Royal Letters



Patent No. 814.

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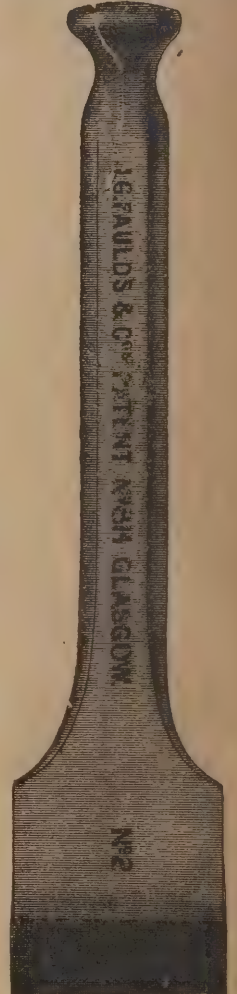
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Reversible Cutter,  
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JUNE 28, 1899.

No. CCXXIX.

## An Architectural Causerie.

**Architecture in the Novel: "The Return of the Native."**

PERHAPS no novelist has interwoven descriptions of landscape and surroundings so intimately with the movement of the story, and the actions of the chief characters as Thomas Hardy. It is not without reason that the land of his birth and art, says Lionel Johnson, was called after its ancient name Wessex. "Thomas Hardy would have us feel the sentiment of historical continuity from the old times to ours; the storms of violent fortune, the slow touches of change which have left their trace upon the land (and we might add the architecture) whilst leaving it at heart the same." He does for the Wessex country that which a German novelist appears to have partly done for the German nation, tracing, from generation to generation, the outward changes and the sentiments in each period, the effects of new and at first crude and undisciplined thought operating upon and gradually supplanting the old. In the background of these present day dramas—with their characters, some ancient and mediaeval, others partly touched by modern thought and emotion, others again who have caught the emotional trend, but lack the power and will to direct themselves wisely in the new channels—is the history of Wessex and its inhabitants; sometimes touching the reader closely, as in that description of the shearing in the ancient barn, in which the picture of to-day in its setting of four hundred years does not produce that sharp contrast between ancient and modern times; at others appealing to us in a more remote strain, as in the "Return of the Native," when the past seized upon Yeobright with its shadowy hands, and held him to listen to its tale. "His imagination would then people the spot with its ancient inhabitants, forgotten Celtic tribes trod their tracks about him, and he could almost live among them, look in their faces, and see them standing beside the barrows which swelled around, untouched and perfect as at the time of their erection. Those of the dyed barbarians who had chosen the cultivable tracts were, in comparison with those who had left their marks here, as writers on paper beside writers on parchment. Their records had perished long ago by the plough, while the works of these remained." In "The Return of the Native," there are, perhaps, fewer backgrounds of ancient buildings than in "Tess of the D'Auberville" or "Jude the Obscure," but frequent touches occur which give an architectural setting to the scene, quite as clearly as if an actual edifice had been visualised for us, or a vision pictured like the one Jude conjured up of Christminster from the top of the barn. An illustration of this occurs

in the second chapter, when humanity appears upon Egdon Heath. "The Reddleman resting by the wayside on his journey across the heath becomes aware of a form surmounting the barrow. There the form stood motionless as the hill beneath. Above the plain rose the hill, above the hill rose the barrow, above the figure was nothing that could be mapped elsewhere than on a celestial globe. Such a perfect, delicate, and necessary finish did the figure give to the pile of hills that it seemed to be the only obvious justification of their outline. Without it there was the dome without the lantern; with it the architectural demands of the mass were satisfied. The scene was strangely homogeneous; the vale, the upland, the barrow, and the figure above it amounted only to unity." Although in this, perhaps, finest novel by Thomas Hardy there are not so many deliberate pictures of the old world and its architecture, a second and third perusal will increase the reader's admira-

in the shape of a fan. Some were large and near, glowing scarlet red from the shade like wounds in a black hide. Some were Maenades with wing faces and flowing hair. These tintured the silent bosom of the clouds above and lit up their ephemeral caves which seemed thenceforth to become scalding caldrons. Perhaps as many as thirty bonfires could be counted within the whole bounds of the district. It was as if these men and boys had suddenly dived into past ages, and fetched therefrom an hour and deed, which had before been familiar with this spot. The ashes of the original British pyre which blazed from these summits lay fresh and undisturbed in the barrows beneath their tread. Festival fires to Thor and Woden had followed on the same ground and duly had their day." The passages chosen illustrate the beautiful yet sober way in which the reader is made to feel how one age is linked to another, and how in the slow changes taking place from time to time, there stands out some custom, some



BEEBLEIGH ABBEY, MALDON. DRAWN BY H. F. WARING. (See p. 305.)

tion for the genius of the writer, who, while unfolding a powerful tragedy of absorbing interest, is also giving us a picture of the past inhabitants who peopled the spot, their struggles, customs, and art, suggesting by the spirit rather than by the cataloguing of facts. In Chapter III. there is a wonderful description of the custom of the country, in which the actual scene described seems to be almost overshadowed by the pictured suggestion of the past. It is too long to quote the whole of it, but one or two extracts may give the reader some idea of the way in which a scene in the present is given an historical value, and made more impressive by being deftly linked with the past. "Red suns and tufts of fire, one by one, begin to arise, flecking the whole country around. They were the bonfires of other parishes and hamlets engaged in the same sort of commemoration. Some were distant and stood in a dense atmosphere, so that bundles of pale straw-like beams radiated around them

local rite, some ancient edifice which marks the road along which we have come, and makes present the doings of our ancestors. Another passage suggestive of the past is that where Yeobright, a very modern young man, and an itinerant open air preacher, lectures from the top of the ancient tumulus. "Round him upon the slopes of the barrow, a number of heathmen and women were reclining or sitting at their ease. They listened to the words of the man in their midst who was preaching while they abstractedly pulled heather, stripped ferns, or tossed pebbles down the slope." This scene—not at all an uncommon one at the present day—with the itinerant preacher holding forth as did his ancestors from some ancient land mark, such as a poultry cross or a market place, reminds us of the time when the freemen gathered round the moot hill to "order their own industry and to frame their own laws." Both they and the Yeobrights sought and seek the same end.

G. LI. M



## On Reflection.

### The Royal Academy Again.

THE subject of the Reform of the Royal Academy is like the Eastern question: it is always with us,—in a more or less acute form. It has been cropping up at intervals during the last sixty years, and, if the present national indifference to artistic matters continues so long, it seems likely to form a subject for debate for sixty years to come. We are not aware that the Academy has been doing anything unusually heinous within the past few weeks, but for some reason or other there seems to be just now a general agreement to bring its shortcomings once more prominently before the public. The "Morning Post" has been devoting a good many columns to letters setting forth anew the familiar indictment: the disregard of the recommendations of the Parliamentary Committee of 1836 and the Royal Commission of 1863; the acceptance of privileges and the repudiation of the responsibilities they imply; the unfair treatment of outside artists; the bad management of the annual exhibitions, and so on. The "Daily Chronicle" has published an article showing how the Academicians monopolise "the line," and leading to the conclusion that it is almost useless for the unprivileged person to send to the Academy at all; or, to express the matter in the mathematical form adopted by the author of this curious investigation, the outsider's chance of getting his picture hung on the line is exactly 1 in 181. Other newspapers have chipped in with more or less interesting suggestions and comments, and Lord Stanley of Alderley has emphasised the criticisms by making them the text for a series of questions addressed to the Government in the House of Lords. Altogether there has been quite a little flutter of interest in the Academy during the past few days.

### Art as a Joke.

LORD SALISBURY'S reply to Lord Stanley, of Alderley, was significant in its way. It was characterised by that sarcastic humour with which the Premier is wont to enliven the discussion of matters he regards as of merely trifling importance. The questioner had recited some of the unfulfilled recommendations of the Select Committee of '36 and the Royal Commission of '63, and had asked whether the Government would give effect to these recommendations. To the plain man it might seem fairly obvious that a national institution which has been weighed in the balances and found wanting by two separate parliamentary inquiries ought to be compelled to put its house in order, or to lose some of its special privileges. That however, is not Lord Salisbury's view. It strikes him as a humorous thing that anyone should expect the recommendation of a Royal Commission to be carried out. Apparently he looks upon a Royal Commission as a sort of parlour game—innocent recreation for winter evenings; if the commissioners make a report, no one should treat it seriously,—it is all part of the game. The concerns of Art are utterly trivial in Lord Salisbury's eyes. "We are much too busy," he says in effect, "to trouble about these trifling matters. Why not let the Royal Academy muddle on as it has done in the past? It is really not much worse than it would be likely to be if we make it a Government department. And as for what a Royal Commission has said, we need not trouble about that, nobody pays any attention to Royal Commissions." Lord Stanley of Alderley is reported to have declared himself "quite satisfied" with this reply, to which we can only say that some people are very easily satisfied. And so the question of reform is brushed aside for awhile,

That it will emerge again is as certain as the rising of to-morrow's sun. But is it not a melancholy commentary on the present state of art culture and art enthusiasm in England that the Prime Minister can treat in this jocose and flippant way a question of vital importance to every artistic interest in the land, and scarcely a voice be raised in protest?

### Municipal Enterprise and its Foes.

"SOCIALISM as a living creed is a thing of the past, but it has given birth to much more dangerous reptiles. They are so shapeless that their capacity for harm is quite obscure to the peaceful citizen whose mind is rightly filled with his own immediate business concerns. The deadly poison to the life of industry and to social peace that lurks in subtle guise within the hidden fangs of this nebulous offspring of socialism is not discerned by the many: they are only attracted by the glittering, many-hued scales of its rainbow-form." These awe-inspiring words are a contribution by the "Liberty Review," the organ of the Liberty and Property Defence League, to the discussion of the interesting and not unimportant question of the proper limits of municipal enterprise. Our contemporary has observed—what is indeed a fairly patent fact—that there is a growing tendency for local authorities to concern themselves with many matters that have hitherto been either wholly neglected or regarded as belonging to the special preserves of the private speculator. That the people of a locality should, through their representatives, establish and manage for the public good such undertakings as gas and water-works, tramways, markets, baths, and libraries, seems to our contemporary a state of affairs so monstrous that it can only be fitly characterised by the amazing metaphors we have quoted. We have no doubt that many of our readers to whose lot it has fallen to have a share in the erection of a free public library or a municipal swimming bath, or in the carrying out of some other of those undertakings that fill the soul of the doctrinaire individualist with a consuming rage, have experienced an added pleasure in their work from the consciousness that it would tend rather to the well-being of a community than to the aggrandisement of an individual. However that may be, it is not easy to mistake the signs of the times; the trend of modern life is towards collective action in matters that concern the community as a whole. Though we are far from maintaining that every recent development of municipal enterprise has been wholly wise, we are in no doubt as to the essential rightness of the general movement. The L. and P.D.L. will arrest it if they can, but their efforts are not more likely to succeed than those, let us say, of the natural history student who should seek to extract deadly poison from the hidden fangs of a nebulous reptile.

### The Seine.

THE traveller who wants a beautiful trip through an unspoiled country will find it on the Newhaven and Dieppe route to Paris; at Rouen the line strikes the Seine—there a wide estuary with wooded islets; the scenery is that of Sussex, a semi-circle of downs rising behind the old capital of Normandy with its grey old towers and the immense spire of iron openwork which Viollet-le-Duc added to the cathedral shooting up into the clear sky. From this point to Paris the railway crosses the river no less than twenty-two times; the whole countryside is a garden of farms and orchards, with village spires here and there, and châteaux surrounded by that close growth of young timber which bespeaks at once a frugal people and the operation of the Code Napoleon. The stream soon begins to narrow, but it is every-

where quite a rustic river with only an occasional barge and rarely a pleasure party. Within the circuit of Paris it affords an extraordinary contrast to the Thames; its average width is 180 yards, though it is somewhat more at the Pont Neuf; the water is a clear green and spanned by a great number of bridges at very short intervals in clean-cut light stonework. It is embanked throughout, but has this peculiarity: the retaining wall does not rise sheer from the water; there is a towing path on each side of such width as to resemble a beach, and upon it at all times may be seen immense heaps and mounds of sand and gravel for building and other purposes: the height of the embankment and the great size of the buildings tend undoubtedly to dwarf the stream. The service of steamers—"the swallows of Paris"—is excellent; they are screw boats, with plenty of seats, and pass incessantly up and down the river, from Vincennes in the south-east to Meudon in the north-west. They afford a breezy, delightful method of seeing the town and are exceedingly popular with all classes; but next year they will be thronged, for the river passes right through the exhibition grounds between the Eiffel Tower and the Trocadero. The Seine lacks the majestic width of the Thames, with its great docks and shipping, the busy life of our commercial estuary, but it is bright and clean, and adds much to the beauty of Paris; its most picturesque part is where it divides into two channels surrounding the little island on which stands Notre Dame. At night it is beautiful with its many lights on the banks, its red lamps on the bridges to guide the steersmen, and the illuminated steamers shooting swiftly beneath them. London has a grander stream, but much remains to be done before it is thoroughly utilised for passenger traffic and made as beautiful as the Parisians have made the Seine.

## THE "BUILDERS' JOURNAL" COMPETITION.

### EXHIBITION OF DESIGNS.

IN response to our invitation for designs for a country house,

#### 134 Sets of Drawings

have been submitted. These will shortly be adjudicated upon by Mr. Edward S. Prior, who—as we announced last week—has consented to act as assessor. We hope to be able to publish the awards, together with reproductions of the winning designs, in our next week's issue.

By kind permission of the Committee of the Architectural Association,

#### A Public Exhibition

of the designs submitted will be held at the rooms of the Association, 56, Great Marlborough Street, W., on Monday, July 3rd, to Saturday, July 8th, between the hours of 10 a.m. and 7 p.m.

In addition to the commission for the building of the house at Hythe, which will, we hope and expect, fall to the lot of the author of one of the premiated designs, we hope to be able to place

#### Other Commissions

in the hands of some of the architects who have taken part in this competition, another client having intimated his intention of erecting houses on another estate from some of the designs sent in. Thus, not only the winner of the first premium, but five or six other competitors will, we have reason to believe, have an opportunity afforded them of carrying out, on the usual professional terms, the designs they have submitted.





ST. MARY'S CHURCH, MALDON. DRAWN BY H. F. WARING.

## MALDON.

A PICTURESQUE ESSEX  
VILLAGE DESCRIBED WITH PEN  
AND PENCIL.

By H. F. WARING.

**B**OTH from the historical and artistic point of view Maldon is interesting to artist and student alike. Many stone implements of Neolithic man have been found here, and during the excavations in connection with the Southend Railway, Roman remains, including coins, terra-cotta vessels, and implements of various kinds were come upon. About forty miles from London, situated on a hill, Maldon commands a splendid view of the surrounding country, the beauty of the scene being considerably enhanced by the winding Blackwater stretching away in the distance.

Walking up the steep hill from the station, after passing various interesting buildings, amongst others St. Peter's Church, now disused, the Town Hall, and some fine old Georgian houses, we come to All Saints' Church, one of the most interesting churches in the county. This is built in stone and flint and is especially interesting for its unique tower, which on plan is in the form of an equilateral triangle. This tower has both semi-circular and lancet windows, and is probably of the Transition period. It is surmounted by an hexagonal spire, having pinnacles at its three angles. Various theories have been put forward to account for the triangular plan—amongst others, that it is emblematic of the Trinity. The church consists of a nave of four bays and aisles of three; the pillars supporting the arches have clustered caps, they are of Purbeck marble and very delicate. The south aisle, formerly a chapel, dedicated to the Holy Trinity and containing three chantries, was founded by Robert D'Arcy, who died in 1428 and is buried here. When this was extended its interesting piscina was placed in the newer east wall. The very fine Early English sedilia on the south side attracts attention, as does also, above this, the carving running round the Early Decorated windows. The windows, in themselves, are also very fine. The north side of the church is Perpendicular, and the north aisle was taken down during the last century.

The east window is especially noticeable. This is of the same date as the sedilia, 1276, and the tracery is supposed to be the finest in the county of this date. This has been filled in with modern stained glass. Portions of the old rood screen, consisting of very well carved oak panels, may be seen at the west end. These, however, have been covered with ground-glass put on varnish while wet, to

represent stonework, as I was informed with pride. Formerly many good brasses were in this church; these, however, have mostly been taken from their stone beds.

Passing through a gateway opposite the tower of this church, we enter the courtyard of the Blue Boar Hotel, where some good half-timber work on the left hand side is to be seen. The Earls of Oxford occasionally resided at this house previous to its becoming a hostelry, and we find it mentioned in 1632.

The barn at the Spital Farm is certainly worthy of note. This is a Norman building, cruciform in plan, in the materials of which Roman tiles and bricks are found in considerable quantities, giving rise to the theory that the site was probably in former times occupied by a Roman edifice. Formerly it was a hospital for lepers, dedicated to St. Giles, and is said to have been founded by one of the English kings. In the reign of Henry IV. it reverted to the Crown, the master of the hospital having failed to do his duty.

Beeleigh Abbey was, in Mediaeval times, a religious house of much importance. It belonged to the Premonstratensian order—an order instituted in 1120 by the Archbishop of Magdeburg. Though much of the old place has been altered, a few of the old apartments happily remain unchanged. The abbey, according to the authority Leland, was founded in 1180; the monks migrated from an adjoining monastery at Great Parndon, Essex, and eventually became a powerful and rich community.

The church, it is thought, once stood in the garden of the abbey, though no trace of this can now be found. The abbey consists of a group of buildings dating from all periods; the plan, roughly, is in the form of a rectangle with projecting transepts. On the entrance door a curious knocker is seen. Continuing through a small archway, we arrive at a passage having a large doorway at the end, which formerly probably led to the cloisters; on the right a blocked up Tudor doorway is seen, which led to a still existing apartment—the refectory. This measures about 40ft. by 20ft., and is divided down its length by a row of three columns of Purbeck marble. These columns are about 6ft. high, and upon them rests a groined roof, supported on delicate corbels, opposite the pillars; these are all different. The groining is plain, consisting of chamfered stone ribs. The date of this room is probably about 1225. In the place of four lancet windows on the front wall are two large Perpendicular windows, and traces of two others. In the western wall is a large fireplace, the spandrels of which are filled in with carving. This is supposed to have been the canopy of the tomb of Henry Bouchier, Earl of Eu, in Normandy, and Essex, Lord Treasurer of England, and his lady, Isabella

Neville, sister of Richard Plantagenet, Duke of York (father of Edward IV.), both of whom, it is known, were buried in the chapel of the Virgin Mary in this abbey. He died in 1483.

An Early English stone vaulted chamber is to the north of the refectory, running east and west, with a lancet window at the east end and a door opposite. Over the refectory is a large room, also about 40ft. in length, with an open Tudor wooden arched roof; this was probably the dormitory. At the south end is a screen of oak panelling, reaching from a cross-beam, resting on brick-nogged stud-work into the roof, which it touches only by a king-post. The windows in the east front wall are evidently Tudor insertions into Early English lancets. These are six in number, of two lights each. The sills are glazed tiles, red and yellow, of the unusual size of 10in. square. On the west side are three large Early English lancets, possibly doorways, now bricked up. The doorways on the landing are also Early English, and the doorways on the other side of the passage lead to some Elizabethan rooms, which are quaint in character, but have not the remarkable features of the earlier work. The south-west apartment has in its north wall two good Perpendicular windows, each of two lights, mullioned and transomed; these are very close together, and are now blocked up. Directly beneath the two windows is a blocked up Early English doorway, corresponding to the one just against the present south door. This was probably a passage leading to the cloisters on the ground floor.

The apartment over this, on the second floor, which is reached by the original oak stairs, is called the penance chamber. Beyond this is an inner chamber, without any sign of a window; this was probably used for extreme penance. Externally, seen from the south door, the brickwork between the upright timbers is noticeable for its varied patterns. Turning to the right after leaving this doorway, we get from the outside the best view of the oldest and most interesting work of the abbey, but this purely Early English work is much spoiled in appearance by the presence of a more modern rough stone buttress. The chief feature is a very good double doorway, which is the entrance to the chapter-house. This is popularly called the chapel, but the want of a piscina and distinctive east window disproves this theory.

Entering by this door, we find that the apartment runs east and west and is divided by a row of three octagonal columns, 7ft. high, of Purbeck marble. These, together with the corbels, are of inferior workmanship and rather later date than those in the refectory. They support a groined ceiling, divided into eight bays, four of which have bosses. At the east end are two square-headed decorated windows, one blocked in, the other partially



fo, formerly of two lights each and cinquefoiled heads. The west end is the part of most interest. The double doorway, divided by triple jamb shafts, with the corners richly carved with dog tooth mouldings, has on each side a small window consisting of double lancets, divided by a jamb shaft with a quatrefoil above. Inside on the walls over the door are traces of a red-coloured frescoed pattern, as in the cellar to the north of the refectory. In both the north and south walls are two lancet windows, also a decorated window on the south, now partially blocked up. The very oldest work is at the southern end of the east

staircase in the old north wall was disclosed. A decorated doorway and the perpendicular windows are amongst the most interesting features.

In Chequers Lane, built into the wall of the Friary garden, may be seen many old stones, some being worked. These are most likely some remains of the old Carmelite friary that once stood on this site.

Leaving Maldon and crossing the Blackwater we come to the quaint little hamlet of Heybridge. The ancient name, which is used in the Domesday Survey, was Tidwolditune. The squat old late Norman church of St. Andrew first

the natural beauties of the place. The artist, indeed, need not go far to find them. Does he fancy red-roofed cottages, he has but to cross the Blackwater, and, turning, on a still evening, he will see Maldon, enshrouded in a faint mist, whilst scattered here and there gold and crimson patches flash out, as the last rays of the departing sun glint on the old tilework. Landscape, perhaps, attracts him more. Let him shake off drowsy sleep at break of day, and hie him along the sea wall to the saltings, where the herons lazily flap, and the curlew, in keeping with the intense loneliness of the scene, utters its mournful cry as it passes overhead. Here will delight seize upon his very soul, for surely nothing was ever more magnificent than the great glowing orb now fast appearing above the horizon,—the oozy mud and glistening water endeavouring to find in their depths an echo of its grandeur.

## ARCHITECTURE: WHAT IS IT?\*

BY JAMES A. MORRIS.

IN venturing once again to lecture before the Edinburgh Architectural Society, largely consisting as it does of the younger architects of Edinburgh, I think it will be well if I at once recognise that Architecture touches and overlaps many arts and many minds; and whatever our individual yearnings may be, or in whichever field of art we labour, we have a strong and common bond uniting us all, whether, indeed, we be direct workers in its broad fields, or more happily, perhaps, of those who help and encourage such by reason of sympathetic appreciation and friendly counsel.

In this room then, I take it, we are all, whether by actual work or by sympathy, labouring in some fashion together, and seeking in greater or less degree to make not our own lives only and our own surroundings, but the lives and surroundings of others also, less complex and more in harmony with the simplicity of that great and beautiful background of Nature, before which we stand, out of which we come, and part of which, in some measure, we also are.

To this end, and to the better appreciation of the purpose of my paper, I will try to make it as simple and as little technical as possible, and, in speaking of Architecture, I will endeavour to treat of it as I think you would wish; not in its technical or archaeological aspects, but in its human, and greater, and wider, and living meaning; as of a thing potent and real, as are hate and love, fear, life or death; as, indeed, the dominant art, and not without some meaning also, the mother art; for in her and under her domination all art, of whatever kind, reaches its highest excellence, whether, indeed, it be sculpture, or painting, or the humbler, but scarcely less beautiful achievement, of the craftsman's handiwork. Severed from Architecture, these all lose much of power and sweetness, and, as the migratory easel picture is less noble in degree when other than as a gem in the architectural setting, so, the more separate and divided the arts live, so much do they become less in power and potency. For, it is but a truism to say, the family of art is one and undivided.

Rather, then, than speak only of the history of Architecture, which we all know, or of any of its great cathedrals and churches, entrancing as such a subject must ever be, I would prefer to speak of the thing itself, of its spirit, of what to my mind it is; and to endeavour to show you that, to be an art at all, and not merely building, it must be an expression—best, perhaps, when an unconscious, but none the less real, expression—of ourselves and of our aspirations, such as they are; not less than of our everyday lives.

We ask ourselves, then, what is Architecture? Let me try to answer. A year or two ago,

\* A paper read before the Edinburgh Architectural Society.



THE BLUE BOAR YARD, MALDON. DRAWN BY H. F. WARING.

front, where a square headed, a narrow lancet, and a curious low-crowned window are to be seen outside; these are all early English.

St. Mary's Church, standing on what is probably a Saxon foundation, calls for attention. Of the old Saxon church no remains are left, but of the Norman we see traces of the characteristic stonework, built into the buttresses to the tower of the new, whilst remains of the old Norman chancel arch are still visible. In the seventeenth century the tower collapsed, damaging the body of the church considerably. In 1628, Charles I. granted a royal brief for subscriptions wherewith to erect a new tower, which was rebuilt in red brick. This is a singularly graceful tower; at the same time the huge buttresses give it the appearance of massive strength. This tower, which is very conspicuous on approaching the town up the Blackwater, was originally used as a sea mark, and the hexagonal lantern of the beacon still exists. This church was totally restored when the rood

arrests attention. This building was founded in the time of Henry I. between 1160 and 1181. It consists of nave, chancel, tower, and south porch. The tower, curiously, is wider than the nave and lower, and is supported at its south-west angle by a large buttress, whilst at the north-west angle is a stair turret. In the three sides of the tower are windows, and in the jamb of the north one are many Roman tiles. The nave walls are Norman, and the characteristic semicircular doorways still remain intact. Two good Norman windows are in the nave wall. Internally, steps to the rood loft are still extant in the north wall, whilst remains of a piscina and a Purbeck marble font bowl remain. Some carved brackets under the central nave beam are interesting, as are also some old pews.

Besides the buildings mentioned are many more, all interesting, whilst numerous old sites and foundations are scattered throughout the district, making it one of great interest to the antiquarian. A word, too, must be said for





WHARVES ON THE BLACKWATER, MALDON. DRAWN BY H. F. WARING.

while waiting in a bookseller's shop, I chanced to pick up the first volume of the then recently published "Chambers' Encyclopædia," in many ways an interesting and up-to-date work, fairly representative of one side of modern thought; and as an architect, curious to see what its definition of Architecture might be, I turned to the subject, and there, in the very first sentence of the article, I found it written, that "Architecture is the art of building or construction." Now, while this may be accepted as an undoubtedly popular definition, it seems to me that one might quite as accurately define poetry as the art of grammar; for, if it be accepted that a knowledge of building or constructing is to make one an architect, it may be quite as reasonably and as logically argued that a knowledge of grammar will make one a poet—a contention as unreasonable and illogical, surely, as it is absurd.

Poetry is not merely the art or science of grammar; neither is Architecture merely the art or science of building or constructing; and we must draw a very broad distinction between these two. An architect must undoubtedly realise his architectural conceptions by the aid of good materials and sound construction; but it does not follow that either a knowledge of materials or the science of construction, or both, must of necessity make one an architect. The science of grammar, however sound its legs and wind, will never raise one to those lofty heights of imaginative thought wherein a man dreams dreams and sees visions; neither will it open to him the windows of earth, and air, and sky, and sea, and show him the glories within, which, having himself seen, he can thereafter sing of to his fellows. Moreover, while writing is one of the means, and perhaps the principal means, a poet has of expressing his thoughts, it must yet be remembered that all who write are not poets; neither, to my thinking, are all who build architects.

What, then, is Architecture? Poetry is something more than writing; and Architecture something more than building. Neither is it polished verse or balanced rhythm, that makes the truest poetry, any more than it is excessive care that constitutes big and noble thinking. First there must be in the heart the song of the poet, the musician, the architect, and then the means to voice the song will not be wanting. An old Scottish painter, a deep thinking and kindly man, said to me many years ago, "If a man has a real story to tell, something that the world is waiting to hear, then the means of telling the story will come also."

Of grammar, and building, I fear we must in truth say they are of the earth, earthly. Poetry, and the power to live the arts, is of divine origin, and can only be spiritually exercised and discerned. It will be well, then, for

us, I think, to consider of Architecture as a fine art, as it is, and not as merely utilitarian, or even commercial in its aims or end. If this be so, we must then, accept of it as something serious, something ennobling, existing in the same high world as poetry and music, and the sister arts; all of which are but different voices uttering the same high thought—"Truth!" which, said Corot, "is the first thing in Art, and the second, and the third. If a man knows, or cares, nothing for this spirit in Art, this ideal, then is he no true artist; and if he has this spirit, let it be never so feeble a spark, and does not submit to it and walk up to it, then is he no true man." The aim of an artist cannot be the accumulation of wealth, or the attainment of personal and selfish ends alone; but rather to live, as lived Michael Angelo, and, like him, to establish it as a principle that, "to live in credit is enough, if life be virtuously and honourably employed for the good of others and the benefit of posterity." This, then, is the spirit in which, I take it, we should all work, if we wish that our work should give pleasure to others, or be in itself at all lasting.

If we would only be content to be simple, and to think simply and naturally, then in the end would we learn to think bigly and well. Self-consciousness and affectation would much disappear, and if we cannot be great in ourselves we will at least be fitted to possess that next best gift, the power of discerning greatness in others. We cannot afford to play with our art, neither can we afford to

prostitute it, without hurt to our truer sensibilities.

None can trifle with, or lightly treat, what one reveres, and the lines of Matthew Arnold are as true of Architecture as they are of Poetry:—

What poets feel not when they make  
A pleasure in creating,  
The world, in its turn, will not take  
Pleasure in contemplating.

Or, as Holman Hunt recently said to painters, "If a work does not, on sober examination, give you the conviction that nature in that place is sweeter or nobler than you thought before, it is not good to you."

Is it uncharitable, then, to think that this is different, surely, from the spirit in which much of our modern work is carried through, wherein some seem to run architecture as they would a commercial business, the end and aim of which appears to be to get increase of work, and thereby money, forgetting how true in Art, above all else, are the words of Thomas Carlyle:—"The deepest depth of vulgarity is that of setting up money as the Ark of the Covenant." If we admit the necessity that to live one must make money, it does not follow that one must, of necessity, make that money by architecture. Now, we must be careful to distinguish between what has come to be called the profession of architecture, and Architecture itself; the which are two very different things. To this end, it may be well for us to-night, in



OLD LOCK, HEYBRIDGE. DRAWN BY H. F. WARING.



seeking to consider of what Architecture is, to disassociate from it altogether the merely money-getting or material business element, of which, in our daily work, we have all a sufficiently intimate acquaintance. Now, in this connection, here is a proposition, perhaps a fact, worth pondering; that as an almost invariable rule, and one with few exceptions, the biggest businesses in the architectural world, and those in which, if ever, architectural fortunes are made, are precisely those run on purely commercial principles, and those also are the businesses in which the architectural quality of the work is nearly always in the inverse ratio to the amount of work done. And why? Is it not because, through press of business, the principal often degenerates into the office feeder, merely bringing the grist to the mill, and leaving it to a

perhaps what I have indicated regarding its so-called professional, as opposed to its artistic side, may be a possible cause. He writes (I think my quotation is correct):—"Of all the arts, Architecture is the only one that has not been far surpassed by the moderns, except only statuary"—he is speaking, I take it, of classic architecture—"and as architects persist in copying the works of other men and other times, society has no respect for their productions." This latter pronouncement is irritating, because it is true; and is condemnatory of the senseless introduction of all forms and details in our buildings merely because they are old, forgetting altogether that they are in themselves sensible and beautiful, because they are parts of the expression of an ideal, and portions of a complete, but past, architectural faith and

and in the adjustment of lines one to another, that the essence of the art lies; and in that you will find the hope of attaining high excellence in great work." I have purposely directed your attention to these two opinions, because they are the expression of men of culture, intellectual prominence, and even, perhaps, of genius—men who, although not architects, are yet capable of expressing an opinion upon architecture which is of value.

To few men is a great mission in the arts given. A genius may be born perhaps once in a century; but is not genius after all just the power of seeing beyond and behind the surface of things; or as Coleridge has it, "One who carries the beauties of childhood throughout life."

As artists you and I may be very ordinary people and in our work commonplace enough, but let us at least seek to possess an ideal, and an unselfish one.

You may have been reminded a year or two ago, as I was, during the centenary celebrations of Thomas Carlyle, of one of his greatest utterances:—"All work is religion; and whatsoever work is not religion, may go and dwell among the Barbarians, Antinomians, Spinning Dervishes, or where it will: with me it shall find no harbour." No one, therefore, who does the best that in him lies, need be ashamed of his work. Of what one may be ashamed, is affectation and insincerity. In architecture especially, affectation is weakness, and insincerity is contemptible.

Our question, "What is Architecture?" Is as yet unanswered, and no one can define it for us in words. If, however, we have eyes to see, and the power to understand what we see, we will find an abundant answer in every line of a Greek temple, in every stone of a Mediaeval church, and in all work that is high in aspiration, joyous in realisation, noble in conception, and true in itself. Thus, was it, I feel sure, in those Renaissance days, wherein it was difficult sometimes to say, whether an artist was most of architect, painter, or sculptor. Those, whom it has become the custom to call "the old masters," often expressed themselves, more or less powerfully, in them all. They built, they painted, they made the dead rock all but live. Is such an age possible again? Scientific analysis, and commercial success, are the tests by which most things are judged; but still good work here and there is being done, and a hopeful sign is that among the better painters and art workers of the day, decorative feeling and a knowledge of the power of line is again being sought after and found; and when one realises that the consummation of line power is Architecture, is it over daring to assert that when a truer knowledge of what Architecture is becomes again universal, then also will it be found that under its roof-tree alone will a real union of the arts be possible?

Robert Louis Stevenson, in one of his always beautiful passages, writes: "I find I never weary of great churches." It is my favourite mountain scenery. Mankind was never so happily inspired as when it made a great cathedral—a thing as single and specious as a statue to the first glance, and yet, on examination, as lively and interesting as a forest in detail. . . . I could never fathom," he adds, "how a man dare to lift up his voice to preach in a cathedral." Is not that a sublime touch? "mountain scenery!" The great stillness and majesty and awe of the eternal hills, their grandeur and exquisite beauty, their mysterious sympathy. That one touch, to my mind, is the essence of religion, as Carlyle puts it; and yet, that mankind should have seized the very soul of the mountain, and, in a great cathedral, incarnated it in stone and lime.

If not, then, in Architecture, the earliest of all the great arts, wherein is their union to be found? To it the painter, the sculptor, the artist, the craftsman, of all degrees, have brought their best gifts. In it their work has ever found its most fitting shrine. Where else, than in a great church, can an altar-piece—the divine love of the crucifixion, the human love of a Madonna—find best its material counterpart? Where else do the glories of stained glass awaken so responsive thoughts?



MALDON HILL. DRAWN BY H. F. WARING. (See p. 305.)

more or less competent staff to attend to its grinding? While the deepest depth of all is surely that in which a lightly principled man gets into his employment a gifted draughtsman whose shoe's latchet he is, architecturally, unworthy to unloose, and by whose skill, and by whose brains alone, work is produced, of which he has been incompetent to guide a single stroke, barely to suggest a single form; but which he claims as his own, and publicly says so, because, forsooth, it emanated from his office, and he has paid for it. To my mind, and in plain English, such a course is perilously near simple fraud—and fraud, too, of the meanest kind. For surely none would ask another to paint a picture, or write a sonnet, and subscribe it with his own name! Or would any honest man draw a cheque on another's credit? The law punishes the one as fraud, because what is stolen is money; but the other filches brains only, and is oftentimes accounted an able organiser.

I have read somewhere, that Herbert Spencer's opinion of every-day architecture is poor, and

achievement; just as in the human figure, each several part is necessary to, and fitly fulfils, its own function. Add to a leg a second foot, or an additional finger to a hand, and the result is a monstrosity, little less offensive, than the ignorant interchange or senseless reproduction of old forms and details, from which the use, and meaning even, have in the transfer been severed. Architecture must be creative, not selective; least of all, selective without knowledge.

Mr. Gladstone, again, was no inconsiderable observer, and had never a word, I think, of praise for modern architecture. One circumstance in domestic architecture terrified him—the redundancy of bad ornament. "You will find," he once said, "that the architect had either a horror or a dread of leaving bare a single square foot of wall, as if there was something indecent in so doing;" and he fitly added, "excess of ornament is of all things the most hostile to a due appreciation of proportion, because it is in proportion to the perception of breadth and beauty and line,



Where else is music so grand, and solemn, and helpful, as when it soars to the highest of heights, and fills the loftiest of dim vaults with its voice, human and divine; while the light from rich glass suffuses its full tones with kindred colour? Can the arts dwell together more fittingly united than when enshrined in such architecture? Can any great picture gallery, be the light never so perfect, give the same sense of unperplexed rest to any art work as does a great church? It somehow, to me, seems to breathe the spirit of those most exquisite of all lines, in all languages:—

He maketh me to lie down in green pastures,  
He leadeth me beside the still waters.

I once heard Architecture defined—and, at first utterance, I was much surprised—as “a materialised embodiment of faith raised to the glory of God in all its parts and details, symbolising His divine attributes.” Perhaps this attempt at a definition is not wholly wrong; and, at least, most thinking men will give it higher place than that other definition, “Architecture is the art of building or constructing.”

Therefore it may have been that in those older days, wherein artists laid what was best in them at the feet of worship, they were wise in seeking their inspiration from the highest source, and in offering there the best gifts. Architects, painters, sculptors then joined hands in one person, or in a brotherhood; and a real union of the arts may again, perhaps, be found when artists realise their kinship and their common need; for their manner of thought, and work, and aim, are indeed one.

Contrast, then, this past relationship with the present divorce. In our own day, and as society becomes more complex, art is in danger of becoming specialised; and there has grown up, in consequence, a severance between the arts, and a dislocation of art terms, which is altogether unnatural. In painting, we have now the portrait painter, the landscape painter, and all sorts of varieties. Just as in architecture, have we not the church architect, the house architect, the hospital architect, and many others? Now, wherein such men become specialists, is not because architecture is specialised, but because they possess a very complete knowledge of the utilitarian or practical requirements of their particular subjects. A man may have the most consummate knowledge of hospital requirements, and may build a most perfect hospital—so far as immediate hospital requirements are concerned—but while such requirements are, in themselves, most excellent and necessary, they can yet never, in themselves, be Architecture. By a large section of the general public, however, they have, unfortunately, as I think, come to be so recognised; and an architect is too often judged, not by his architecture, but by his practical knowledge and skill; and therein lies much of evil. Now, I do not wish anyone to go away with the idea that architects ought to have their heads in the clouds and nothing at all to do with what concerns the practical needs of our day. On the contrary, we have in truth a great deal to do with them; only they are not in themselves Architecture.

Now, it is not by any means impossible to make the most prosaic of buildings architectural. Instance, Dance's Newgate Prison. Architecture is not a mere covering, separate and apart from what it covers, like a garment, which may be taken from off one and worn equally well, perhaps, by another. It is not only the outward expression of that which is within, but it is a part of it; and every line or feature, every detail, which is without meaning, and which is not essential to the building, should be unsparingly removed. The whole building should express what it is, and what the architect has to say by it, just as a picture speaks, or a poem, or music. This is what I take to be the spirit of Architecture, and of all the arts; but it is not, I much fear, generally so understood by the public, to its own loss and ours. In this Society, however, none of us, I feel sure, belong to that exclusive class of people who can see no good thing at all in the public; but neither do we fall down and

blindly worship the voice of the people as the voice of the gods. In a general way, we all much respect the public, and where a matter of the heart is concerned the public is often right. But the public, all the same, is hard to be interested in what does not apparently affect it. Applied science appeals to it strongly, because its marvellous results meet directly its daily needs; but Art, which is equally real, only less direct, and more subtle in its application, it does not care to be puzzled over, and what the public does not easily understand it dislikes, and even resents. Any sentiment it has to spare it likes to have invoked by sentiment, plain beyond a doubt. A woman in black, young if you will, crying! An empty cradle! A little sock in her hand, or a shoe! Take the most pathetic and sacred grief on earth, only make the crape broad enough, and the attitude the conventional one of woe, and the public is content, forgetting all the while, that a true painter can impart to the woman something of the divine holiness of God's love; and our share, in the mystery of what we call death; and can open for us, in part also, the windows of heaven, so that we can, in some measure, see with Him, into the revelation of the beyond. My wish is to try, imperfectly enough, I know, but yet in so far as I may, to utter something of the truth and nobleness of Art, and to lift it, at least a little, beyond the current exchange of pence, shillings and pounds. I know that the public well likes to see what it considers value for its money, and no one can blame it; but the great mass of the people have their eyes so blinded to what art really is, that a large portion of them are content with a German lithograph; and an oleograph is, to them, as eloquent as a Madonna by Raphael. Unfortunately, by many of all classes, Art is much looked upon as a thing to minister to their pleasure, or amusement. To some, it is merely the “correct thing,” and therefore right. It is in many mouths, but in few hearts. Now, our Cinderella is just waiting for her Prince. There have always been individuals, or groups, with quiet insistence, telling us of better things. In our own day, take the pre-Raphaelite brotherhood. See Whistler among the prophets; and in Scotland, look at what is called the Glasgow School of Painting. In Architecture, is there not also a shaking of the dry bones? With the encouragement afforded you in Edinburgh by the example of one still happily among you, as among us—for I speak as a Scots architect—surely you in Edinburgh have especial cause of confidence and hope. In any case to you younger men it is that much of the future belongs, and the time seems one of promise.

Consider some of those famous pictures which in recent years have found welcome place in many homes. Look at certain modern metal work, certain fabrics, pottery, glass, furniture. Surely there is not wanting indication of better things in these; and could such things in themselves be, were there not an art culture, an art knowledge, or an art desire, somewhere in the land? Moreover, would such pictures, such surroundings, have been desired, save by men of taste, or, at least, by an awakened appreciation of true art? Art, of all things, needs discerning sympathy; and when the people again become artists, then must art again naturally flourish, and with a power greater, perhaps, even than of old.

It is then for the younger men to join with painters, and sculptors, and art craftsmen of all kinds; learning from them, but teaching also. Then you will find that artists are all treading the same path and working for the same end; and so close is their relationship, and so needful their mutual help, that only so unnatural a thing as divorce could ever have separated them; but, reunited, they learn each much of the other's craft, and so united, they may again perhaps, form a brotherhood of art. Look at the few, but hopeful instances, in which artists and craftsmen have joined together in our own day. See Sedding's church at Chelsea, where architect, painter, sculptor, craftsmen, all worked together for a common end. And in Edinburgh, look, if I may venture to allude to it, at the wonderful work presently being wrought

in the Catholic Apostolic Church in Mansfield Place. Would it be possible for this Society to yet widen its sphere of influence, to make itself a yet stronger power in the art life of Edinburgh by welcoming within its walls and bringing within touch of its members, not only architects, but painters, sculptors, poets—if you can get them—musicians, and art craftsmen of every kind?

Speaking to younger men always leads one to think of training and education, for an architect is ever a student, and while avoiding all vexed questions of examination, for which much can be said against and for, or even the training of artists in any branch of art, certain words of a speaker at Oxford on some dangers of modern education may be aptly quoted. “The other danger,” he said, “was that, under undue pressure from without, they should lean, for ever so little, to that theory of education which would have us to construct machines of so many horse-power, rather than to form character, and to rear into true excellence that marvellous creature called man—and should seek to prepare for success in life, instead of securing that a man shall always be greater than his work, and never bounded by it.”

Now, in Edinburgh, what your art schools or training colleges are, I cannot tell, neither can I say whether or no in their teaching they approach this high altitude. If, however, for a moment, I may venture to interpolate a word upon the training of young artists, I would say with all my heart I think it well a student be taught to draw in clay, or in colour, or with whatsoever he will, provided he can best express himself therein; and teaching that seeks to adapt itself to the individual student, rather than to subordinate the student to the school, is to my judgment, wise and sound teaching. And for architects, Architecture should be set forth in its broad and true meaning and spirit, as a living Art, and not an antiquarian fact, as a thing of subtler essence and form than either building or constructing merely; and even though in achievement it be a thing solid and mighty, to be raised of the earth, and on its great surface, it is still to be a thing of beauty, a thing also which mother earth may, with her other great children, bear proudly on her own broad bosom, and be not ashamed. If, then, architecture is such as this, visible and real, a thing, remember, upon which the light of day is to shine, not from one point only, but from every quarter under heaven, surely, then, it is not a thing to be thought of as a flat surface only, or to be taught, as on a drawing board alone, with compass and square, but rather as a thing to be conceived of in the round, to be walked about and looked at and considered; to become also in after years a veritable part of nature, its asperities softened by her kindly touch, and enriched with the vesturing of her glowing colour, till in the end it is received by Nature as akin to her in spirit, for then those who fashion material into architecture shall have learnt also that the life is ever “more than meat, and the body than raiment.”

Now, in architecture, I think, it is a good thing for a man to have had an Edinburgh training. In a past day it was my lot to meet many of the younger Edinburgh men in London, and whether it was the result of their school or their office education I do not know, but they were then, and, I rejoice to hear, are still, men of abundant promise, taking prominent place among the architects of that great city. And I can speak thus freely in your ears, for I am not, in any sense, an Edinburgh man. And further, it is always pleasant to utter words of encouragement to any, when the words so uttered are those of truth and moderation.

And now, turning our thoughts to other lands, let us look for a moment at the Florence of the early fifteenth century, and consider the training in art and life of one Filippo Brunelleschi, born there in 1377. Filippo was the son of a notary of good renown and a very praiseworthy man. His mother, an excellent woman, was one of the noble family of the Spini. He was a man little of stature and not comely to look upon, but full of nobleness of soul, eloquence, and force of



character, a kindly man, and of benign and amiable disposition. In judgment he was calm and dispassionate, and laid aside all thought of his own interest and even that of his friends whenever he perceived the merits and talents of others so required. He knew himself, and from the stores of his own genius instructed many. He was ever ready to succour a neighbour in all his necessities, and he declared himself the confirmed enemy of all vice, and the friend of those who laboured in the course of virtue. He did not spend his moments vainly, and, although always busy with his own work, was ever ready to assist others. Such is a brief epitome from Vasari of the character of the man. In his childhood Filippo was taught by his father the rudiments of learning with the utmost care, and he learned quickly; but as he grew up he would neither follow the calling of a notary like his father nor yet that of a physician like his grand and great-grandfathers, the latter of whom had been a most eminent man. All this caused much displeasure to his father, who at length placed him in the guild of goldsmiths, that he might acquire the art of design, he having been constantly intent on questions of art and mechanics. Filippo set precious stones most excellently, and presently over-stepped the limits of the goldsmith's calling. He studied the division of time, the adjustment of weights, the movement of wheels, and made watches. Being seized with an earnest desire to attempt the art of sculpture, he sought the acquaintance of Donatello, then a youth of great promise, and a few years younger than himself; and they became most strongly attached one to the other. He studied architecture, and decorated houses. He also, in certain existing buildings, constructed doors and windows, not in the Gothic, but, after the manner of the ancients, in the Classic style—a thing, apparently, not then very frequently done. He executed a statue of Santa Maria Maddalena in linden wood for the monks of Santo Spirito. He discovered a correct method of perspective, then a new art, and made many drawings therein. He instructed those who worked in tarsia, and from his time better work therein prevailed. He turned his attention to the scriptures, and attended much the disputations and preachings of learned men. At the same time he gave earnest study to the works of Dante, and discussed all things with Donatello; than whom he could find none other, so much to his satisfaction. Now here is a characteristic little story of these simple days. Donatello had made a crucifix of wood for the church of Santa Croce, and asking the opinion of Filippo thereon, received for answer, that he had "placed a clown, and not a Christ, upon the cross." Donatello, hurt, replied "Take wood, then, and make one thyself." Filippo, who never suffered himself to be angered, did not reply; but several months afterwards, when, with Donatello, having purchased in the market place eggs and other things, upon which they were to dine, and having placed them in Donatello's apron, Filippo sent him forward to his house till he should afterwards follow; and when poor Donatello entered the room in which was a wood crucifix carefully placed, on which Filippo had worked during these months, of the same size as Donatello's in Santa Croce, he was amazed, and in his amazement suffered the contents of his apron to fall unheeded to the floor. Donatello's "Take wood and make one thyself," had been answered; and he—kindly soul—not only confessed himself conquered, but declared the work a miracle.

The talents of these two young men, having been perceived, they were commissioned by the Guild of Butchers and the Guild of Joiners, each to erect a figure in marble, for niches in San Michele; but Filippo, being occupied with other affairs, suffered Donatello to execute both; and the result is those two famous statues of St. Peter and St. Mark, which, with his St. George, are renowned far beyond Florence and Italy.

Now, those of you who think competitions are a modern invention of the evil one, be good enough to listen carefully. In 1401 it was resolved to reconstruct the two remaining

doors of the church and baptistry of San Giovanni—the glorious south doors of which had already been executed in 1330 by Andrea Pisano. Tuscan sculptors were invited to submit designs, and among those who competed were Filippo (aged twenty-four), Donatello (aged from fifteen to nineteen—the exact date of his birth is uncertain), and Lorenzo Ghiberti (aged twenty). One year was allowed for the preparation of the work—while we weakly moderns are asked to design palaces in three months—and on its expiration, when the works were placed together, and exhibited without mottoes—listen again carefully—instead of each man crying up his own wares, Filippo and Donatello, perceiving that Ghiberti's was better than theirs, and best of all, they, by the good reasons they gave, persuaded the Signoria and Opera to give the doors to Ghiberti, and, that he might alone have all the credit, Filippo, when requested to undertake the work in concert with Lorenzo, refused, "desiring rather to be first in some other art," than an equal merely with another, and to the detriment to both. How aptly to this admirable unselfishness do the lines of our own Tennyson apply:—

An artist, sir, should rest in art,  
And waive a little of his claim;  
To have the great, poetic heart  
Is more than all poetic fame.

And, by way of contrast, even in those days, note hereafter, Ghiberti's unhandsome repayment.

(To be concluded.)

## R. I. B. A.

### ROYAL GOLD MEDAL, 1899.

PRESENTATION TO MR. G. F. BODLEY, A.R.A.

MR. W. MILNER FAWCETT presided at the meeting of the Institute last Monday evening, in the absence of Prof. Aitchison, who, it was announced, was unfortunately indisposed, and was prohibited by his doctor him from attending. A letter was read from Sir L. Alma Tadema, expressing his regret that he was unable to be present. There was a fair number of ladies at the meeting, and the room was full. The minutes of the last meeting were taken as read, and members attending for the first time since their election were cordially welcomed by the vice-president.

The Royal Gold Medal of 1899 for the promotion of architecture has been presented to Mr. G. F. Bodley, A.R.A., F.R.I.B.A.

#### The Presentation

was made by Mr. W. Milner Fawcett, who said he was very sorry that Professor Aitchison was unable to be there to give the gold medal to Mr. Bodley. Mr. Fawcett said that he had known Mr. Bodley for longer than he had known any one else in the room. If long acquaintance and friendship were any titles to having the honour of presenting the medal to his friend, he had them. He had also a further title, in the fact that he had always been a great admirer of Mr. Bodley's works. He was a true artist, whose designs and conceptions would receive the approval and veneration of generations to come. They had the further pleasure of welcoming him among them as a Fellow (cheers). They all knew the broad view taken by the Institute; there had never been any wish to coerce any architect to join. They rejoiced in having Mr. Bodley in their ranks. His work was so well known to all of them that there was no comment needed from him. The chairman then instanced several of Mr. Bodley's well-known works. He mentioned that Mr. Bodley was at first infected with the

#### French Style Fever,

but he soon overcame it. He said that the dean and chapter of Peterborough Cathedral were to be congratulated in having obtained Mr. Bodley's services for the restoration of the cathedral. All Mr. Bodley's work evidenced his delicate care to obtain simplicity, truth,

and repose. He had also shown great power in carrying out decorative work in colour. It was, therefore, with great pleasure that he had the honour of presenting the gold medal to him, and he was sure that all the members felt the honour of having such a distinguished artist among them (loud applause). Mr. Bodley, who was received with acclamation, said that in more ways than one he was unprepared to say anything to them that night. He had been labouring under the mistake that the next day was to be the presentation day. The honour they had given him was unexpected. He was afraid he had not been a dutiful member of the Institute. Not many years ago he took part with Mr. Jackson and others in writing papers, rather

#### Arguing Against Examinations

as a test for being an architect. He was afraid the principle had one failing, and that was that it was likely to tend towards making the architect less of an artist, and making the work less of an art, and rather too much of a profession. He thought he owed the honour of receiving the gold medal, perhaps, more especially to his care for what he held to be the most beautiful style—English Gothic. (Cheers.) It would be much better if they could obtain one style for their service. They wanted refinement in their buildings. He thanked them all very much for the honour they had bestowed upon him. Mr. Aston Webb, A.R.A., spoke of the admirable manner in which Professor Aitchison had carried out his presidential duties during the three years he had occupied the position of president, and proposed that a vote of thanks be passed. This was seconded by Mr. H. H. Statham, and carried unanimously. Mr. Fawcett then introduced

#### The New Chairman,

who said that he had been filling the post of honorary secretary for a number of years, evidently to their satisfaction, he was glad to say, otherwise they would not have elected him as president. When he thought of all the great men who had occupied the post he was to hold, he was impressed with the difficulty of keeping up to their standard. But he hoped, with their kind consideration of all his actions, to be able to do his duty honourably. After the announcement that the session was closed the meeting terminated.

**The Church of St. John's, Timberhill, Norwich,** is being improved by the screening off of the organ chamber on the one side of the chancel, and the utilising of a portion of the aisles on the other side as a Lady Chapel. The screen dividing the south aisle has just been finished and is of solid oak. It is perpendicular in style, and divided into five bays, two on either side of the main opening, which is closed by ornamental iron gates, somewhat uniform with the gates which shut off the nave from the chancel. Overhead is a carved canopy with dropped tracery, having carved cusplings and crockets running to a finial which stands below a heavily moulded and carved cornice, this, in turn, being surmounted by an elaborate cresting of a pomegranate design, the fruit carved in varying patterns. In the top of each bay the tracery is deeply cut with counter mouldings and rich cusplings, animals and birds forming the subject. The jambs and mullions are deeply moulded, with a buttress standing on a moulded base, carrying a double table set-off. A circular shaft runs from each, having a carved base surmounted by a handsome finial. The bottom panels, intended as painted panels, are also headed with tracery. The design is the work of Mr. A. Weston, of Norwich; and the carver is Mr. C. W. Brown, of William Street, Norwich.

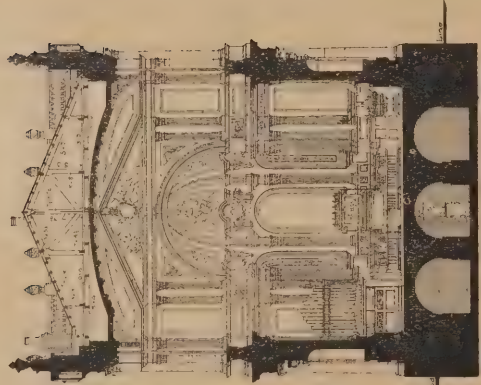
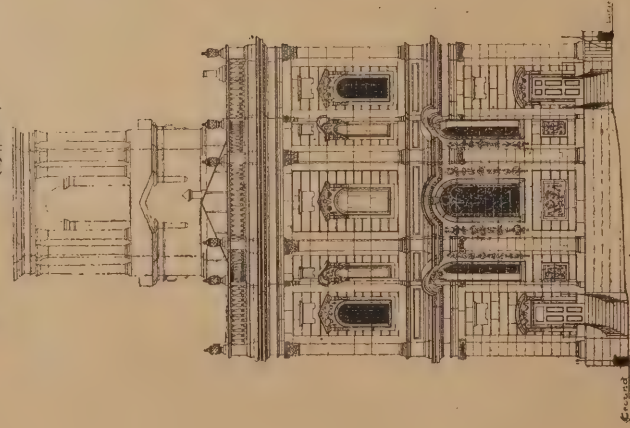
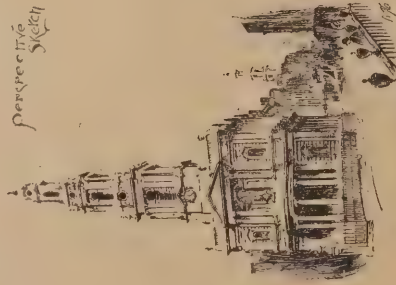
**AN EXHIBITION** of special interest to all readers of the **BUILDERS' JOURNAL AND ARCHITECTURAL RECORD** is to be held next week in the Rooms of the Architectural Association, 56, Great Marlborough Street. For further particulars see the announcement on page 304.



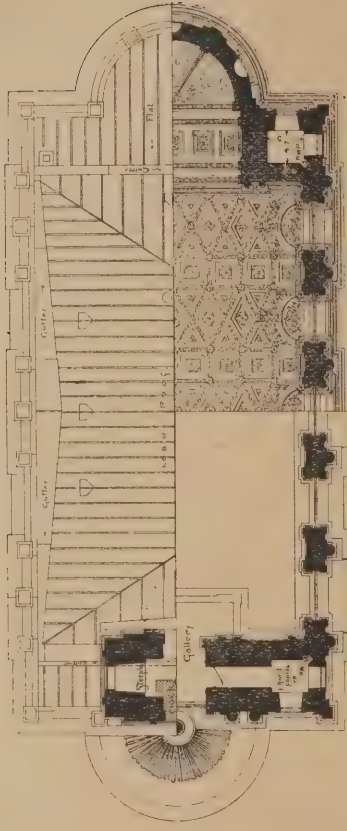
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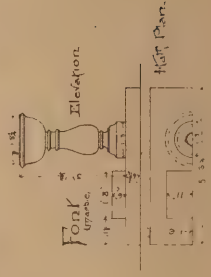
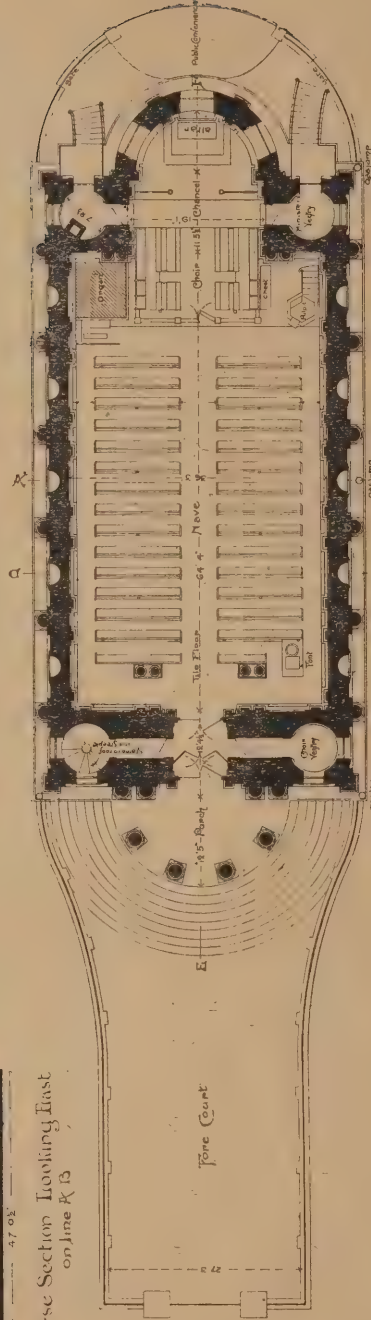
# THE CHURCH OF SAINT MARY-LE-STRAND LONDON



Hall Roof Plan

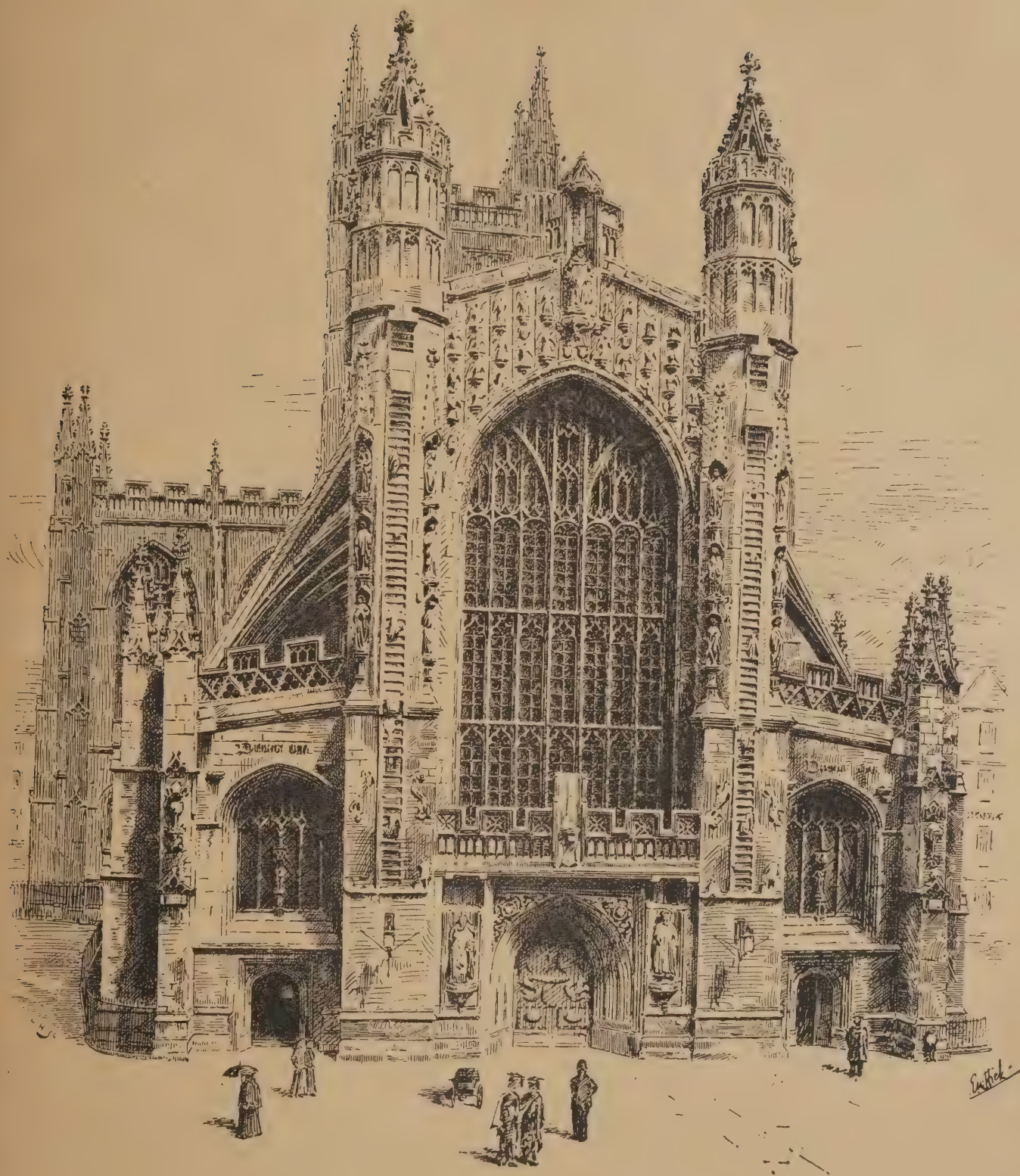


Plan at Window Level. Quarter Plan of Ceiling.



East Elevation





WEST FRONT, BATH ABBEY. DRAWN BY E. M. HICK.

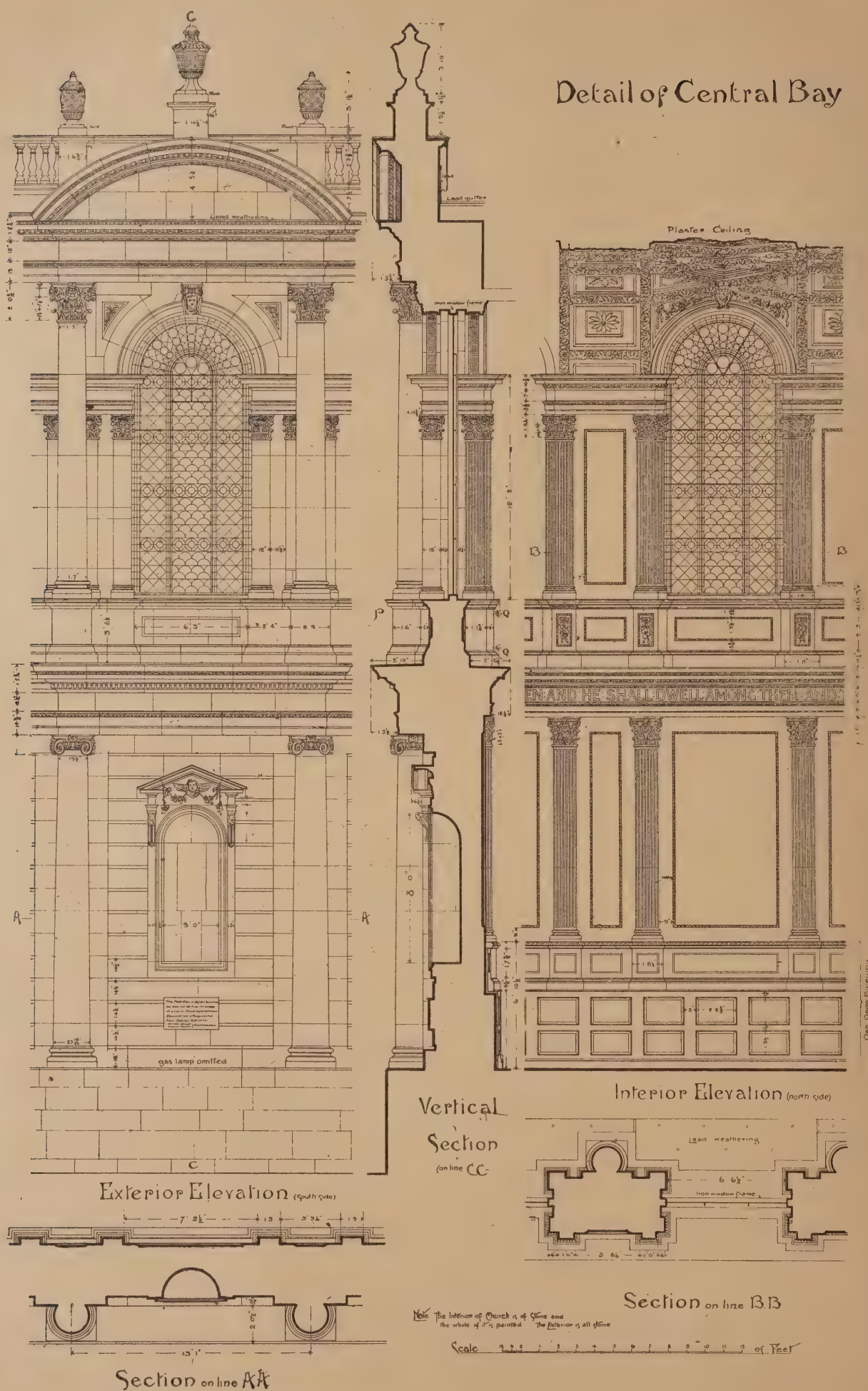


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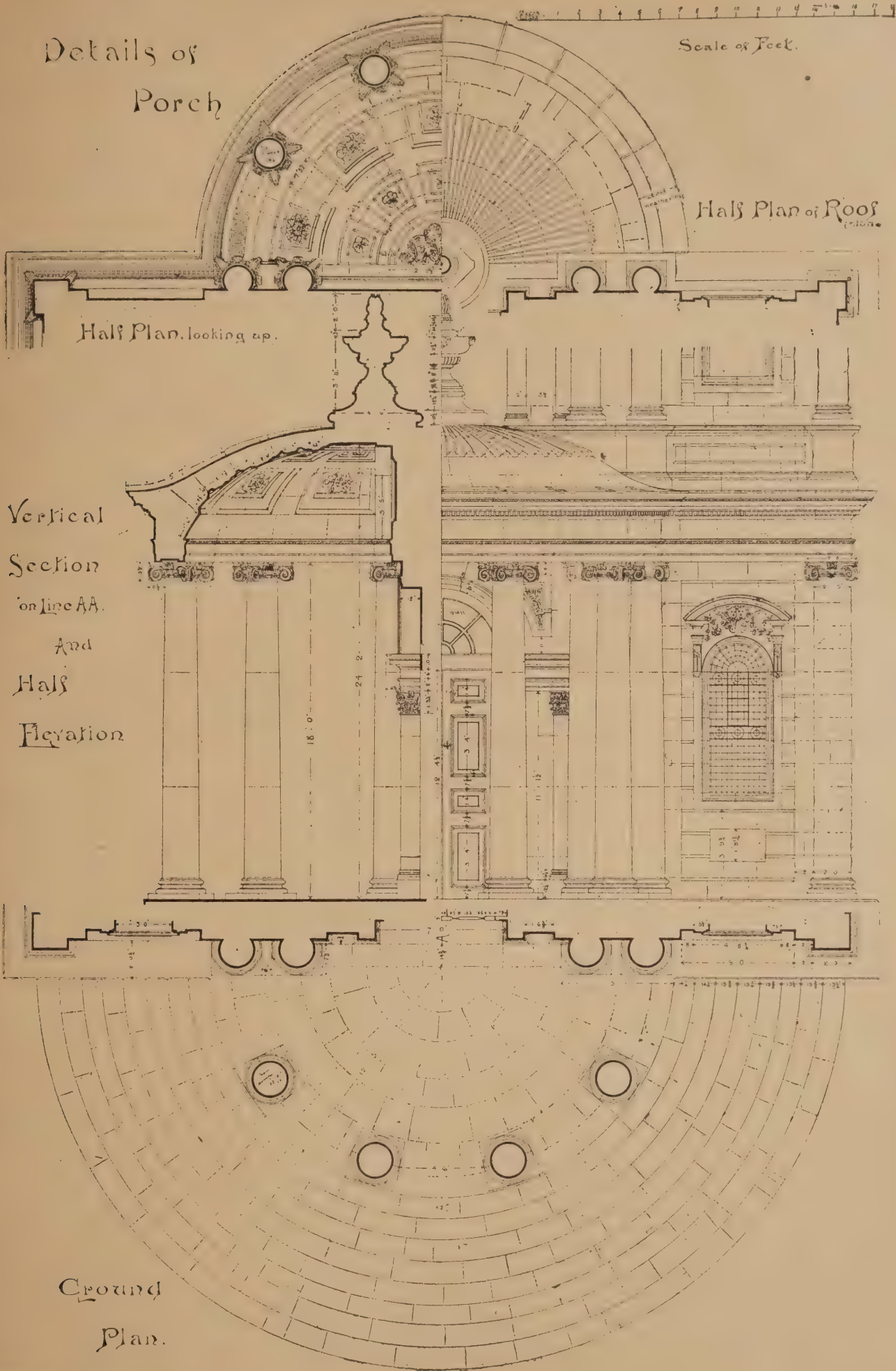
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Library  
University of Illinois





THE CHURCH OF ST. MARY-LE-STRAND, LONDON: DETAIL OF CENTRAL BAY.  
MEASURED AND DRAWN BY J. G. WILES.





THE CHURCH OF ST. MARY-LE-STRAND, LONDON. DETAILS OF PORCH.  
MEASURED AND DRAWN BY J. G. WILES.



Image  
of the  
University of Illinois



## THE WEST FRONT OF BATH ABBEY.

By E. M. HICK.

THIS year, being the 400th anniversary of the erection of the present Bath Abbey, it has been decided to commemorate the event by judiciously repairing the famous west front, and Mr. Jackson, R.A., has been appointed architect by the Restoration Committee. Its restoration was contemplated early in "the seventies," but luckily had to be abandoned for lack of funds before much damage was done. I say "luckily," because what little was done was quite sufficient to show that the restoration would not have been carried out in a very conservative spirit. Some of the figures have been removed from the upper portion, and stone blocks inserted, out of which it was no doubt intended to form their successors.

Before alluding more particularly to the west front, it is necessary to mention one or two historic facts connected with the church.

John de Villula, First Bishop of Bath, on his appointment in 1092, pulled down the old seventh century church in which Eadgar had been crowned, and built a vast Norman cathedral in its stead. The more ancient see of Wells, which had been without a bishop since the foundation of the new see, was united to it in 1218; and from that date Bath Cathedral was allowed gradually to decay, so that when Oliver King was appointed Bishop of Bath and Wells in 1496, the greater part of the church was a ruin. With this bishop's appointment the history of the present church may be said to have begun. He removed the ruins of the Norman cathedral, and, on the site of the nave, began the present church, which, wrote the late Professor Freeman, is "the only cathedral church altogether in the Perpendicular style."

The story goes that the good Bishop was moved to undertake the rebuilding by a dream, in which he beheld the Holy Trinity with angels ascending and descending a ladder; at the foot of the ladder grew an olive tree supporting a crown, and a voice cried—"Let an *live* establish the crown, and a *King* restore the church." Like the humble man that he was, he firstly understood these words to refer to his master the King. "*Olive*," the emblem of peace and plenty, was surely only another way of saying "Henry VII.!" Nevertheless, the humblest could not but find in the words "*Olive*" and "*King*" a very thin veiling of the bishop's own name; moreover, as Secretary of State and late Ambassador to France, which mission he had concluded with conspicuous success, he might very well have been said to have established the crown; what men should hinder him from restoring the church?

The pretty story is, however, somewhat spoiled when we learn that His Lordship cut down the expenditure of the Priory from £80 16s. 6d. to £135 6s. 8d. per annum, allowing the Prior £5 6s. 8d. and the monks £5 each per annum, to enable him to raise funds, and no doubt with an eye to a due economy being observed in the neighbourhood of theiscopal purse! Oliver King caused this dream to be portrayed on the west front of the new cathedral, which is in fact "a dream stone."

He did not live to see his great work finished, neither did his able *confrère*, Prior Bird, who reduced himself to poverty in his enthusiasm, and now lies at rest under the exquisite chantry chapel to the south of the high altar. Bishop King's will was to be altered in his new cathedral, but, for some reason unknown, he lies in St. George's Chapel, Windsor.

The four following bishops, viz., Cardinal Castello, Cardinal Wolsey, Clark, and Knight, are said to have done nothing towards the completion of the fabric; and the following verses were written on the wall with charcoal:

"O Church! I wail thy wofull plight,  
Whom King, nor Card'nall, Clerke, nor Knight,  
Have yet restored to ancient right."

If this be true, it is somewhat strange that

Castello's arms appear both on the west front and on the fan vaulting of the choir.

To Bishop Montague (1608 to 1616) belongs the honour of completing the church. He was translated to Winchester, but is buried here. The great west doors are, I believe, a brother's memorial of the good bishop.

Bishop King's dream is the best description of the west front, and the general scheme is readily grasped by a glance at the sketch reproduced in one of the centre plates; but a few notes on the individual parts will not be out of place here.

The Holy Trinity is represented as occupying the niche above the great west window, the spandrels of which are filled with the Heavenly Host; the ladders on the staircase turrets are flanked by the twelve Apostles in niches, and at the foot of the ladders grow olive trees, springing through crowns and surmounted by mitres. From the tracery of the great west window, issues a dove. The spandrels of the great west doorway are filled with the emblems of the Passion; the niche above is now empty, but the arms beneath it are those of Henry VII.; those flanking the doorway are filled by statues of the patron saints, Peter and Paul. The doors themselves are fine specimens of Jacobean heraldic carving. Above the aisle windows, the words "*Domus mea*" and "*Domus orōnis*" can still be deciphered.

An old motto, said to have been carved on the west front, but now obliterated, might well be taken to heart by the architect who will be called upon to make the necessary repairs, "*De sursum est*"—"It is from on high."

## CARPENTERS' COMPANY'S EXAMINATIONS.

THE numbers attending the series of lectures delivered to the candidates for the Carpenters' Company's Examination in Carpentry and Joinery have been larger this year than in any previous one, and this is a welcome sign that workmen, manual training instructors, and others, are appreciating the Company's efforts, and showing that such lectures as these are very helpful in completing the training gained in the builder's workshop and in the technical schools in London. That the certificate granted to successful candidates is of great and increasing value is evidenced by the greatly increased number of entries for the examination itself. These are greater by at least a third than they have ever been before. Candidates are by no means confined to London, although naturally the greater number find their homes in the metropolis or the suburbs, but there are entries from Leeds, Tunbridge Wells, Maidstone, and other places. The examiners were Sir Alexander Binnie, Professors Banister, Fletcher, and J. Roger-Smith, Mr. Randall, President of the Institute of Builders, and others.

The following is the list of successful candidates arranged in order of merit:—

*First Class.*—Wm. Bevan, F. J. Griffiths (winners of silver medals); Geo. Ellis, W. H. Richardson Jones, Jno. Lawrence (winners of bronze medals); W. O. Brown, Arthur Norton, J. E. Paynter, J. W. Appleyard, G. H. Griffiths, E. R. Livermore, W. H. Morrish, J. S. Knight, and Tom Pilgrim.

*Second Class.*—S. W. Hayward, T. C. Noble, E. W. F. Martin, H. T. Barnes, H. D. Trendall, J. H. Sills, F. Tompkins, F. J. Allman, S. J. Stevens, D. Hunter, E. W. Bell, G. J. Boog, J. R. Heatley, F. Batten, F. C. Brown, A. E. Davis, C. H. Hayward, E. J. Martin, R. H. Griffith, A. D. White, Thos. Tanton, Walter Pither, and Jno. Perrin.

Candidates already holding the Company's certificate, &c., who came up to improve their position and failed to do so do not appear in the above list, although they may have maintained their former position.

**Collapse of a Tunnel.**—A large portion of the Cockett Tunnel, on the Great Western Railway, near Swansea, fell in last week.

## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

## ARTS AND CRAFTS EXHIBITION.

To the Editor of THE BUILDERS' JOURNAL.

LOUGHBOROUGH.

SIR,—Will you inform me when the Arts and Crafts Exhibition will be held this year in London; also from whom I can get particulars of same?—Yours, &c., A. L. R.

This year's exhibition will be held in the New Gallery, 121, Regent Street, London, from Monday, October 9th, to Saturday, December 9th. Work intended for exhibition must be received at the New Gallery between 8 a.m. and 8 p.m. on Monday, Tuesday, and Wednesday, September 18th, 19th, and 20th. Further particulars can be had on application to the Secretary, Arts and Crafts Exhibition Society, The New Gallery, 121, Regent Street, W.

## BUILDING WALL OVER SHOP.

To the Editor of THE BUILDERS' JOURNAL.

TORQUAY.

DEAR SIR,—Would you or any of your readers kindly give me your opinion of the following:—I am altering some business premises, and am putting a shop front on ground floor, with two stories over, and in submitting my plans for approval to the local authorities, I showed a 9in. wall over shop, carried on a rolled steel joist. This wall, being only 23ft. high, I considered in accordance with the Building Bye-law which says that walls up to 20ft. high and not exceeding 30ft. in length shall be 9in. thick for their whole height, the height being measured from top of footings. The local authorities insist upon the lower part of the wall being 14in. thick, as it would have been if the wall had been brought up from the ground. The question is this: must the height of the wall be measured from the top of footings as if shop front had not been inserted, or can the top of the girder be considered in effect the top of the footings for the wall? JAY.

The height of the wall must, I think, be measured from the top of the footings, and not the top of the girder. H. P. B.

## The Restoration of Llangathen Church.

Carmarthenshire, has been decided upon. The present chancel arch, chancel roof, east window, and the arcade between the chancel and the Aberglasney Chapel, which have lost all semblance of Gothic, will be replaced with something more appropriate. The Cadran Chapel, on the north side of the nave, is to be renovated. At present the internal walls are plastered, and it will be interesting to know what work the plaster may conceal, as a small piscina, with a four-centred head, a Gothic recessed tomb, and an imposing Renaissance tomb, seem to show that at one time the church was of considerable importance. Mr. R. W. Thomas, of Llandrindod, is the architect.

## Manchester Newspaper Kiosks.

At a meeting of the Manchester Watch Committee it was stated that certain sites had been accepted by the Paving and Highways Committee as suitable for the erection of newspaper kiosks. These are as follow:—Albert Square, Cross Street (near Cross Street Chapel), Old Millgate, Infirmary Esplanade (two kiosks), near the Art Gallery in Mosley Street (subject to certain arrangements being made), All Saints' Esplanade, and near St. Peter's Church, Lower Mosley Street. A tasteful design for a kiosk has been prepared by the City Surveyor. It is proposed that the base of the structure shall be octagonal, and the height about 9ft. It is suggested that an experiment should be made on one or two sites before the entire scheme is carried out.



[illegible]



**POSTAGE BOOK.**—Columns for date, to whom, address, postage.

**PRESS-COPY ACCOUNT BOOK.**—No account to be sent out without being press-copied. Entries to be made from this book to the Commissions Book, to be kept closely indexed.

**PRESS-COPY LETTER BOOK.**—Every letter sent out to be press-copied; this book to be carefully indexed.

**WAGES BOOK.**—This book should have columns for date, name, amount of wages, the total to be drawn from the bank periodically.

I have refrained from giving a set of *pro forma* accounts, as I consider they are never very satisfactory, but I have contented myself by showing the rulings of the various books, and referring to the working in the letterpress, leaving readers to fill in any imaginary figures they feel inclined to supply. The lines I have laid down I hope will be considered simple and concise, as well as sufficiently comprehensive.

## Correspondence.

### SMALL COMPETITIONS: ARE THEY DESIRABLE?

To the Editor of THE BUILDERS' JOURNAL.

SIR,—I was interested to see that the above subject had been opened for discussion in your journal. There can be no doubt that it is very disheartening for architects who have to depend in a great measure upon the work in their own immediate neighbourhood for their livelihood to find that comparatively small competitions are organised for buildings which they could easily and satisfactorily design; but naturally the man who pays is desirous of getting the best that brains and experience will give him, and it seems that "the survival of the fittest" is becoming a reality in every profession.

Of course, it would not be worth the while of a busy architect to devote his valuable time to such small competitions as those under discussion, but there are many young architects who would be only too glad of the chance to show their skill and abilities upon the smaller works which they have the time to execute and sufficient knowledge to grasp.

I believe in the majority of cases that the result of such competitions would show a deeper and more satisfactory study of the requirements than if the work was entrusted to a local practitioner as a matter of course. There are many architects who can date their advancement in their profession to the impetus given to them by the acceptance of such work; and as an encouragement to good, earnest workers, I believe that small competitions are healthy and useful.

But to this I would add that to put small competitions—and large as well—upon a sound basis, it is advisable that they should be entirely conducted by such a journal as THE BUILDERS' JOURNAL AND ARCHITECTURAL RECORD. Competitors would then feel sure of considerate treatment; and the criticisms of the examiner could be set forth in the columns of the journal and worthy designs reproduced in the illustrations.

I should very much like to see a portion of your journal devoted to this work, and for the advantage of the younger men I would suggest that in all cases three or four premiums should be offered, and certificates of merit awarded to deserving designers; perhaps it would not be amiss to inaugurate such a scheme by opening a competition for the design of a suitable certificate of merit.

I feel that a great number would be glad to avail themselves of such competitions, the ultimate result of which I believe could only be encouraging and satisfactory to all who wish to do and to see good work.—Yours truly, DEVONIAN.

### REGISTRATION OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.

19, CRAVEN STREET, W.C.

SIR,—The points in the Architects' Registration Bill to which "H.D." calls attention

in your last issue are all, as he says, open to discussion, and most of them have been very thoroughly discussed already by the framers of the measure, who, without claiming infallibility, have endeavoured to meet these minor difficulties in a reasonable way. There is the question of the annual fee, for instance. Obviously the execution of the Act will cost money, and the way in which this money can easiest and most justly be raised is by a tax—it has been made as light as possible—on those who will benefit by it. And the tax, too, serves another and most important purpose in compelling every person who is on the register to report himself annually for renewal of licence, and so enabling the register to be annually corrected. But for this safeguard, addresses would be lost and the register soon fall into confusion and become valueless. It was the consideration that members of the R.I.B.A. are already taxed, in their subscriptions, and already registered, in their list of members, which led to their being made free from further taxation under the Bill.

So it is with all his contentions. Stating these rapidly, and using his numbering:—(2) Misdemeanour, in a legal sense, is a serious offence, and no registered profession at present constituted will retain on its roll anyone who is proved guilty—the House of Commons would probably introduce a clause were it omitted in the draft. (4) Training is more essential than cram—to ensure proper education and experience is as important as proper examination. There might be reasonable objections raised against the suggested additions to the Council; for architects certainly ought to be able to manage their own business. (5) A much discussed clause, possibly open to amendment when the Bill reaches the Committee stage. Things, too, have altered a good deal since it was drafted. (6) This regulation was adopted almost as it stands from the Medical Act, and, if carefully read, it will be seen that registered foreign and colonial practitioners would be allowed to practise if they complied with certain reasonable requirements. The Isle of Man and the Channel Islands, being self-governing, cannot be included in any Act passed by the English Parliament, and so must be treated as colonies. (7) A suggestion for the Registrar rather than necessarily to be included in the Bill.—Yours, &c.,

G. A. T. MIDDLETON.

**The Memorial Stone was Laid at Northfield** recently of a Wesleyan school. The building will, when complete, provide seating accommodation for 250 scholars, and will cost £1,000, exclusive of the cost of the site and of the furniture, which will add another £600 to the outlay. The stone—a tablet of statuary marble—was laid in the inside of the west wall.

**The Formal Opening of the Maindee Municipal Buildings** took place recently. The buildings have been erected from the plans of Mr. R. H. Haynes, Borough Engineer, at a cost of £5,900, and provide accommodation for the fire brigade, police, and a branch reading-room and lending library. At the rear are sheds for holding the Works and Sanitary Committees' apparatus, also a house for the steam roller.

**A Building Collapsed** recently at North Shields. The scene of the occurrence was an old factory building, which is in course of demolition for building purposes. Without any warning, the front portion of the premises collapsed, and William Marcer, labourer, and his son were buried under the debris. When extricated, the labourer was found to be dead, and his son was badly injured.

**A new English Congregational Chapel**, which has been erected at a cost of £2,000 from the plans of Mr. Roderick, of Aberdare, was recently opened at Abercynon. Mr. W. Games, of Abercynon, was the contractor. The building is Gothic in design and built of local stone, with Forest of Dean stone dressing. Accommodation is provided for 550 worshippers, and beneath is a large school room with accommodation for 400 scholars.

## Views and Reviews.

### THE GROWTH OF GREAT CITIES.

This pamphlet was originally submitted as a paper to the American Academy of Political and Social Science, at Philadelphia, and is written by the president of that society. Exactly what it is intended to convey it is not easy to understand. It starts off with statistics and copious explanatory notes upon the growth of urban population during the past century in Europe and the United States. We are then told that these facts are common-places to intelligent persons, but that it is doubtful whether the general public realizes fully their significance for our social, industrial, and political future. That may be true enough, but before this general ignorance is removed the facts and their significance will have to be expounded with much greater clearness and attractiveness than the author of this pamphlet seems able to command. The pamphlet concludes with a condemnation of the methods of keeping statistical records in various towns. It is conceivable that the statistical expert may find some matter of interest in Mr. James' paper, but to the average man it hardly appeals.

"The Growth of Great Cities in Area and Population: A Study in Municipal Statistics." By Edmund J. James, F.L.D. Price 1s. London: P. S. King and Son, 2, Great Smith Street, Westminster, S.W.

### A BOOK ON ALPHABETS.

Mr. Lewis F. Day's book provides a most useful compendium of lettering which should be of great use to designers. The volume contains over 150 alphabets, of which 100 illustrate ancient examples, reproduced with care to preserve the spirit of the originals. The selection ranges from the earliest period to the eighteenth century, and is arranged in chronological order; there is also a good collection of decorative alphabets by modern artists. Examples are given of alphabets executed in various materials, such as carved in wood, beaten in metal, &c. A variety of lower-case or minuscule alphabets are illustrated, and a series of italic letters. The alphabets have been completed in each case where any of the letters were missing, and thus the practical man is not hampered by omissions that might be demanded by the purist. The architectural side has been considered in providing alphabets by Mr. A. Beresford Pite, J. Cromar Watt, Roland W. Paul, &c. Mr. Lewis F. Day also writes an entertaining account of the development of the alphabet, and furnishes descriptive notes to each illustration. We note that the author intends publishing a book on the use of Lettering in Ornament, which should prove of great interest.

"Alphabets Old and New." By Lewis F. Day. 3s. 6d. nett. London: B. T. Batsford, 94, High Holborn.

### THE RENAISSANCE IN ITALY.

We have already noticed the first volume of "The Renaissance in Italian Art" (by Mr. Selwyn Brinton), which dealt with the art of Pisa, Siena, and Florence, and we now come to Vol. II., which deals in the same way with that of Padua, Verona, Parma, and Venice. As Vol. I. was principally concerned with Florence, so is this with Venice. We find first a prologue devoted to "Humanism and Art," in which the author succeeds in giving us a good idea of the influence of the humanist, and also in giving us a sketch of the life and manners of the times, in which such fascinating figures appear as Lorenzo the Magnificent, Isabella d'Este, Les Battista Alberti, Vittorino da Feltre, and others. This sketch provides the student with that knowledge of the ideals and aspirations of the age without which any complete understanding of the art is impossible.

Chapter I. deals with the School of Squarcione and the rise of Mantegna; then we come to Verona, with the influence of the family of Della Icaia and such artists as Altichiero and Pisanello, and so through Ferrara and Parma to Venice. To Venice are devoted two chap-



ters, one on the making of Venice, and the other called "Venice Enthroned."

We agree with the author that he has effected an improvement by giving an analysis at the end of each sub-division, which analysis, though by no means complete, becomes useful for reference. By doing this, and so clearing his main narrative of much detail, the author considers that he has been enabled "to carry out the true title and purpose of the work, by showing the Renaissance—that whole vast, complex, and yet unended movement of human progress—working in and through the more specialised medium of Italian art." He thinks that to bring "that whole vast movement into vision would have been a task too encyclopaedic for this series," and so has endeavoured to suggest it in broad massing.

This, we think, lays the book open to the criticism that it is neither the one thing nor the other. The Renaissance, as the author says, was a movement that effected not only art, but the whole of life. To treat fully of this movement in its entirety would certainly be a colossal undertaking; but to take up any one aspect of life—social, political, scientific, or artistic—and to trace the manifestation and effect of this movement in that one direction, should not, if done concisely and methodically, be beyond the scope of such a work as this. But to carry out this idea satisfactorily, the Renaissance should be the thing dealt with, the art simply the medium through which it expresses itself. This book, on the contrary, deals more with the art, and as a study of one phase of the Renaissance is lacking in breadth of view, and hardly takes up a sufficiently impersonal or philosophic attitude. On the other hand, it might have been a more complete and valuable handbook for travellers and students, had its scope been more restricted, and had the author's sentiments been more rigorously excluded. The book is neither the work of a scholar, nor that of an artist, and is consequently lacking in both the merits and demerits of such productions, but we have no quarrel with it on that account; taking it on its merits it has interest and value, and it is written with an enthusiasm for the subject with which we sympathise.

We remarked, on the first volume, that the style was not so easy as it might be, and in this volume we occasionally note a certain lack of order and clearness, although, on the whole, the narrative portions read with greater ease and continuity. In the chapter on Venice, we get two pages about Paul Veronese before we have any mention of his name. This, to people who do not already know all about him, is bewildering. The book is well illustrated by fifteen photo reproductions of some of the most famous pictures described, such as "The Sleeping Venus," by Giorgione; "Sacred and Profane Love," by Titian; and "Venice Enthroned," by Veronese. In printing and binding it is quite admirable. A. R. J.

"The Renaissance in Italian Art." Part II. By Selwyn Brinton, M.A. London: Simpkin, Marshall, Hamilton, Kent, and Co. Limited. 1898.

#### A Public Free Library for Grimsby.—

At a meeting of the Grimsby Public Free Library Committee, last week, plans and estimates were accepted for converting the Mechanics' Institute into a free library, at a cost of £1,400 for alterations.

A Memorial was recently unveiled in St. Columba's Church, Knock, to the memory of the late Mr. Thomas Valentine, J.P. The memorial has been designed by Mr. S. P. Close, and executed by Messrs. Craven, Dunville, and Co., of Jackfield, and Messrs. Robinson and Sons, of Belfast. It consists of chancel decoration in encaustic tiles and mosaic, and also red Cork marble steps to the chancel. The tiles are arranged in panels, introducing as ornament examples of Celtic origin, specially prepared for the purpose from the best-known ancient models. The central panel over the communion table has a groundwork of gold mosaic, with ornamentation and text, "Till he come," in coloured mosaic. Over the door leading from the vestry to the church is a brass memorial plate, with a suitable inscription.



NEW SAVINGS BANK, WEST KENSINGTON. HENRY TANNER ARCHITECT.

### NEW POST OFFICE SAVINGS BANK.

THE ceremony of laying the foundation stone of the new Post Office Savings Bank buildings at West Kensington was performed last Saturday by the Prince of Wales, who was accompanied by the Princess, on behalf of the Queen. A pavilion had been erected on the ground to hold over one thousand persons, and it was gaily decorated with flags and festoons. The surrounding streets were also brightly decorated with flags. Among those present in the pavilion were the Duke and Duchess of York, the Duke and Duchess of Connaught, and the Duke of Cambridge. Representing the Queen were the Earl of Pembroke, the Earl of Hopetown, the Duke of Portland, and Colonel Carrington. The others present to receive the Prince were the Duke of Norfolk (Postmaster-General), Sir Matthew White-Ridley, the Duke of Rutland, Lord Esher, the Bishop of London, Sir Spencer Ponsonby Fane, Sir George Murray, Sir Francis Mowatt, Mr. Lang, Mr. Akers Douglas, Mr. Badcock, Mr. Hayes-Fisher, M.P., Mr. Arnold Morley, and Mr. Shaw Lefevre. The Prince on his arrival was much cheered by the crowd. The Duke of Norfolk, the Home Secretary, and the First Commissioner of Works received the Royal party, and conducted them to the marquee. Previous to the laying of the stone, the Duke of Norfolk read an address of welcome, and explained the need of the building. In reply the Prince said, "It gives me sincere pleasure, to be present as the representative of the Queen, my dear mother, to receive your loyal address, and to lay the first stone of the new savings bank buildings. Her Majesty desires me to express the great interest she has always taken in the Post Office Savings Bank, and the gratification with which she has watched the business it transacts attain its present proportion. She rejoices at the stimulus to thrift, commerce, and industry, conferred by a system which has throughout worked so admirably, and reflected the highest credit on those connected with its administration, which while it brings, as you have said, facilities for economy to every man's door, is based on the firmest security. She trusts that the inauguration of these buildings will yet further increase the popularity of the Post Office Savings Bank, and lead to a corresponding benefit to those who invest in this bank, and especially to the working classes. I thank you for your kind expressions towards the Princess of Wales and myself, and for the cordial welcome you have given us." A casket containing coins, a Post-Office Savings Bank book, and other documents was placed beneath the stone by the Prince, to whom a silver trowel, purchased by Post-Office employés, was presented. The Prince spread the cement with the silver trowel and the stone was let down, and when in position the Prince declared it "well and truly laid." After the ceremony the Postmaster-General presented to the Prince the principal officers of his department and the architect.

The new building will be a handsome structure, as will be seen from our illustration, and is to cost over a quarter of a million. Accommodation will be provided for upwards of 4,000 clerks. Attached to the main premises a regular

post-office will be erected. The basement will be used principally for storage purposes and printing offices. The ground, first, second, and third floors will consist of offices and kitchens. The front part of the building will be occupied by the male clerks, and the back part by the female clerks. The engine and boiler rooms, with the electric plant, will be in a separate building at the back of the main building. The building will be constructed on fireproof principles. The interior will be almost completely lined with glazed bricks of various tints. The contractors for the foundations are Messrs. Foster and Dicksee, of Rugby. Mr. Henry Tanner, F.R.I.B.A., of H.M. Office of Works, is the architect.

**Intending Travellers on the Continent** will do well if they apply to Messrs. Pitt and Scott, of 25, Cannon Street, London, E.C., for the little book of useful notes which they will send post free to all applicants. This pocket book is a guide to guides, and contains some very useful hints to travellers.

**New Offices** have been built for Messrs. Cory and Son, shipowners, which have frontages of 70ft. to Mount Stuart Square, and 40ft. to James Street, Cardiff, and a height of 85ft. The architect was Mr. Tudor Thornley. The cost of the building was £6,000. Mr. E. Turner was the builder.

**Penicuik House, Edinburgh**, was destroyed by fire on the 16th inst. The magnificent mural painting by Runciman of the roof of Ossian's Hall was burnt. The building was erected in 1761 under instructions from Sir James Clerk, and was a fine specimen of the purest style of Italian architecture.

**A Building Collapsed** at Hay Hill, Berkeley Street, Piccadilly, W., last week, and buried two men, named Marks and Morris. When they were removed from the debris it was found that Morris had received concussion of the brain and severe internal injuries, and Marks was dead. The building was being demolished.

**New Halls at Arbroath.**—It has been decided to build a small hall and a large hall in connection with the abbey, from designs by Mr. Robert Scott, of Arbroath. The small hall will consist of accommodation for seating 100 persons, a session house, a vestry, and lavatory accommodation. The estimated cost is £600. The large hall will accommodate 600 persons.

**New Hospital at Govan.**—The new hospital recently erected by the Govan Parish Council at Merryflats, Govan, has been formally opened. The main block consists of four double breadth wards, each 95ft. by 24ft., and holding twenty-eight beds, with a frontage of 145ft., and two storeys in height. The approximate cost of the building is £20,000.

**A Fountain** is proposed to be erected in Montrose, to the late Provost Scott. The proposed fountain has been designed by Mr. W. G. Townsend, and could be erected for about £250. The height of the proposed fountain will be 12½ft.; diameter of lower basin, 10ft.; the medallion and tablets for inscription will be of bronze, with angle piece of coloured marble mosaic; the vase-shaped ornament at top will be also of bronze, and the rest of the fountain of good hard stone.



## Bricks and Mortar.

June 28th, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### St. Mary-le-Strand.

In connection with our central plates this week the following particulars of the Church of St. Mary-le-Strand may be useful. The church is said to stand upon the site of the ancient Church of St. Ursula, and was built in 1717 by James Gibbs, a Scotchman. It was the first of the fifty churches to be re-erected in Queen Anne's reign after the Great Fire. The building is divided into two heights, externally the Roman Ionic order is employed below, with niches in the intervals between three-quarter columns, while above the wall is pierced by windows, separated by three-quarter columns of the Corinthian order; the whole being surmounted by balustrading and pediments, with vases over three bays (the central one is shown in detail). Internally the walls are similarly divided, but instead of the Ionic order and niches being used in the corresponding position, coupled fluted Corinthian pilasters are employed separating large panels; the windows occupy the upper part of the wall with composite pilasters and panels between them. A reference to the drawing will at once explain this disposition. The interior, as well as the exterior, is of stone, and is painted and gilded throughout, having a somewhat florid appearance. The flat elliptical ceiling, richly moulded and panelled, is a fine specimen of decorative plaster work. The east end of the chancel is terminated by a semi-circular apse, with some boldly modelled plaster decoration on the ceiling. Other distinctive features are the tower (or steeple) over the west end and the entrance porch, the latter being noted for its beauty. This porch is formed by the semicircular projection of the external Ionic order, covered by a flat semi-dome, richly coffered internally, and emphasized externally by radiating ribs of bold projection; it is surmounted by a handsome vase. The tower, a picturesque and elegant design, is remarkable on account of its two lowermost stages being wider across the east and west fronts than on the north and south sides. Externally, the Church of St. Mary-le-Strand is far more elaborate than the majority—if not all—of the smaller classic churches of London, but, as a whole, the edifice is tasteful and beautifully proportioned. Our illustrations are from measured drawings by Mr. J. G. Wiles.

### The Jubilee of the Oldham Corporation.

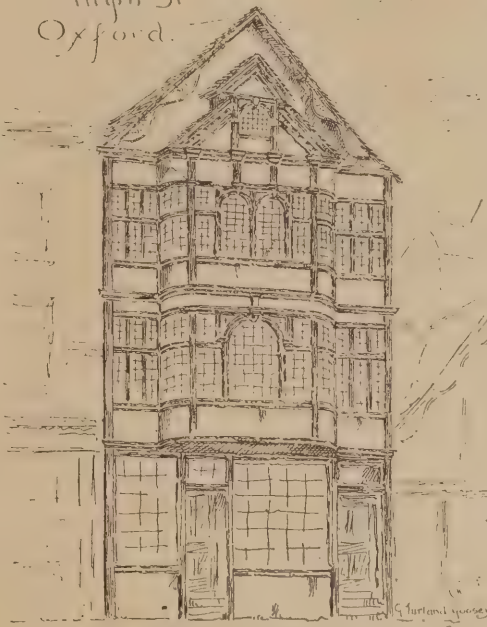
OLDHAM completed, last Saturday week, the fiftieth year of its existence as a corporate town, and to commemorate the event, the "Oldham Chronicle" issued a jubilee supplement with its ordinary number. This supplement contains a comprehensive review of the work of the Corporation during the past fifty years, and the circumstances attending its formation. It seems that the struggle for the charter was an exciting one, as the town was divided into two parties, the "Charterites" and the

"Ante-Charterites." Finally, however, the "Charterites" gained the day, and the interesting document was received on June 13th, 1849. Since that time the Corporation has been very energetic. In 1890 an electric lighting committee was formed, and soon made use of the "new light." The Corporation are seeking power to extend their works. The Surveyors' Committee was formed on February 13th, 1850. The Sanitary Committee has had plenty of work, and has looked after the sanitary condition of the town very thoroughly. The architecture of the town has improved proportionately, and mention may be made of the fact that in 1879 the Town Hall was enlarged at a cost of £24,000. Mr. Emanuel Whittaker was the only gentleman connected with the building trade who ever held the Mayoralship of Oldham. During his tenour of office, which was in 1873-4, he made practical use of his knowledge to improve the town. He died on October 9th, 1882.

### An Old Oxford House.

ONE of the remaining relics of the Elizabethan age in Oxford in the way of domestic buildings is an old house standing in the High Street, which once did service as a shop, but is now occupied as offices. With its red-tiled roof,

Old House.  
High St  
Oxford.



DRAWN BY G. T. GOOSEY.

its gable, and its imposing bay, it stands among the more modern structures which surround it as evidence of the artistic taste and love of symmetry characteristic of our "rude forefathers." The original lead-glazed windows still remain, and impart to the half-timbered building an air of antiquity and substantiality. It is a fine instance of symmetrical architecture, and it will be noticed how the more massive windows in the first tier are relieved by the central window in the second tier being divided, giving it more grace and lightness than the one beneath it, and preparing the eye for the single window which surmounts the whole.

### The Queen's Pictures.

THERE was much agitation against the removal of a number of pictures from Hampton Court Palace to Kensington Palace, and the Town Clerk of Kingston wrote to Her Majesty's Office of Works, inquiring whether such pictures had been removed permanently or merely temporarily, and also the number of the pictures so removed. To this a reply has been received from the Office of Works stating that the Corporation of Kingston is apparently

not aware that the pictures at Hampton Court Palace are the property of the Sovereign, and are exhibited to the public at the pleasure of Her Majesty, who has exercised her right to add to or withdraw from the collection from time to time, and no question ever had or ever could be raised as to the free exercise of this right. The General Purposes Committee of the Kingston Corporation has informed Her Majesty's Office of Works that its inquiries were not made with any intention to question the rights of Her Majesty in the matter.

### Canning's Statue.

In the House of Lords last Wednesday evening Viscount Sidmouth asked the Government whether they would consider the expediency of removing the statue of Mr. Canning to a more convenient site than that which it at present occupies. In its present position it was almost hidden from view. He suggested that it should be placed on the north side of Westminster Hall, in the garden where the statue of Oliver Cromwell was to be placed. Cromwell was a great man—the most extraordinary man ever heard of in the history of this country. But if there was one thing for which Cromwell was more remarkable than another, it was his overthrow not only of the House of Commons, but also of their lordships' House, and it seemed to him that it would be a ludicrous perversion of history to select that site when there were scores of sites in London where his statue might be placed without offence to anyone. It would be almost as ridiculous to place his statue there as to place a statue of George III. opposite the White House at Washington or to put a statue of Louis XVI. opposite the Elysée in Paris. The site he suggested for the statue of Canning would be close to the place where his fame was acquired, and he would be surrounded by those who had distinguished themselves in both Houses of Parliament.

### All right where it is.

THE Earl of Pembroke admitted that, owing to the growth of trees near it, the statue of Canning was somewhat obscured. The Commissioner of Works had difficulty in finding a better site owing to the size of the statue, it being much larger than any of the other statues of public men in Parliament Square. When the branches of the trees, which now surrounded the statue, had been lopped off, he thought it would show exceedingly well. The Duke of Rutland thought that the site the statue at present occupied had two advantages, one positive and the other negative. A much-frequented road ran in front of the statue, so that everyone passing had a view of it, but no one could see the statue from the rear. It was not expedient that the rear of statues should be brought into prominence. He advised their lordships to "let well alone" in this matter. When the trees about the statue were lopped, he believed the people of London would be quite content with the statue remaining where it was. The subject was then dropped.

### A Liverpool Exhibition.

THE exhibition of the work of the students of the City of Liverpool School of Architecture and Applied Art was opened on Saturday, June 17th, by the Lord Mayor. The school is divided into three departments, consisting of architecture and sculpture, painting and drawing, and decorative design, with which last is associated the craft class. The exhibition is a very interesting one, and the architectural section evidences good study on good lines. There were shown a few working drawings for furniture, which illustrated an interesting development of architectural teaching. The modelling section was much better than at last year's exhibition. Mr. J. H. Morcam treated a design for a font with great boldness, and there was much originality displayed in his work. The wall fountain by Mr. G. Williams was well treated. The studies from the nude evidenced in a few cases a defective knowledge of anatomy. Freedom of line in the use of lead was shown in the specimens of stained glass exhibited. Metal



work appeared to have received the serious attention of many students, and the work exhibited was, on the whole, good. There were also some notable exhibits in wrought iron, stencelling, painted textiles, and other decorative media.

#### Finds in the Forum.

The excavations in the Roman Forum continue to yield interesting results. The western and southern walls of the Regia, or chapter house of the Pontifices, have been laid bare. They are Republican in style, and are built of tufa. The walls differ very much from one another in the varieties of tufa employed, and in the measurements of their blocks. The south wall is composed of blocks uniformly 1ft. 5in. in vertical thickness, and the blocks forming the west wall are 1ft. 10in., and the workmanship is better. This wall was probably built by Domitius Calvinus after the fire of 36 B.C. Within the western wall a fine cement-lined cistern has been found, which resembles very much the one found on the Palatine about fifteen months ago. The diameter of this one discovered in the Regia is 10ft., and in the mud, which was ladled out of it, was found plenty of pottery. On Wednesday the excavators discovered the top of a magnificent column of Phrygian marble, 4ft. thick. It is believed to form part of the original structure of the basilica. The whole of the excavations are being carried out in a very careful manner, and every stone, every brick, is being carefully scrutinised.

#### Colchester's New Town Hall.

We have received a history of the new Town Hall and municipal buildings for Colchester from the authors, Mr. Wilson Marriage and Mr. W. Gurney Benham. It will be remembered that Mr. John Belcher, F.R.I.B.A., was the architect, and Messrs. Kerridge and Shaw, of Cambridge, secured the contract, which was for £33,397. In connection with the building of the Town Hall the Town Council have, from the first, tried to make it as artistically interesting as possible. Their aim should be more imitated by other municipalities. The Council have been singularly fortunate in having been promised many gifts towards beautifying their assembly house. Many stained-glass windows have been promised, and Alderman Green, J.P., is giving a statue of the Queen. A full-length statue in marble of Endo Dapifer, founder of Colchester Castle, of St. John's Abbey, and reputed builder of the old Moot Hall, is to be placed on the High Street façade, and is the gift of Councillor Watts, J.P. Several other statues are being given. The Council are not backward in stating their wants, and in this book is given a list of gifts which they suggest would be useful in the decoration of the buildings.

#### Proposed Gallery at the South Kensington Museum.

In the House of Commons last week the subject of the proposed gallery across the quadrangle, known as Museum Square, came up for discussion. Captain Norton asked the First Commissioner whether it had been brought to his notice that the proposed gallery would greatly detract from the architectural beauty of the buildings; and whether, before proceeding further with the proposed alteration, he would consult with other authorities on architecture as to the effect which this gallery would have on the general appearance of the quadrangle.—Mr. Akers Douglas replied that it was not intended to proceed with the gallery at once, and he should be guided ultimately in regard to its construction by the advice of the Committee of Architects, who were assisting him with the designs.

#### "The Irish Builder."

OUR old-established contemporary, the "Irish Builder," is now under new management. The paper has been in existence for close on half a century, and for the last forty years has been owned and most ably edited by Mr. Peter Roe. Mr. Roe has now been compelled by advancing years to sever his active con-

nection with the paper. Our contemporary was established in 1850 by Mr. Lyons, an architect well known in his day, and the present management have decided upon enlarging and improving it. The paper in its improved form proposes to deal not only with building, but the kindred arts and crafts—the fine arts generally, electric lighting, the antiquities of Ireland, native industries, &c. We heartily wish all success to this new venture, which supplies the wants of the members of the profession in Ireland. Nothing much up to the present has been heard of the smaller buildings put up in Ireland; we hear of the churches built there, but that is about all. We hope this journal will supply such news, for anything calculated to arouse further interest in domestic architecture deserves success.

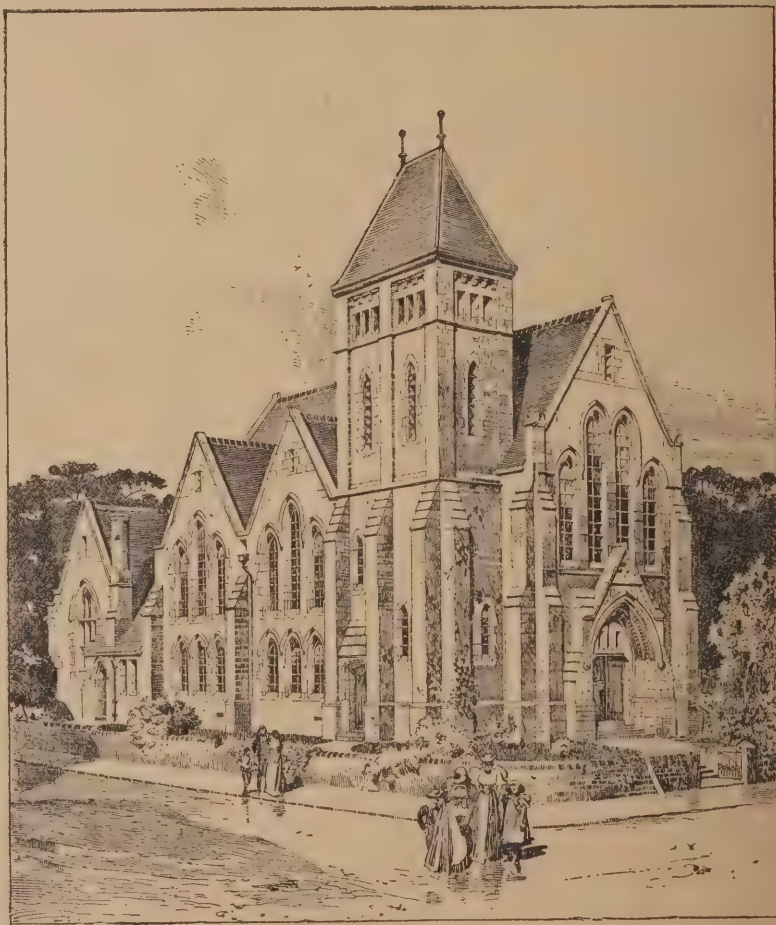
#### Archæological Discovery in New Mexico.

DURING recent excavations among the lava beds of New Mexico, tracks of ditches and reservoirs, forming part of an elaborate irrigation system of very great antiquity, have been found, the work being declared by the superintending

## Professional Practice.

**Abertillery.**—The Lord Bishop of Llandaff consecrated the new church of St. Michael on June 19th. The new building will seat 750. The style is late thirteenth century, and the plan comprises nave, aisles, tower, chancel, large vestries, with organ chamber over, and heating apparatus under, and a morning chapel on the south side. The walls are of local stone with Bath stone dressings, and the interior is of Ebbw Vale buff bricks with Bath stone caps, &c. The stained glass windows are from the studio of Messrs. A. Savell, of London. The church has been built by Councillor A. P. Williams, of Abertillery, from plans and under the supervision of Mr. C. B. Fowler, F.R.I.B.A., of Cardiff. The building is lofty and of good outline, the height from the floor to the apex of the roof being 54ft. 6in.

**Beeston.**—The opening ceremony of the new Union Church was performed last Tuesday week. The church has been built to accomo-



BAPTIST CHURCH AT BULTH WELLS, WALES. GEORGE MORGAN AND SON, ARCHITECTS.

engineers to be superior to the most modern of its kind. The ditches, which are lined with cement, follow with geometrical perfection the basal wending of the mountains round which they pass. They are carried across chasms and depressions by means of viaducts in such a skilful manner that they must have drained off from the mountains practically every drop of surface water, which will then be carried into the basin constructed at convenient intervals, and distributed thence in every direction to distant and arid valleys. Not only are the basins on such a scale as to warrant the belief that they would furnish water throughout the longest periods of drought, but they were so constructed as to provide for the collection of silt and its utilisation as a fertiliser. The whole system shows the possession by its creators of the highest engineering skill.

date about 400 persons. The architecture is of the Perpendicular period, and the main front is of Bulwell stone, rock faced with dressings of Coxbench stone, whilst the roof is tiled with American sea-green slates. The benches for the congregation are of Columbian pine, and the materials of the rostrum are pitch pine and mahogany, which are decorated with finely articulated iron scroll work. In front of the rostrum is situated the baptistry, let in 3ft. 6in. below the floor of the chapel, and lined with white glazed bricks. At the rear are the ministers' and the choir vestries, kitchen, and a large schoolroom, 51ft. long by 18ft. wide. The edifice is 66ft. long, 36ft. wide, and 37ft. from the floor to the ridge. Mr. C. N. Holloway, of Newcastle Chambers, Nottingham, is the architect, and Mr. W. Turner, of Beeston, is the contractor. The building and site cost £2,684.



**Birmingham.**—Christ Church is almost entirely demolished, and three blocks of commercial buildings are to be erected on the site, which is 2,475 square yards. The plans of Messrs. Essex, Nicol, and Goodman show that the first portion of the buildings covers about half of the site. Messrs. J. Barnsley and Sons, of Kyland Street, secured the contract for this part, the cost being about £50,000. The first block of buildings will be in New Street, the second in Colmore Row, and the third in Christ Church Passage. The frontage to Colmore Row will have a complete façade, and four shops on either side of the office entrance. The division walls of the shops will be removable. Each shop will be provided with basements and sub-basements with an approach from Christ Church Passage for the admission of goods, &c. Above the shops will be four stories of offices with several strong rooms. On the top floor will be the caretaker's apartments. In order to provide security in the event of fire, each of the staircases has an outside gangway up to the top floor level. On each side of the central office entrance in Colmore Row, facing the Council House, there will be a large double-fronted shop, and a three-story bay window above, the whole being surmounted by an ornate gable. The flanks of the building will have a bay window at the second floor level, and smaller gables; the intermediate portions of the front will have two-story bay windows, with perforated balconies over, connected to an arcaded story at the third floor level, and ornamental stone dormers in the roof. Darley Dale stone will be used for the ground floor story, relieved with pilasters of red granite. The remainder of the building will be faced with Monks Park Bath stone. The roofs will be covered with green Westmoreland slates. The general style adopted is a free form of Renaissance. The block facing Waterloo Street will harmonise in general character with the Colmore Row one, with the exception that the ground floor story will have a heavier treatment, more suitable for professional offices. There will be a complete façade from the corner of Colmore Row to the central point facing Temple Row, in which the office entrance will be situated, so that when the building is approached from Temple Row this circular portion would also present a symmetrical front, and it will be finished with a dome. This façade will have gables at either end, and bay windows similar to the treatment in Colmore Row. The intermediate portions will have four bay windows, divided by double pilasters, running from the first and second storeys. Above will be an ornamental perforated balcony, an arcaded storey, and four ornamental stone dormers in the roof.

**Builth Wells, Wales.**—The illustration on the previous page is of a Baptist church, which has just been erected at Builth Wells, as a memorial of the Queen's Diamond Jubilee. The new chapel is built on a site, costing £540, facing the parish church. Messrs. George Morgan and Son, of 24, King Street, Carmarthen, are the architects, and Mr. Henry Price, of Builth, contracted to erect the edifice for £2,250. The design follows the Early English style of architecture, and is therefore solid and simple rather than florid and ornate. Yet, constructed of Llanelwedd stone, with Bath stone dressings, and one of the front angles turreted, it has a quasi-ecclesiastical appearance, and both the front and sides being open to the road it forms a handsome addition to the public buildings of the town. The internal arrangements are planned on the most approved lines of modern chapels. There is a central hall with two wings at the upper end, corresponding respectively to the nave and transepts in cathedrals and churches. Down the body of the building are two aisles, and the benches are arranged in three main divisions—in the centre and at the sides. The transepts, of course, are similarly benched. A fine rostrum or pulpit projects from under a lofty arch at the principal end, and is in full view of the whole congregation. Within the archway are two vestries, one on either side. The baptistry is situated on the rostrum; this admits of the

rite being fully witnessed and at the same time gives the candidates ready access to the vestries. Over the entrance porch there is a commodious gallery, and the building is so constructed as to allow of the erection of side galleries whenever occasion calls for them. At the same time provision is made for the building at some future time of a schoolroom at the rear of the pulpit, divided from the chapel by sliding doors, which, with the side galleries, would raise the seating accommodation from 450, as at present, to at least 650. The building is lofty, with open-timbered roof, and is also well lighted, the windows being glazed with cathedral glass fixed with rolled lead. The gas standards are of brass. Mr. W. E. Dixon, of Builth, carried out the painting, &c., of the chapel.

**Clacton-on-Sea.**—The Passmore-Edwards Holiday Home for Children, which has cost about £10,000, was opened on June 15th. The site which the Home occupies is extreme east of Clacton, and faces due south. It consists of an acre and three-quarters, standing 150ft. back from the cliff and fronting the sea. The cost of the ground was £1,000. Accommodation will be provided for forty boys and forty girls, or, if necessary, one hundred children in all. The building will admit of extension in the future, so that there would then be sleeping room for fifty more. It is of red brick, with half-timbered stucco gables, a prominent square tower, and a ground verandah. On the ground floor is a fine hall, 90ft. long, divided

**Leeds.**—A Congregational Church is to be built in Harehills Road, at an estimated cost of £2,500, from designs by Mr. T. Dyer, of Albion Street, Leeds. The church is planned to seat 750 persons. It will have a nave and transepts, and there will be a gallery at the end over the main entrance. Vestries for the pastor and choir, and ladies' and gentlemen's cloak-rooms will be provided. The spacious entrances are provided with inner lobbies. Internally, the walls will be plastered and decorated, the roofs open-timbered, and the woodwork throughout of pitch pine, stained and varnished. The building will be of brick, with stone dressings, and the tower will rise to a height of about 100ft. The windows will be filled with tinted glass.

**Liverpool.**—The memorial stone of the Ullet Road Unitarian Church was unveiled on Monday, last week, by Sir John Brunner. The new church has been built externally of Runcorn stone and Ruabon brick; internally it is completely lined with Runcorn stone. The church is entered through a large vestibule, and consists of a wide nave, which contains seating accommodation for 440 persons, and a chancel with a semi-octagonal terminal and organ chamber. At the west end, above the vestibule, there rises a gable crowned by a belfry, and containing a rose window filled with stained glass, and above this, in the broad hollow of the arch, is an angel holding a scroll. A projection on the north side towards Cheltenham Avenue is the organ chamber, and the low buildings on the south side contain



HOLIDAY HOME FOR CHILDREN, CLACTON-ON-SEA. THE LATE CHARLES BELL, ARCHITECT.

by sliding panels. One portion will be used as the dining-room and the other as a play-room. On the left-hand side are the matron's room, visitors' reception-room, and a sitting-room for the elder girls. The first floor comprises the boys' dormitories and the matron's and the officers' bedrooms, and on the second floor are the sleeping apartments for the girls and the assistant-matron's room. Each floor is provided with lavatories and bathrooms. A spacious playground is provided at the back of the building, and in front is a wide space of garden ground. The architect was the late Mr. Charles Bell, F.R.I.B.A.

**Dover.**—In the recent competition for designs for a concert pavilion to be erected on Dover Promenade Pier, the directors have selected the joint design of M. Noel Ridley, A.M.I.C.E., and Robert J. Beale, A.R.I.B.A., of Westminster, who for many years have had considerable experience in pier structures and buildings. The directors have also adopted a report by the same authors on the strengthening of the pier, and given instructions for the working, drawings, &c., to be at once proceeded with.

vestries and a congregational hall. The latter will eventually be used as a library when the adjoining buildings are completed. These last-named buildings will comprise a congregational hall with accommodation for Sunday schools, and will fill three sides of a quadrangle, leaving the fourth open towards the south or Ullet Road boundary. Messrs. Earp and Hobbs, of London and Manchester, have executed the carving work in stone and a portion of the woodwork. The architects are Messrs. Thomas Worthington and Son, Manchester; the contractors, Messrs. W. Tomkinson and Son, Liverpool; and Mr. J. Clydesdale has acted as clerk of works. Proceeding to the main west door, and those of the north and south porches, the effective works by Mr. R. L. B. Rathbone in beaten copper are particularly worthy of mention. The windows of the church have been designed by Messrs. William Morris and Co. and Sir E. Burne-Jones. The oak work in the interior of the building has been executed from the architect's designs by Messrs. Hatch and Sons, of Lancaster. The carved panel in the reredos is a reproduction in oak of Leonardo da Vinci's fresco of the Last Supper, and has



been executed by Mr. H. H. Martyn, of Cheltenham. The organ has been built by Messrs. Hill and Sons. Mr. Gerald Moira has been commissioned by Sir John Brunner to carry out the decorative work of the vestries and the congregational hall. The iron railings and the gates have been made by Mr. George Wragge from designs by the architect. The entire cost of the church is estimated at £25,000.

**Malone.**—The opening services in connection with the new Presbyterian Church at Malone were performed on June 18th. The church consists of a nave and aisles, with large projecting transepts, and includes a spacious gallery, approached by two staircases from the vestibule, the whole being planned to accommodate more than 1,000 persons. Prominence is given to the main doorway, which has octagon shafts, with moulded bases and caps, carrying a Tudor arch richly moulded and carved. Angular buttresses are placed at each side of the jambs, surmounted by moulded battlements. The main gable contains two large tracery windows, embraced by a relieving arch, with label moulding, having carved bosses and apex. Above the latter rises an angular finial. A massive buttressed tower with a deeply-recessed doorway is placed at the south-west angle of the church; it is pierced by tracery belfry windows, and is crowned by a well-proportioned stone spire, which terminates in a gilt copper weathervane at a height of 125ft. At the opposite angle is an octagonal projecting staircase with angle buttresses and a doorway between them. All the windows have cusped tracery heads in the Tudor style, those in the transepts being of large size. All the gables are coped with moulded stones, and the roofs are covered with green Westmoreland slates. The walling is of selected Scrabo sandstone, with mullions of Giffnock stone. A portion of the front is divided by a flying buttress with novel effect. All the internal joinery is of selected pitch and yellow pine, with Carolina sheeting for the roof and wall dadoes. A series of richly-moulded Tudor arches divides the nave from the aisles. Three painted memorial windows have been placed in the rear gable. The circular window, which is in the centre of the gable, represents the emblem of the "burning bush," and the motto beneath it is "Ardens sed virens." The tracery round this is filled with a conventional treatment of the "lily" and "passion flower." The two windows in the transepts are filled with stained glass in "Gressaille" pattern of rich colouring, through which are introduced Biblical plants. The windows were designed and made by Messrs. Ward and Partners, of Belfast. Messrs. Riddle and Co. have erected the entrance gates and lamps. The vestibule is laid with marble terrazzo by Messrs. J. and F. Ebner, of London; while the general contractors for the work are Messrs. Courtney and Co., who have carried out the whole contract under the supervision of the architects, Messrs. Young and Mackenzie.

**Redditch.**—The opening of the new police station, erected by the Worcester County Council, took place last week. On October 2, 1897, the work was entrusted to Messrs. C. G. Huins and Sons, of Redditch. The new buildings are erected on a site containing about 2,000 square yards, with a frontage of 167ft. The premises comprise an inspector's house, sergeant's house, an administrative block with charge-rooms, men's messroom and kitchen, and dormitory divided into cubicles for four unmarried constables. There are five cells. The sessions-room, which is divided from the administrative block by a drive, is 45ft. by 25ft. It has an opened timbered roof. There is a magistrates' retiring room, special room for witnesses in waiting, and a solicitors' room. The out-offices consist of weights-and-measures room, men's cleaning-room, and coach-house and stabling for two horses. There is also a spacious parade ground. The building is fitted throughout with the electric light. The front elevation consists of red bricks of Ruabon manufacture, with dressings of white stone. The approximate cost of the building, including site and furniture, is about £7,000.

**Stratford.**—On Monday, last week, the ancient Parish Church of Bow was re-opened by the Bishop of London. In 1896 the church had to be closed on account of its dangerous condition, and a proposal was made at the time that it should be pulled down. This proposal was, fortunately, not carried out. In the chancel the gable roof has been renewed, and the brick gable rebuilt. The fifteenth century roof, as seen from the interior, remains unaltered. The walls have been rejointed with tiles and flints, and some new Portland stone has been inserted. In connection with the nave practically a new roof has been provided, although some of the old timbers have been re-used. Double oak windows have been added to deaden the sound of the heavy traffic which passes within a few feet of the church windows. In the north aisle a new doorway to the modern vestry has been placed, and the wall has been repaired like the chancel. The old red brick vestry has been extended to embrace a choir vestry and entrance lobby. The tower of the church has still to be repaired. About £3,700 has been spent, and £1,000 will be required for the tower. Messrs. Walter A. Hills and Son were the architects.

**Wallasey.**—The memorial stone of a new Presbyterian church was laid by Mr. S. Smith, M.P., on Monday last week. The building, when completed, will consist of nave and transepts, minister's vestry, ladies' retiring room, &c., and arrangements have been made whereby a west gallery can be erected at a future period should this be found desirable or necessary, space for an independent entrance to the stairway being provided in the turret of the porch structure. The style of architecture adopted is early Gothic. The building will be faced on all sides with Ruabon brick, the dressings and ornamental tracery, strings, and weatherings being of terra-cotta. The windows will be glazed with cathedral glass, the internal fittings and pew framing will be of varnished pitch pine, and the roofs will be covered with Ruabon red tiles. According to the present scheme, there will be accommodation for about 450 worshippers. The chief entrance to the church is by an open portico in the centre of the main facade, the vestry and retiring rooms having approaches from the side street. The estimated cost of the building is about £4,000, including the sum which was paid for the site. The architect is Mr. A. W. Smith, of Manchester, and the contractor Mr. W. H. Forde, of Birkenhead.

**The New County Hospital at Bedford** was opened last week by the Duke of Bedford. The cost of the hospital is £38,000; the architect was Mr. H. Percy Adams, and the contractors were Messrs. Kerridge and Shaw, of Cambridge.

**Church Built by Vicar and Congregation.**—The new church of St. Aidan's, Middlesbrough, was dedicated by the Archbishop of York recently. The church is built entirely of wood, and the labour in connection with its erection was performed by voluntary workers. The Rev. C. H. Sellwood Godwin having dug the foundations himself, appealed to the people of the town for help, and within a few weeks about eighty workmen were helping him. The length of the edifice is 102ft., width 40ft., and height 45ft. There is sitting accommodation for nearly 600 people, and the cost of the erection of the building is between £1,500 and £2,000.

**Dispute about Smoke Prevention Appliances.**—At Halifax last Wednesday, before Judge Cadman, Messrs. Coombs, Pearson, and Co., Manchester, claimed from Messrs. Ingham Bros., Washer Lane Dyeworks, Halifax, £60 for two sets of smoke preventing appliances. The plaintiffs' case was that in August last two smoke preventing appliances were ordered on the understanding that if, after a month's free trial, they gave satisfaction, they should be paid for. In defence, it was alleged that although the appliances prevented smoke, they caused the temperature of the singeing room to go down, and were useless. His honour gave a verdict for the defendants.

## Keystones.

**The New Infectious Diseases Hospital for Kirkcaldy**, the cost of which was about £10,000, was opened last week.

**Mr. W. E. Barry, A.R.I.B.A.**, has moved to more convenient offices at Hunter Chambers, Huntriss Row, Scarborough.

**Broom Bridge Scheme.**—The Alcester Rural District Council have resolved to borrow £700 towards erecting a bridge at Broom.

**Alterations at Higbury Relief Office** are to be carried out from the designs by Mr. W. Smith, of 65, Chancery Lane, London, W.

**A Free Church at Elderslie** is to be erected at a cost of £1,850; the memorial stone was laid by Sir Thomas Glen Coats last week.

**The Kensington Dispensary** is to be rebuilt from the designs by Mr. Gordon Statham, of 100b, Queen Victoria Street, London, E.C.

**New Catholic Schools at Bloxwich.** The foundation stone of a new school, which will cost £2,300, for St. Patrick's Catholic Church, was laid on Monday, last week.

**A New Church at Streatham.**—The foundation stone of the Church of St. Margaret, was laid by the Bishop of Southwark last week. The new building will cost £8,000.

**Infirmary and Probation Cottages** are to be built at Southall Poor Law Schools from designs by Mr. A. Saxon Snell, of 22, Southampton Buildings, Chancery Lane, London, W.C.

**The Foundation Stones of a Baptist Chapel in King Street, Loughborough**, were laid recently. Messrs. Main and Kendall are the builders, and the total cost of the land and building is about £1,000.

**The Unveiling of a Statue of Velasquez** took place in Madrid recently, and was performed by the Queen Regent. Among the representative artists of various countries present was Sir Edward Poynter, P.R.A.

**Arts and Crafts Exhibition at Oldham.**—It has been decided by the Free Library and Art Gallery Committee of the Oldham Corporation to hold an arts and crafts exhibition during four weeks in September next.

**The Society of Arts Conversazione** was held at the Natural History Museum, South Kensington, last Tuesday week. The number numbered over 2000 and were received by J. Wolfe Barry, and members of the Council.

**The Erection of Cottages in Broom Street, Limehouse**, is to be carried out at a cost of £4,423. The tender for this amount proffered by Messrs. Leslie and Co., was accepted by the London County Council at their meeting last week.

**New Premises in Cannon Street, London, E.C.**, have been erected from designs by Mr. Huntley-Gordon, F.R.I.B.A., of 123, Cannon Street. The new building is built of red brick and Portland stone standing on a plinth of Labrador granite.

**The Foundation-stone of the new North Church, Stone**, was laid last Tuesday week. The nave of the old church has been taken down, and a new one is about to be erected with an extension which will accommodate 200 more persons; the cost of the building will be about £3,000.

**An Offer to Hampstead.**—An anonymous gentleman has promised £3,500 for the purpose of erecting a Municipal Museum and Gallery adjoining the Central Free Public Library at Hampstead. The offer is received with the consideration of the Libraries Committee of the Hampstead Vestry.

**Improvements at St. Martin's-le-Grand.**—The extensive structural alterations and additions to the cloak and dining room at the Central Telegraph Office, at St. Martin's-le-Grand, which have involved an outlay of £50,000, are almost finished. New dining rooms of large dimensions have been added to the old premises in Roman Bath Street, and in their turn are enlarged by an extra storey.



**A New Town Hall for Kirton Lindsey** has been erected in commemoration of the Diamond Jubilee. The building is of stone, and has been erected from plans by Mr. J. K. Broughton, who was also responsible for the woodwork. The stonework was undertaken by Mr. E. Hollome, and the plumbing by Mr. Sims, of Kinton, and Mr. Tall, of Gainsborough.

**Building at Glasgow.**—Permission has just been granted at Glasgow Dean of Guild Court for the erection of property of the value of £150,000. Hutchesons' Hospital Incorporation have received authority to form a public street off Butterbiggins Road, and the Caledonian Railway Company to erect buildings and offices at the corner of London Street and Saltmarket.

**The Roman Catholic Cathedral** in Ashley Place, Westminster, is so far advanced towards completion that Cardinal Vaughan is inviting suggestions as to the subjects for its internal ornamentation and decoration. Marble and mosaics will be the main materials used. The Byzantine style of the edifice renders this almost obligatory. The architect of the cathedral is Mr. J. F. Bentley, and the contractors are Messrs. Shiltoe, of Bury St. Edmunds.

## New Companies.

### Albert Jubb and Sons, Limited.

This company was registered on June 12th, by Waterlow and Sons, Limited, of London Wall, London, E.C., with a capital of £5,000 in £1 shares. Its object is to carry on the business of painters, decorators, builders, &c., and it was registered without articles of association. Registered office: 151, Fitzwilliam Street, Sheffield.

### John Stather and Sons, Limited.

This company was registered on June 12th, by Waterloo and Sons, of London Wall, E.C., with a capital of £12,000 in £10 shares. Its object is to acquire the business carried on as John Stather and Sons, at Kingston-upon-Hull, and to carry on the business of paper-hangings manufacturers, paper stainers and merchants, &c. Thomas Stather and John W. Stather are the first directors. Remuneration as fixed by the company.

### Humber Brick and Tile Company, Ltd.

This company was registered on June 12th, by Jordan and Sons, Limited, 120, Chancery Lane, London, W.C., with a capital of £5,000, in £1 shares. Its object is to acquire and carry on the business carried on by Edward S. Annison at New Holland, Lincolnshire, as the Humber Brick and Tile Works, and at Holderness Road, Kingston-upon-Hull, as E. S. Annison. The first directors—to number not less than two nor more than five—are E. S. Annison and J. W. Gibson. Qualification, £50. Remuneration, £20 each per annum.

### W. H. Aston, Worcester, Ltd.

This company was registered on June 12th, by Waterlow and Sons, Limited, of London Wall, London, E.C., with a capital of £10,000, in £10 shares. Its object is to acquire the business carried on at Jubilee Works, Vincent Road, Worcester, by Walter H. Aston, and to carry on the business of timber, wood, brick, and coal merchants. The first directors—to number not less than two nor more than four—are Walter H. Aston and Harry A. Caink. Qualification, £200. Remuneration as fixed by the company.

### Durron Brick and Tile Works, Limited.

This company was registered in Ireland on June 10th, by Molloy and Molloy, solicitors, of Dublin, with a capital of £30,000 in £1 shares, for the purpose of acquiring and taking over the established brick and tile factory known as the Durren Brick and Tile Works, Durren, Queens County, and for this purpose to enter into and carry into effect an agreement made between the Irish Industries Development

Syndicate, Limited, and the company. Directors to be not less than three nor more than six. The first subscribers (each one share) are Messrs. A. L. Smith, H. Carleton, J. T. Furlong, E. Osborne, W. G. Didley, W. A. Pike, and J. St. Laurence.

### Portman Estate Mansions, Limited.

This company was registered on June 10th by Ashurst and Co., of 17, Throgmorton Avenue, E.C., with a capital of £170,000 in 8,500 preferred and 8,500 ordinary shares of £10 each. Its object is to adopt and carry into effect an agreement expressed to be made between A. F. Pennel of the one part and this company of the other part, for the acquisition by purchase or otherwise of any lands, buildings, and other property of whatever tenure or description, situated in the City or county of London; to prepare building sites; to build houses, flats, offices, warehouses, shops, wharves, buildings, works, and conveniences of all kinds; as builders and contractors, decorators, merchants, and dealers in stone, sand, lime, bricks, timber, hardware, and other building requisites, brick, tile, and terra-cotta makers, jobmasters, carriers, hotel and club proprietors, licensed victuallers, house agents, &c. The first signatories (each one share) are Messrs. A. W. Lawson, E. T. Church, E. L. Harper, J. M. Lickfold, H. W. Brown, A. J. Swan, and S. A. Tyabjee. The first directors—of whom there shall be not less than three nor more than seven—are Hon. E. B. Portman, A. A. Baumann, H. G. H. Norman, and C. G. Pym. Qualification, £250. Remuneration, £100 per annum each, with a percentage of the profits, divisible.

## CURRENT PRICES.

FORAGE.			
	2 s. d.	1 s. d.	1 s. d.
Hay, best ... ..	per load	3 0 0	3 10 0
Sainfoin mixture ... ..	do.	3 0 0	3 15 0
Clover, best ... ..	do.	3 10 0	4 5 0
Beans ... ..	per qr.	1 6 0	1 8 0
Straw ... ..	per load	1 4 0	1 16 0

OILS AND PAINTS.			
	per cwt.	1 4 6	1 5 1
Castor, French ... ..	per cwt.	1 3 3	—
Colza, English ... ..	per ton	2 0 0	—
Copperas ... ..	per cwt.	1 8 9	1 9 0
Lard ... ..	per cwt.	1 0 6	1 0 9
Linseed ... ..	per gal.	0 2 6	0 4 0
Neatsfoot ... ..	per gal.	0 0 5/8	—
Petroleum, American ... ..	per gal.	0 0 5/8-5 3/16	—
Do., Russian ... ..	per barrel	0 8 0	0 8 6
Pitch ... ..	per cwt.	1 4 3	1 4 6
Tallow, Town ... ..	per barrel	1 6 6	—
Tar, Stockholm ... ..	per cwt.	1 14 4	1 14 6
Turpentine ... ..	per cwt.	1 14 0	2 18 6
Glue ... ..	per cwt.	0 15 0	—
Lead, white, ground, carbonate per cwt.	per ton	0 17 0	—
Do., red ... ..	per ton	2 15 0	—
Soda crystals ... ..	per cwt.	3 8 6	3 9 6
Shellac, orange ... ..	per cwt.	2 2 6	2 15 0
Do., sticklac ... ..	do.	0 8 9	—
Pumice stone, ... ..	do.	—	—

METALS.			
	per ton	88 0 0	—
Copper, sheet, strong ... ..	do.	6 15 0	8 10 0
Iron, bar, Staffs, in London ... ..	do.	12 10 0	12 15 0
Do. Galvanised Corrugated sheet ... ..	do.	14 5 0	14 6 3
Lead, pig, Spanish ... ..	do.	14 10 0	—
Do. English common brands ... ..	do.	16 10 0	—
Do. sheet, English, 6lb. per sq. ft. and upwards ... ..	do.	17 5 0	—
Do. pipe ... ..	do.	9 0 0	10 0 0
Nails, cut clasp, sin. to sin. ... ..	do.	8 15 0	9 15 0
Do. floor brads ... ..	do.	116 18 9	117 8 9
Tin, Foreign ... ..	do.	116 0 0	117 0 0
Do. English ingots ... ..	do.	27 10 0	28 10 0
Zinc, sheets, English ... ..	do.	31 0 0	—
Do. Vieille Montaigne ... ..	do.	26 5 0	27 0 0
Do. Spelter ... ..	do.	—	—

TIMBER.			
Soft Woods.			
	per load	3 0 0	4 0 0
Fir, Dantzic and Memel ... ..	do.	4 7 6	6 5 0
Pine, Quebec Yellow ... ..	per fath.	4 10 0	5 10 0
Laths, log, Dantzic ... ..	do.	4 0 0	6 10 0
Do. Petersburg ... ..	do.	9 0 0	18 10 0
Deals, Archangel 2nd & 1st per P. Std. ... ..	do.	12 0 0	12 5 0
Do. do. 4th & 3rd. ... ..	do.	7 5 0	8 5 0
Do. do. unsorted ... ..	do.	6 15 0	8 10 0
Do. Riga ... ..	do.	10 10 0	14 15 0
Do. Petersburg 1st Yellow ... ..	do.	10 10 0	12 0 0
Do. do. 2nd ... ..	do.	8 0 0	11 5 0
Do. do. Unsorted ... ..	do.	7 15 0	9 15 0
Do. do. White ... ..	per P. Std.	10 15 0	15 15 0
Deals, Swedish ... ..	do.	12 5 0	—
Do. White Sea ... ..	do.	18 0 0	19 0 0
Do. Quebec Pine, 1st ... ..	do.	12 0 0	—
Do. do. 2nd ... ..	do.	7 15 0	9 15 0
Do. do. 3rd & 4th ... ..	do.	9 0 0	10 5 0
Do. Canadian Spruce, 1st do. ... ..	do.	6 5 0	7 15 0
Do. do. 2nd & 3rd ... ..	do.	7 5 0	8 0 0
Do. New Brunswick ... ..	do.	6 15 0	9 5 0
Battens, all kinds ... ..	do.	0 12 0	—
Flooring Boards, 1 in. prepared, 1st ... ..	per square	0 9 6	0 11 3
Do. 2nd ... ..	do.	0 9 6	—
Do. 3rd & 4th ... ..	do.	0 9 6	—

HARD WOODS.			
	2 s. d.	1 s. d.	1 s. d.
Ash, Quebec ... ..	per load	3 17 6	4 10 0
Birch, Quebec ... ..	do.	3 12 6	3 17 6
Box, Turkey ... ..	per ton	7 0 0	15 0 0
Cedar, lin., Cuba ... ..	per ft. sup.	0 0 4	0 0 4
Do. Honduras ... ..	do.	0 0 3 1/2	—
Do. Tobasco ... ..	do.	0 0 4 3/16	—
Elm, Quebec ... ..	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras ... ..			
Do. African ... ..	per ft. sup.	0 0 4 7/8	—
Do. St. Domingo ... ..	do.	0 0 3	0 0 4
Do. Tobasco ... ..	do.	0 0 4 23/32-6 23/32	—
Oak, Dantzic and Memel ... ..	per load	3 5 0	3 5 0
Do. Quebec ... ..	do.	4 12 6	5 0 0
Teak, Rangoon, planks ... ..	do.	9 15 0	14 5 0
Wainscot, Riga (Bauk) ... ..	do.	3 15 0	5 15 0
Do. Ossa Crown ... ..	do.	3 15 0	5 15 0
Walnut, American ... ..	per cub. ft.	0 2 6	0 4 2

## COMING EVENTS.

### Wednesday, June 28.

SOCIETY OF ARTS.—Annual General Meeting.

BUILDERS' FOREMEN AND CLERKS OF WORKS' INSTITUTION.—Half-yearly Meeting of the Directors. 8 p.m.

### Thursday, June 29.

INCORPORATED ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.—Annual Meeting at Cardiff.

### Friday, June 30.

INCORPORATED ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.—Annual Meeting (continued).

### Saturday, July 1.

INCORPORATED ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.—Annual Meeting (concluded).

NORTHERN ARCHITECTURAL ASSOCIATION.—Annual Excursion. Members to assemble at the Central Station, Newcastle, at 10.30 a.m. They will then drive to Belsay, where, by permission of Sir Arthur Middleton, Belsay Castle and Hall will be inspected. Walton Church will be next visited, and the party will return to Newcastle via Ogle and Kirkley, and will dine together at the Central Station Hotel, at 7 p.m.

### Monday, July 3.

"BUILDERS' JOURNAL" COMPETITION.—EXHIBITION OF DRAWINGS.—Architectural Association Rooms, 56, Great Marlborough Street, Regent Street, W.

### Tuesday, July 4.

"BUILDERS' JOURNAL" COMPETITION.—EXHIBITION OF DRAWINGS.—(Second day.)

### Wednesday, July 5.

"BUILDERS' JOURNAL" COMPETITION.—EXHIBITION OF DRAWINGS.—(Third day.)

## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

BASINGSTOKE.—For sewerage, &c., Deep-lane, for the Corporation. Mr. George Fittou, borough surveyor, Town Hall, Basingstoke.—Free and Sons ... £1,325 Collier and Catley, Reading\* ... £1,142

BLABY.—For the execution of sewerage works, &c., at Kirby Muxloe, for the Rural District Council. Mr. J. B. Everard, C.E., 6, Millstone-lane, Leicester.—Bentley and Loch £4,788 0 0 Siddons and Ballard, Ltd. ... £4,734 12 8 Freeman, J. C. Trueman ... £4,646 0 0 Oundle\* ... £4,020 0 0 J. Holme ... £4,374 10 0 W. Doleman ... £3,699 0 0 Walker and Co. ... £4,324 12 6 A. Jewell ... £3,200 0 0 E. Orton ... £4,136 0 0

BRISTOL.—For alterations and additions to Kingswood Church, Bristol. Mr. E. H. Lingen Barker, architect.—Cornock ... £23,806 Davis ... £1,969 Bindon ... £2,273 Hayes ... £1,932 Bowers and Co. ... £2,250 Cowlin and Sons, Bristol (accepted) ... £1,896 Stephens, Bastow and Co. ... £2,208 Adams and Jefferies ... £1,731 Lewis and Co. ... £1,974 Barnes (withdrawn) ... £1,605

BRISTOL.—For the erection of school buildings, Moorfields, St. George, for the Bristol School Board. Mr. J. Mackay, architect, Kingswood, near Bristol.—W. Church ... £13,960 E. Walters ... £12,700 Kraus and Son ... £13,687 G. Humphreys ... £12,571 C. A. Hayes ... £13,250 A. J. Beaven, Bristol\* ... £12,400 Forse and Sons ... £13,100 W. G. Bindon ... £11,953

John Wilkins ... £4,438 A. S. Scull ... £4,419 G. F. Tuckey ... £4,271 S. H. Povey, Bristol\* ... £415

HAMPSTEAD, N.W.—For the erection and completion of No. 2 Block Victoria Mansions, Sumatra Road, for Mr. C. G. Crowden. Messrs. Plaggrave and Co., architects, Victoria-street, S.W. Quantities prepared by Mr. George Stephenson.—I. Dolman and Co. ... £7,943 0 G. Wilkinson ... £6,025 George Brown ... £7,050 0 The General Builders, R. Buckley ... £6,936 10 Ltd. ... £5,800

KETERING.—For the completion of twenty-two private streets (total 4,000 yards), for the Urban District Council. Mr. T. R. Smith, surveyor, Market-hill, Kettering.—W. G. Wilmott £16,650 0 0 Bentham & Co. £14,650 0 0 Ballard, Ltd. ... £15,917 19 11 McCarthy & Co. £13,557 0 0 A. Jewell ... £14,929 17 3 F. Barlow ... £14,700 0 0 J. Woolston ... £14,700 0 0 Rothwell\* ... £13,393 0 0

LONDON, E.C.—For new factory, Minorities, London, E.C., for Messrs. Jas. Taddy and Co. Mr. E. J. Sadgrove, architect, Surrey-street, W.C.—Colls and Sons ... £23,350 Dove Bros. ... £24,985 W. Downs ... £35,990 Stephens, Bastow, Ashby and Horner ... £35,000 and Co., Limited, Edwards and Midway ... £35,000 Bristol (accepted) ... £4,888

LONDON, S.W.—For rebuilding "Waggon and Horses," Wandsworth, for New London Brewery.—Stevens ... £23,135 Whitehead ... £22,972 Wm. Smith ... £2,998 Goodall ... £2,873 G. Barker ... £2,998 Maxwell ... £2,564

LONDON, S.E.—For rebuilding "The Crown," Blackwall, for the New London Brewery Company.—Maxwell ... £2,950 G. Barker ... £2,725 Snewin ... £2,927 Jarvis ... £2,669 Stevens ... £2,840 Jackson ... £2,643 Goodall ... £2,751



LONDON, E.—For alterations to the "White Horse," Mile End, E. Mr. Herbert Riches, architect, 3, Crooked-lane, King William-street, E.C. Quantities supplied:—  
S. Salt ... £1,797 J. Thompson & Son £1,710 0  
A. Webb ... 1,793 P. Hart ... 1,683 10  
T. Osborn and Sons ... 1,723 Sheffield Bros.\* ... 1,645 0  
\*Accepted.

LONDON, N.—For repairs to the "Railway Hotel," Hornsey, N. Messrs. Foulsham and Herbert Riches, architects, 3, Crooked-lane, E.C., and Bromley-by-Bow, E.:—  
Locken and Sons ... £470 H. and F. Fearman ... £311  
G. Ballentyne ... 345 Sprossen and Babb\* ... 260  
Sheffield Bros. ... 340  
\*Accepted.

LONDON, S.W.—For the construction and diversion of a portion of the Victoria-street sewer, for the London County Council:—

Killingback and Co. ... Pedrette and Co. £3,816 10 11  
Co. ... £7,378 0 0 J. Jackson ... 4,975 8 9  
J. Dickson ... 6,368 17 1 Mowlem and Co. 4,897 0 0  
E. Iles ... 6,163 0 0 J. H. Neave ... 4,813 1 10

LONDON, W.—For structural and decorative improvements at 60, Great Cumberland-place, W. Mr. W. Macie Seaman, architect:—  
Nakowski and Co. ... £1,489 Spiers and Son ... £1,288  
Kelland ... 1,389 Bush ... 1,237  
Buckeridge ... 1,310

LONDON, W.—For decorations, &c., at No. 50, Grosvenor Square, W.:—  
W. H. Kelland ... £2,070 Spiers and Son ... £1,684  
Edwards and Medway 1,966 R. S. Buckeridge ... 1,610

MARKET HARBOROUGH.—For the execution of sewerage works (pipe sewers, tanks, &c.) for the Rural District Council. Mr. J. B. Everard, C.E., 6, Millstone-lane, Leicester:—  
Batchelor and Snowdon ... £2,136 16 3 J. Holme ... £1,598 3 0  
Walker and Co. 1,659 0 0 A. Jewell ... 1,549 16 3  
Siddons and Freeman ... 1,620 0 0 Tate and Eastwood, Market Harborough ... 1,450 18 2

**BOWER & FLORENCE,**  
Polished Granite Manufacturers,  
**ABERDEEN, N.B.**  
London Office: 64, FINSBURY PAVEMENT, E.C.  
Quarries: PETERHEAD, N.B.

PIRBRIGHT (Surrey).—For the addition of new library, &c., to "Furze Hill," for Sir H. M. Stanley, G.C.B., M.P. Mr. J. W. Cobb, architect, 121, Blenheim-crescent, Nottingham. Quantities by Mr. Ernest Ludford:—  
Eastlakes, Ltd. ... £2,061 Alfd. J. Brown\* ... £1,933  
\*Accepted.

SUTTON.—For the construction of roads and sewers at Sutton, Surrey, for the Sutton and Cheam Building Estate. Mr. E. Godfrey Page, architect, 4 and 5, Warwick-court, Gray's Inn:—  
C. W. Killingback ... £7,547 8 0 Parry and Co. ... £5,775 0 0  
W. Langridge ... 6,400 0 0 W. Jenner\* ... 5,203 18 1  
\*Accepted.

WALTHAMSTOW.—Accepted for the erection of sixteen houses, Brook-road, for Messrs. J. Nicholson and Son, 105, Cheapside, E.C.:—  
G. E. Palmont, Forest Gate ... £3,680

WOODFORD (Essex).—For the erection of new mixed schools for 488 children, at Cowslip-road, Woodford, for the Woodford School Board. Mr. Edward Tidman, C.E., F.S.I., M.S.A., Westminster, architect. Quantities supplied:—

John Shelbourne and Co. ... £10,990 0 0 Extra for red Suffolk facings throughout.  
General Builders, Ltd. ... 8,300 0 0 99 0 0  
A. E. Symes ... 8,300 0 0 75 0 0  
W. Lawrence and Son ... 7,999 0 0 44 0 0  
W. Blackburn ... 7,641 0 0 49 11 6  
W. H. Critcher ... 7,524 0 0 50 0 0  
W. H. T. Kelland ... 7,490 0 0 27 10 0  
C. Beach & Co., Cambridge-road, New Wanstead\* ... 27,309 9 10 £80 0 0  
\*Accepted.

WOODMANSTERNE (Surrey).—For stabling and additions to "The Woodman" public-house, for Messrs. Page and Overton, Limited. Mr. A. Broad, architect, 22, George-street, Croydon. Quantities by the architect:—  
Smith and Sons ... £1,624 Akers and Co. ... £1,523  
A. Bullock ... 1,090 D. W. Barker ... 1,475  
G. Cheeseman ... 1,583 Burnard, Wallington\* 1,455  
\*Accepted.

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17½×3×2	8 10	8 0	11 8
17½×3×1½	6 9	6 1	9 1



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1½×4½ Oak, 50/- Pitch Pine, 24/6 per square.  
1×4½ " 42/6 " 21/-  
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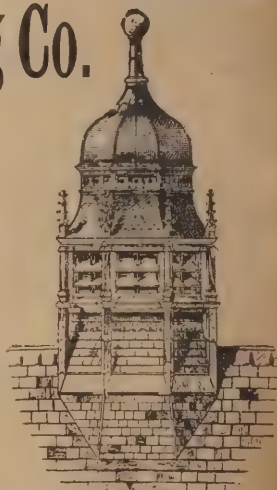
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ARE MANUFACTURERS OF

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*See Large Advertisement, Back Page, Monthly.*

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who have recently introduced into Europe the process now being so largely used in America, have erected large works in this country, and are now taking Orders for the supply of their

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# HEATING AND VENTILATION.\*

By WALTER JONES.

LET us for a few moments take a brief survey of the progress made in the heating and ventilating trades, and ascertain if possible whether individually or collectively we are doing all that can be done to promote their highest and best interests. At the beginning of the century very little was known of the science of heating by hot water: twenty-five years ago heating engineers were few and far between, to-day you can scarcely go through a small town or village without coming across a sign "Plumber and Hot Water Fitter" or "Ironmonger and Heating Engineer." I believe the first treatise that made any pretensions to dealing with the subject in a comprehensive manner, was the one written by Chas. Hood, F.R.A.S., and published in 1837. In the preface to this book Mr. Hood says:—"Finding that nothing relating to the invention had hitherto been published, it appeared probable that the materials I possessed might form a treatise which would be useful, not only in showing the practical application of the invention, but also in explaining the scientific principles upon which the various effects depend, the whole comprising, it is hoped, all the information which the subject requires."

The heating engineers of to-day are indebted to Mr. Chas. Hood for his excellent treatise, and although we must all feel, and if Mr. Hood were living to-day I think he would admit, that it did not contain all the information which the subject requires, it was a valuable work, especially when we consider the date of its publication. With all its merits, this book, like all others, was not without its faults, and the data, tables, and information as to the proportions of boiler surface, and pipe surface required to give certain results have led to untold failures.

Mr. Hood's book treats principally with the low-pressure system, and in the same year, 1837, a book on the high-pressure system, written by Mr. C. J. Richardson, was also published.

Its literary matter describes the details, and the illustrations show the adaptation of the Perkins' system, with sealed tubes as used for heating and ventilating purposes, and on looking carefully through this book, and another one published in 1840, entitled "A. M. Perkins' Patent Apparatus for Warming and Ventilating Buildings," one is surprised to find how closely the system of to-day resembles that adopted sixty years ago. The improvements during that time are comparatively slight, and bear no comparison with the enormous strides made in low-pressure heating during the same period.

Fifteen years ago a manufacturer of heating apparatus said to me: "I think the hot-water trade is about played out." "Played out!" I replied. "Why, the hot-water trade is in its infancy, we have scarcely started yet." And I tell you, gentlemen, that although much has been done during the past fifteen years, you have scarcely touched the fringe yet; so long as ninety-nine houses out of every hundred are without heating apparatus, how can it be played out? What we have to do to-day is to educate the public, show them the advantage, the economy, and the necessity of artificial heating, that for any building and for every building there is nothing to compare with it; there is ample scope for you all in this direction. The colder climate of America creates the necessity, but the damp, humid, and changeable conditions of the English climate from October to April are far more treacherous and more trying to the constitution than the sharp, dry atmosphere in colder regions. Instil this fact into the minds of the people, convince them that they are court-

ing sickness and shortening their lives, and the heating engineers will not want for employment. In confirmation of this opinion about the climatic conditions, note the following extract from the "Wide World Magazine," September, 1898, page 572, on "The National Pastime of Norway;" it says:—"Fifteen degrees below zero is not at all an uncommon experience in Norway in midwinter: and this, be it remembered, means 47deg. of cold. This sounds terrible to an English mind; indeed, most persons shudder when they hear it. Nevertheless, strange as the statement may seem, the cold mentioned is not so cutting as that of an ordinary winter's day in dear old England."

I have frequently heard this opinion confirmed by Americans and Canadians that they have felt the cold keener, and suffered greater inconvenience in England, with a temperature of 32 degrees than they have in their own country with a registered temperature of 50 to 60 degrees lower. We have abundance of medical testimony as to the augmented sickness and the increased death rate for lack of proper hygienic conditions.

The architects also require educating in this direction. They often spend large sums of money in ornamentation and decoration, and cut down the cost for that which is of far greater importance, the comfort and health of the owner or occupier. I have known hundreds of instances where lavish expenditure has been made in less important matters, and the amount provided for heating has been simply ridiculous, so that success has been impossible; the result is that the heating engineers get the discredit, and the apparatus has been pronounced a failure in consequence.

If the architects fail in their duty, we must educate the public so that they will insist upon their architects making ample provision for heating and ventilation; the demand will be simply enormous. The sphere of work is limited only by the circumference of the earth, and if this institution is true to its name, the developments of the near future cannot be estimated.

I should like to indicate what may be considered some of the chief wants of the trade, and if some of my remarks should appear critical or severe, I assure you they are not given for the purpose of finding fault, but with an earnest desire to arrive at the truth. I should say that we need

First: A good reliable standard work on heating by hot water, in which the data has been corrected, new tables added to meet diversified and special needs, existing tables revised and verified, the latest and most improved methods introduced and brought up to date.

Second: A good English weekly or monthly periodical, devoted exclusively to the interests of the heating and ventilating trades.

Third: That a code of rules should be prepared and adopted to safeguard the interests of the trade, and that steps should be taken to insure fair treatment, and to prevent exploitation.

Fourth: That the members of this institution should work together, assist each other, and not stoop to the meanness of taking an unfair advantage of other members of the trade.

We will consider these four points seriatim.

First: The want of a reliable standard work. In consulting a number of different books I find that one author says:—

That iron melts at 2,200deg. Fah. Another says the melting point is 20,577 deg. Fah.

That gold melts at 2,200deg. Fah. Another says 5,237deg. Fah.

	Another
One puts the conducting power of gold at 100	53
" " " " silver	53
" " " " iron	11
" " " " gold	12
" " " " silver	12
" " " " iron	15

One book says one h.-p. steam boiler will heat 5000 cubic feet, another says 20,000 cubic feet, and another says 50,000 cubic feet of space.

One author gives a rule that provides 36ft.

of radiation to obtain a given temperature, and gives a table in the same book that says 180ft. are required to give the same result.

Four separate authors give rules or tables for obtaining given temperatures, that when worked out give 48ft., 118ft., 237ft., and 300ft. respectively to obtain the same result.

Well, gentlemen, I do not know what you think, but it is clear that all these authorities cannot be right, and perhaps they are all wrong, with diversified opinions and such a want of unanimity the marvel is that we do not get a much larger percentage of failures in our heating plants. I don't know whether any of you have observed these discrepancies, but I could give scores of instances similar to those mentioned. I sometimes wonder whether other engineers get asked such questions as are put to me. Take the following examples and note the entire absence of any data upon which to base any calculation:

What would it cost to heat a church? and could it be done by gas?

How would you warm a swimming bath, and what would be the expense?

Which is the best way to connect up a radiator?

Quote price of cheap heating apparatus, give detailed prices with 2in. and 4in. pipes.

Please quote price for two coils (hot water or steam) for a room 20ft. square, also for a room 33ft. by 27ft.

Quote for boiler of sufficient heating capacity to supply not less than 100 gallons of water at 212deg. Fah. per hour, giving a guarantee to this effect, and the amount of fuel required, three months free trial, during which time if boiler is found incapable of keeping up the supply, to be returned carriage forward and no claim allowed for use during that period.

The above are copies of inquiries received during the past few months.

There is a book published that is looked upon as a standard work, both in America and England, which says:—

"For hot water, a building will require a ratio of pipe surface of from '70 to '85 to one foot of glass to maintain 70deg. Fah. by direct radiation."

Now, if this rule is correct when applied to a window with 20ft. of glass, it ought to be equally correct if applied to a greenhouse with 200 or 2000ft. of glass, but if you apply this test to a small greenhouse 10ft. long by 8ft. wide, with, say, 200ft. super. of glass, it gives 155ft. super. of radiation for a temperature of 70deg. Fah.

Now, I have no hesitation in stating that one-third this amount of pipe surface will maintain the temperature above mentioned. The greater the difference between the temperature of the pipe and the surrounding air, the greater will be the heat thrown off and the more rapid the cooling effect on the pipe, and the fact that the cooling effect on the glass at 70deg. is not one-fourth so rapid as that on the pipe surface at 160deg. appears to be entirely ignored.

I could, if time permitted, quote discrepancies in other directions, as on the size of mains, the temperature of the water as it leaves, and as it returns to the boiler, i.e., the loss of heat between the flow and return pipes; the insufficient pipe surface, boiler power, the excessive consumption of fuel, etc. My object at present is to call your attention to the fact that we are all at sea, and are blindly groping after and following each other, and it is time that something should be done to correct the errors of the past.

Of all the boilers in the market to-day, wrought or cast, self-contained or brick-seated, English or American, is there one that will do the work claimed for it? Many of them will not do 75 per cent. of it with good fuel and the best attention. How, then, can they be expected to keep the pipes hot for ten or twelve hours on a frosty night with a banked-up fire? Most of the boilers now offered to the public ought to have the heating powers written down 25 per cent., and some of them may be reduced 40 per cent. with advantage to all concerned. What countless failures and enormous expenses have been incurred by this over-rating it is impossible to say.

(To be continued.)

\* A paper read before the Institution of Heating and Ventilating Engineers.



## Masters and Men.

**Derby Bricklayers** struck last week for advance in wages from 8½d. to 9d. per hour.

**Builders' Labourers at Long Eaton** struck work last Wednesday for a rise in wages from 5½d. to 6d. per hour.

**The Southport Plasterers** asked at the beginning of the general plasterers' dispute an advance from 8½d. to 9½d. per hour. The masters declined to make the advance, but have now agreed to give a ½d. increase.

**Slaters' Wages and Hours of Labour.**—The Finance Committee of the London County Council at the meeting of that body last week reported the following, which was agreed to:—"The rate of wages inserted in the Council's list for slaters is 9d. per hour, and the hours are stated as fifty in summer and forty-seven and forty-four in winter, but the London Slaters' and Tilers' Union state that the rate should be 10d. per hour and the hours fifty-three all the year round. We have ascertained that there is no agreement between employers and employed on the subject, and we think that in view of this, and of the fact that slaters are not directly employed by the Works Department, the better course would be to omit all mention of slaters from the Council's list. If this were done the regulation would come into operation under which contractors for the Council have to pay the rates and observe the hours in practice obtained in London. We recommend that the trade of slaters be omitted from the Council's list of rates of wages and hours of labour."

**The Building Trade Dispute.**—A meeting of representatives of the trade unions chiefly affected by the present dispute in the building trade was held on the 20th inst. in Manchester. Just over a week ago these representatives met and drew up a basis for a joint conference in the establishment of district boards of conciliation, with a central board to which appeal could be made if necessary. During the week the scheme has been submitted to and has received the sanction of the executive committees of the unions concerned, the result being reported to the gathering yesterday, over which Mr. W. T. Wilson, of Bolton, president of the Amalgamated Society of Carpenters and Joiners, presided. The trade unions have unanimously sanctioned the scheme, details of which will be sent to-day to Mr. Hassal, of Liverpool, secretary of the National Association of Master Builders. It is understood that the offer of the Yorkshire masters, put forward at a recent meeting, to meet the men in conference was scarcely touched upon, the desire of the men being that they should deal with the masters as a whole, and not sectionally. At the same time the feeling was expressed that the withdrawal of the Yorkshire lock-out should be made a condition of the conference.

**New Light Railways.**—The Board of Trade have confirmed orders authorising the construction of light railways from Colwyn Bay to Llandudno, in the parishes of Barton-upon-Irwell, and Stretford, Lancashire.

**Suggested London Improvement.**—"R. E. W." writes thus to the "Times" of June 22nd: "In the narrowest part of Old Bond Street a house is now being pulled down. Has any one the authority to compel its being rebuilt some feet further back and so commence what might lead to the widening of that most crowded and narrow street?"

**New Fire Station at Islington.**—At last week's meeting of the London County Council it was agreed to accept the estimate of £14,400 submitted by the Finance Committee in respect of the erection of the new Islington station in Upper Street, and to sanction an expenditure of £14,033 for the work of erecting the station.

## Builders' Notes.

**The Isolation Hospital, Braintree,** has recently been supplied with Messrs. E. H. Shorland and Brother's patent Manchester Grates.

**The Re-roofing of the Crystal Palace** has been entrusted to Messrs. Mellows and Company, of Sheffield and London, of 28, Victoria Street, Westminster, S.W.

**A Timber Merchant's Failure.**—Last Wednesday, in the Queen's Bench Division of the High Court of Justice, before Mr. Registrar Giffard, Edward Harfield Barton and E. H. Barton the younger, described as carrying on business in the above style as timber merchants, at 57, Gracechurch Street, E.C., sat for public examination. The statement of affairs showed liabilities £35,117, of which £12,848 were unsecured, and assets £11,175. After evidence was given by both parties, a dividend of 3s. 6d. in the pound was paid, and the senior partner received an unconditional order of discharge.

**A Penny a Week.**—**Workmen's Compensation Act.**—At Northampton County Court a lad whose finger had been crushed at the Grose Bicycle Gear Case Company's Works claimed damages under the Workmen's Compensation Act. As a learner he had been earning, before the accident, 10s. a week, but since the accident he had been employed by the respondent company as a fitter at an average wage of upwards of 12s. For the respondent company it was contended that as the wages had been increased there was no ground for compensation under the Act, which laid it down that in awarding damages regard should be had to the amount of wages before and after the accident. Judge Snagge said he would not interpret the words of the Act in the cast-iron way supported by the respondents, but would award the nominal compensation of one penny a week. This would allow the question of compensation being brought up for review, should it in the future be found that applicant was injuriously affected by the accident. The respondent company said there would be an appeal.

**A Bricklayer's Bill.**—At the Norwich Police Court last Wednesday, before the Mayor and other magistrates, Arthur E. Chittock, bricklayer, of St. Benedict's Street, sued Walter Nickalls, fishmonger, of the same street, to recover £1 6s. for wages. Mr. E. Reeve defended, and remarked that Mr. Nickalls disputed the greater portion of the claim. Plaintiff stated that he had been engaged about defendant's premises about sixty hours doing bricklaying. Before the account was delivered defendant paid him 4s. After the work was done plaintiff asked him to settle, but defendant refused to pay him a penny, and would give no reason for his refusal to do so. The defendant contended that plaintiff had spread the work over sixty hours, and that 15s. was sufficient for the work done. He said that he was in the habit of paying the plaintiff 6d. an hour. George Pitcher, a builder, said he had inspected the plaintiff's work, which could have been done in fourteen or fifteen hours, with the exception of the stable. The Bench gave judgment for the plaintiff for 6d. an hour for fifty hours, which, deducting the 4s. already paid, left £1 1s. with costs.

**Killed Two Miles from the Factory.**—An application was made in the Edinburgh Court of Session by counsel on behalf of the widow of Adam Whitton, carter, who, for herself and six children, brought a claim in the Sheriff's Court at Dundee under the Workmen's Compensation Act, against Bell and Sime Limited, timber merchants and saw millers, of Marine Parade, Dundee, for compensation in respect of the death of her husband. The amount claimed was £163. Whitton was sent on the morning of Nov. 4th, 1898, from his employers' works with a horse and cart to

take a load of wood to a villa which was being erected on ground held in fee from Mr. Hunter, of Blackness. He was instructed to go by Blackness Avenue, and in that part of his journey a retaining wall gave way, and the cart, horse, and driver were thrown over, and the man was crushed to death under the cart. Sheriff-substitute Campbell Smith found it not proven that the death of Whitton was caused by his serious and wilful default, and he held the employers liable. The employers appealed. On June 16th, in the First Division of the Court of Session, their Lordships reversed the decision. The Lord President said there was no doubt that this man was at a distance of two miles from the works when the accident happened, and he, therefore, could not possibly come under the description of employment "on or about a factory" in the sense of the Act.

**A Question of Costs.**—The case of Skeggs v. Keen was heard in the Supreme Court of Judicature recently before Lords Justices A. L. Smith, Rigby, and Vaughan Williams. This was the appeal of the plaintiff from an order as to costs made by his Honour Judge Addison, sitting at the County Court of Southwark. The question raised the construction to be placed on section 1, sub-section 4, of the Workmen's Compensation Act. That section allows a workman who brings an action under the Employers' Liability Act and fails, to ask that, as he has failed under the Employers' Liability Act to prove negligence on the part of his employers or his servants, he may be allowed compensation under the Workmen's Compensation Act, which gives certain classes of workmen compensation unless serious or wilful misconduct is proved against them, though the master may not be in any way to blame for the accident. Under the section in question Skeggs, having failed to prove his case against Mr. Keen under the Employers' Liability Act of 1880, claimed compensation, and was awarded £23 4s. The arbitrator adjudged that as the workman had failed in his action he must pay to his employer the costs of such failure, which were fixed at £26 9s. The parties subsequently moved the learned judge in the matter, and he directed that the injured workman should not have any costs, on the ground that if he had brought his claim under the right Act there would have been no litigation, as he probably would have been paid; and, further, that there was no power under the Act of 1897 to give costs to a workman who made his claim for compensation only when he was beaten under the Employers' Liability Act. Against that order the workman now appealed. Lord Justice A. L. Smith said the plaintiff carried in his bill of costs as if he had succeeded in the action as well as in the arbitration, and the master very properly objected to pay it. The only costs of litigation that had been incurred arose under the action, and therefore the workman, having failed, could claim no costs from his master, who had succeeded in defending the claim under the Act of 1880. The other Lord Justices concurred, and the appeal of the workman was dismissed with costs.

**Sewerage at Trefw.**—The Local Government Board has given the Geirnydd Rural District Council permission to borrow £400 for sewerage work at Trefw.

**A Painter was Fatally Burned** in a man-hole on the Stanley Dock Bridge, Liverpool. The man, whose name is John Harver, had finished his work, and was handing up his pot to a comrade when the contents upset and covered him. At the same time they became ignited through the flame from a handlamp, and the man died from the burns which he received.

**The Demolition of the Front Part of Clarendon Buildings,** Lord Street, Liverpool, will begin on July 1st, and on August 1st the Countess of Derby will lay the foundation-stone of the first section of the Church House for the Liverpool diocese. The structure will be of brick and terra-cotta, and the builders' contract is for £13,200.



## Trade and Craft.

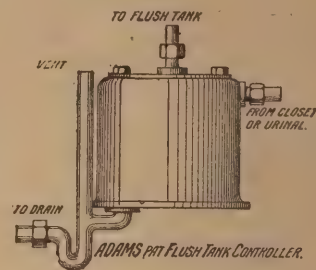
### GLASS BRICKS.

How to build a strong glass house is a difficulty which the manufacturers of the "Falconnier" patent glass bricks, whose agents are Messrs. H. Pahl and Co., of 44, Farringdon Street, London, E.C., seem to have overcome. These were effectively shown at the recent Building Trades' Exhibition, and the memory of their beauty and advantages will, no doubt, be still in the minds of those who visited their stand. A short account, however, of the advantages claimed for this patent may be of interest. The bricks are made of blown glass of any desired colour. They are hollow, and contain air, which is hermetically closed in. The laying is accomplished in exactly the same manner as with ordinary bricks. Although light enters freely through a wall built of these bricks, it is not transparent. The temperature of a room built of glass bricks changes very slowly, as the bricks contain air and act as double windows would. One splendid advantage which the firm claim for their speciality is that it is fireproof. They have just patented a special design of a fireproof glass brick. The accompanying illustration shows a building in which the bricks have been used.

### A NEW SANITARY APPLIANCE.

We have just received a copy of Messrs. Adams and Co.'s new catalogue of closets, urinals, slop sinks, &c. Among the contents we specially notice what seems to be a very useful invention, viz., the Automatic Flush Tank Governing Gear, of which an explanatory diagram is here given. The automatic flush tank has up to the present proved somewhat wasteful, for, being set to discharge itself into the latrine or urinal a certain fixed number of times per diem (governed by the inflow of water to the tank), this discharge has taken place quite independently of the actual and varying needs of each case. Messrs. Adams have introduced this arrangement for regulating the discharge of the automatic flush by the use of the closet, latrine, or urinal; hence, if there is no use there is no discharge. The apparatus can be applied to any existing latrine or urinal at comparatively small cost. The illustration shows a small controlling vessel which receives overflow from closet or urinal. The filling of this vessel brings on a feed of water to the flush tank sufficient to start its syphonic action (it having already been partially filled by a ball cock). When the flush takes place, the apparatus empties itself automatically, and, as the closet or urinal overflows again, the operation of starting flush tank is repeated. Briefly, the arrangement is, that when there is no use of the closet or urinal there is no flush, but the

overflow caused by use brings on a discharge of the tank, so that only when water is actually needed is it expended in flushing. The arrangement is working admirably on the North-Eastern, Midland, and Great Northern railways, and the makers claim that it saves from 30 per cent. to 50 per cent. of the water account



from the flushing of closets and urinals. The controller is also applied to single closets. The catalogue is well printed on good paper, and is fully illustrated; altogether, it is one of the most attractive catalogues we have seen for a long time.

## Surveying and Sanitary Notes.

**Improvements at Manchester.**—A Local Government Board inquiry was held at the Manchester Town Hall last week into an application by the Corporation for permission to borrow £60,000 for equipping the technical school, which was recently built at a cost of £140,000, £7,050 for the site of the new central fire station near Stevenson Square, and £4,000 for the purchase of land in Bradford in which to place public baths.

**London County Council Loans.**—At the usual weekly meeting of the Council last Tuesday week, on the recommendation of the Finance Committee it was decided to lend the Fulham Vestry £25,000 for electric lighting purposes, the St. James's, Westminster, Vestry £3,200 for paving works, the Lee District Board £2,480 for paving works, the Limehouse District Board £4,120 for street improvements, the St. Margaret and St. John, Westminster, Vestry £12,700 for paving works, and the Central London Sick Asylum District Managers £27,440 for provision of an asylum at Hendon.

**Artizan's Dwellings in Birmingham.** At a meeting of the Improvement Committee of the City Council last Wednesday the tenders for the erection of working men's dwellings in Milk Street were considered. The scheme adopted by the council was for the erection of six blocks of buildings, containing sixty-one tenements on the dual system at an estimated cost of £10,000. Fifteen tenders were sent in, and the lowest, that of Messrs. B. Whitehouse and Sons, of Monument Road, was accepted. The committee proposed to do part of the work themselves. They will put in the foundations up to the footings, make the roads, and execute the work in connection with the sanitary arrangements. This will comprise about one-fifth of the whole work. As a little alteration is contemplated in treating the internal details of the houses, the committee do not feel justified in stating the exact amount of the contract, but the total cost will come within the estimate.

**The Sanitary Institute.**—The preliminary programme of the Eighteenth Congress, to be held in Southampton, from August 29th to September 2nd, has now been issued. The President of the Congress is Sir W. H. Preece, K.C.B., F.R.S., Pres.Inst.C.E. Mr. Malcolm Morris, F.R.C.S.Edin., M.R.C.S.Eng., will deliver the lecture to the Congress,



A HOUSE BUILT WITH "FALCONNIER" GLASS BRICKS.



and Bailie J. Dick, J.P., Chairman of the Health Committee, Glasgow, will deliver the popular lecture. Excursions to places of interest in connection with sanitation will be arranged for those attending the Congress. A conversazione will be given by the Mayor (Councillor G. A. E. Hussey). It appears from the programme that over 300 authorities, including several County Councils, have already appointed delegates to the Congress, and, as there are also over 2,200 Members and Associates in the Institute, there will probably be a large attendance in addition to the local members of the Congress. In connection with the Congress, a health exhibition of apparatus and appliances relating to health and domestic use will be held as a practical illustration of the application and carrying out of the principles and methods discussed at the meetings; it not only serves this purpose, but also an important one in diffusing sanitary knowledge among a large class who do not attend the other meetings of the Congress. The Congress will include three general addresses and lectures. Three sections meeting for two days each, dealing with (1) Sanitary Science and Preventive Medicine, pre-ided over by Sir Joseph Ewart, M.D., F.R.C.P., J.P.; (2) Engineering and Architecture, presided over by James Lemon, M.Inst.C.E., F.R.I.B.A.; (3) Physics, Chemistry, and Biology, presided over by Professor Percy F. Frankland, Ph.D., B.Sc., F.R.S. Eight Special Conferences: Municipal Representatives, presided over by Alderman T. Walton, J.P., Chairman of the Health Committee, Southampton; Port Sanitary Authorities, Millar Wilkinson, Chairman Port of London S.A.; Medical Officers of Health, presided over by T. Orme Dudfield, M.D., L.R.C.P., M.R.C.S.; Medical Officers of Schools, C. G. Shelly, M.A., M.D.; Engineers and Surveyors to County and other Sanitary Authorities, presided over by E. Purnell Hooley, Assoc.M.Inst.C.E.; Veterinary Inspectors, W. Hunting, F.R.C.V.S.; Sanitary Inspectors, presided over by C. MacMahon, Chief Sanitary Inspector, Torquay; Domestic Hygiene, presided over by Mrs. Patey. The local arrangements are in the hands of an influential Local Committee, presided over by the Mayor of Southampton, with A. Wellesley Harris, M.R.C.S., D.P.H., W. B. G. Bennett, Asso.M.Inst.C.E., W. Matthews, M.Inst.C.E., and C. H. Russell, M.R.C.S., D.P.H., as honorary secretaries.

Engineering Notes.

**Angel Hotel, Peterborough,** is being fitted with an entirely new installation for the complete warming and ventilation, by John King, Limited, engineers, Liverpool, by means of their Rajah ventilating radiators and their patent tubular exhaust ventilators.

**The New Premises of the National Telephone Co., Limited, at Belfast,** have been fitted with an entirely new installation for the complete warming and ventilation by John King, Limited, engineers, Liverpool, by means of their Rajah ventilating radiators and their patent tubular exhaust ventilators.

**The Mersey Docks Board** has decided to carry out the following works at Birkenhead : To deepen the Alfred Dock 100ft. lock; to alter the sills of the Alfred Dock inner 100ft. passage, and Morpeth Dock west passage; and to provide additional pumping machinery at the pumping station, Wallasey Dock. These works will involve an expenditure of about £51,000.

**Tramway Extensions at Huddersfield.**—The Huddersfield Corporation applied to the Board of Trade for power to borrow £47,782, to enable them to erect a power station, and to electrically equip three sections of tramway, of which one has already been constructed, and the other two are to be constructed. At an enquiry held on the 13th inst. the following particulars as to cost were given:—Power station, £8,000; equipment, plant, &c., £17,120; equipment of routes, £11,162 2s. 4d.; twenty-three cars, £11,500; total, £47,782 2s. 4d.

**A Railway to the top of Mont Blanc** will, in all probability, be shortly commenced. The most difficult part would be the 3¼ miles from Aiguille du Géant to the summit, but here the line would be carried on a special gallery which, though laborious of construction, is deemed the most practical method. The line would start from Chamonix, and extend almost to the apex of the great mountain, the length being 6¼ miles and the total cost, as a

result of a preliminary survey, is put at £500,000, of which one-half is due to the gallery near the top.

**Waterloo Station.**—The Select Committee of the House of Lords, presided over by Lord Herries, last Monday week, considered the Bill of the London and South-Western Railway Co., which deals with the improvement of the company's terminus at Waterloo. The scheme advances the expansion of the station on both sides. Counsel for the promoters were Mr. Pember, Q.C., Mr. Page, Q.C., and Lord Robert Cecil, Q.C.; Mr. Balfour Browne, Q.C., and Mr. Wheeler, Q.C., appeared for the Lambeth Vestry, and also for Messrs. J. Rolls, Hoare, and Co., varnish manufacturers.—Counsel, in opening the case, said that the opposition to the Bill was reduced to the case of the Lambeth Vestry. Terms had been agreed to between the London County Council and the railway company, under which the railway company would, instead of widening York Street, hand over to the London County Council a sum of £30,000 to be expended by that body for the purposes of metropolitan improvements within the area affected by the Bill in such a manner as would meet with the approval of the Lambeth Vestry. After hearing the arguments of counsel in respect to the opposition of Messrs. Rolls, Hoare, and Co., the Committee decided that notice should be given to that firm of the taking of their premises within three months of the passage of the Bill.—Mr. Balfour Browne, Q.C., addressed the Committee on behalf of the Lambeth Vestry, whose opposition, he said, was chiefly to the clause of the Bill to which the London County Council had assented, which allowed the railway company, with the consent of the Home Secretary, to rehouse the poor who would be displaced under the Bill within a mile of their present abodes instead of, as usual, within half a mile. There was no reason for departing from the ordinary law in this case. If the railway company could find a fresh site, as they admittedly could, close at hand upon which to reconstruct the works of Messrs. Rolls, Hoare, and Co., their contention fell to the ground that they could not find a suitable site to rehouse these poor people.—Mr. Pember, Q.C., having replied for the railway company, the Committee decided that the clause as arranged with the County Council should stand, and passed the preamble of the Bill.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—			
June 30	Brighton—Underground Convenience	Town Council	F. J. C. May, Borough Engineer, Town Hall, Brighton.
" 30	Chatham—Post Office	H.M. Commissioners of Works	Office of Works, Storey's Gate, S.W.
" 30	Bedford—Converting Wards, &c.	Workhouse Guardians	H. Young, 35, Maitland-st, Bedford.
" 30	Swindon—Painting and Repairs	School Board	J. Clark, 130, Princes-street, Swindon.
" 30	Cardiff—School Alterations	School Board	E. Bruton, 15, Queen-street, Cardiff.
" 30	Cardiff—Bank and Office Premises	C. E. Dovey	E. W. M. Corbett and James and Morgan, Charles-street-chambers, Cardiff.
" 30	Celbridge, Ireland—Two Labourers' Cottages	Union Guardians	L. A. McDonnell, 33, Kildare-street, Dublin.
" 30	Halifax—Stabling and Caretakers' House		J. F. Walsh, Lances, and Yorks. Bank-chambers, Halifax.
" 30	Leeds—Shops and Warehouse, &c.		P. Robinson, 72, Albion-street, Leeds.
" 30	London, N.W.—Semi-detached Villas		Allen and Hoar, Inglewood House, West Hampstead.
" 30	Pendleton, Salford—Offices and Battery Sub-Station	Electric Light Committee	J. Holt, 6, St. Mary's-gate, Manchester.
" 30	Sheffield—School	School Board	Hemsoll and Paterson, 18, Norfolk-row, Sheffield.
" 30	Swaleddale—Alterations to School	Wesleyan Day School	W. Pratt, Secretary, Low-row, Reeth.
July 1	Manchester—Hospital Buildings	Sanitary Committee	City Surveyor, Town Hall, Manchester.
" 1	Morecambe—Printing Works, &c.	W. J. Dance	A. L. Lang, 12a, Pedder-street, Morecambe.
" 1	Rainham, Kent—Engine and Boiler House, &c.	Water Company	W. L. Grant, Architect, Sittingbourne.
" 3	Rainham, Great Yarmouth—Wood-block Floor	School Board	M. Chubbock, Clerk, Martham, Great Yarmouth.
" 3	London, E.—Works at Town Hall	Overseers of All Saints', Poplar	W. Clarkson, 136, High-street, Poplar.
" 3	Sheffield—Hospital, &c.	Corporation	Flockton, Gibbs and Flockton, 15, St. James-row, Sheffield.
" 4	West Ham—Cleansing, Repairs, &c.	School Board	W. Jacques, 2, Fen-court, E.C.
" 4	Bexley—Repairs, &c.	School Board	Offices, Upland Schools, Bexley Heath.
" 4	Farnborough—Cottage	Urban District Council	E. W. Knapp, Surveyor, Townhall, Farnborough.
" 4	Kingswinford—Partition	School Board	A. Price, 34, Moor-street, Brierley Hill.
" 6	Blackhead, Co. Antrim—Lighthouse	Commissioners of Irish Lights	O. Armstrong, Secretary, Irish Lights Office, Dublin.
" 6	Lewes—Bridge Works	East Sussex County Council	F. J. Wood, County Surveyor, County Hall, Lewes.
" 6	Derby—Superstructure to New Depot	Corporation	Borough Engineer, Babington-lane, Derby.
" 8	Sandbach—Detached Villa		A. Price, Architect, Sandbach.
" 10	Curragh Camp, Dublin—Post Office	Board of Public Works	H. Williams, Secretary, Offices of Public Works, Dublin.
" 10	Preston—County Sessions Hall	Lanes. County Council	H. Littler, Architect, County Offices, Preston.
" 12	Cymmer, Wales—Infectious Diseases Hospital	Glyncorrwg Urban District Council	G. F. Lambert, Architect, Bridgend.
" 12	Fareham, Hants.—Alterations, &c., to Police Station, &c.	County Council	W. J. Taylor, County Surveyor, The Castle, Winchester.
" 12	London, S.E.—Workshops, &c.	Borough of Shoreditch	Surveyor, Town Hall, Old-street, E.C.
" 13	Saxmundham, Suffolk—Works	School Board	J. Fry, Solicitor, Saxmundham.
" 17	Stamford—Workhouse	Union Guardians	J. H. Horton, 50, King-street, South Shields.
" 17	Wimbledon—Public Baths	Urban District Council	E. J. Thompson, 47, Hill-road, Wimbledon.
" 18	Lowestoft—Electric Light Station	Corporation	A. E. Fridmore, 2, Broad-street-buildings, E.C.
" 24	Dartford—Technical Schools, &c.	Urban District Council	D. F. Brow, Organising Secretary, Summerhill-rd., Dartford.
" 27	Brighton—Alterations, &c., to Library, Museum, &c.		F. J. C. May, Town Hall, Brighton.



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>ENGINEERING—</b>			
June 30	Withington—Culvert, &c.	Urban District Council	A. H. Mountain, Surveyor, Town Hall, Withington.
" 30	Shanghai—Tramway Concession	Municipal Council	J. Pook and Co., 8, Jeffery-square, St. Mary-axe, London.
July 1	Ruabon—Storage Reservoir	"	Dennie and Son, Engineers, Ruabon.
" 1	Bishop's Stortford, Herts.—Repair of Engines	Urban District Council	Surveyor, Council's Offices, Bishop's Stortford.
" 1	Dunbar—Gas Mains, &c.	Gas Commissioners	C. Notman, Clerk to Commissioners, High-street, Dunbar.
" 1	Kingstown, Ireland—Pipe laying and Repairs to Pipes	Main Drainage Board	Kaye, Perry and Ross, 63, Dawson-street, Dublin.
" 3	Melrose, Scotland—Waterworks	Roxburghe County Council	Buchanan and Bennett, 12, High-street, Edinburgh.
" 3	London, E.—Driving Pies	Metropolitan Asylums Board	C. Thomson, South Wharf, Rotherhithe-st., Rotherhithe, S.E.
" 3	Rainham, Kent—Pumps	Water Company	W. L. Grant, Architect, Sittingbourne.
" 3	Canterbury—Steel Work for Bridge	Corporation	A. H. Campbell, City Surveyor, Tudor-chambers, Canterbury.
" 4	Kinson, Bourn-mouth—Heating Apparatus	School Board	Caretaker, Board School, Sea View-road, Branksome.
" 5	London, W.—Electric Lighting Apparatus	Hammersmith Vestry	W. P. Cockburn, Vestry Clerk, Town Hall, Hammersmith.
" 5	Weston-super-Mare—Pavilion Foundations	Urban District Council	H. Nettleton, Engineer, Town Hall, Weston-super-Mare.
" 6	Hunstanton—Water Tower and Tank	Urban District Council	Stevenson and Burstal, 33, Parliament-street, Westminster.
" 10	Grimby—Electric Lighting	Corporation	M. Petree, Borough Engineer, Town Hall, Grimsby.
" 10	Tynemouth—Reservoir	Corporation	J. Mansergh, 5, Victoria-street, Westminster.
" 10	Copenhagen—Ironwork for Two Viaducts	Danish Ministry of the Interior	Oberingenieur der Staatsbahnanlagen, Reventlovsgade 10, Copenhagen V.
" 11	London, S.W.—Removal of Boilers, Boiler Seatings, &c.	London County Council	Engineer's Department, County Hall, Spring-gardens, S.W.
" 12	Halifax—Tanks	Highways Committee	E. R. S. Escott, Borough Engineer, Town Hall, Halifax.
" 13	Southwold—Works of Cliff Protection	Corporation	F. Ball, Borough Surveyor, Town Hall, Southwold.
" 13	Plymouth—Gas or Oil Engines, &c.	Corporation	J. Mansergh, 5, Victoria-street, Westminster.
" 14	Pembroke, Co. Dublin—Electrical Plant	Urban District Council	R. Hammond, 64, Victoria-street, Westminster, S.W.
" 14	Rathmines, Ireland—Electrical Plant	Urban District Council	R. Hammond, 64, Victoria-street, Westminster, S.W.
" 17	Brighton—Concrete Groynes, and Sea-walling	Town Council	F. J. C. May, Borough Engineer, Town Hall, Brighton.
" 17	Chipping Norton—Waterworks Extension	Town Council	T. Mace, Town Clerk, Chipping Norton.
" 18	Truro—Railway	Great Western Railway Co.	Engineer, Paddington Station, W.
" 22	Glasgow—Electric Traction Plant	Corporation	J. Young, 88, Renfield-street, Glasgow.
" 26	Christiana—Harbour Works	Harbour Management	Commercial Department, Foreign Office, S.W.
" 31	Rio de Janeiro—Lease of Railways	Brazilian Government	Commercial Department, Foreign Office, S.W.
<b>IRON AND STEEL—</b>			
June 30	South Shields—Dry Gas Meters	Gas Company	J. H. Penney, Sec., Gas Offices, Chapter-row, South Shields.
July 1	Padiham—Pipes	Urban District Council	J. Gregson, Engineer, Council Chambers, Padiham.
" 1	Nottingham—Pipes, Sluice Valves, &c.	Water Committee	S. Moore, Water Manager, St. Peter's Church-side, Nottingham.
" 3	Edinburgh—Pipes	Water Trustees	J. Wilson, 72a, George-street, Edinburgh.
" 3	Rugby—Water Mains	Urban District Council	T. M. Wratishaw, Clerk, Rugby.
" 3	Kingston-on-Thames—Fence	Guardians	W. H. Hope, Union Offices, Kingston-on-Thames.
" 3	London, N.—Wrought-iron Shingle Bins	Islington Vestry	J. P. Barber, Vestry Hall, Islington, N.
" 5	London, E.C.—Railway Stores	East Indian Railway Co.	A. P. Dunstan, Secretary, Offices, Nicholas-lane, E.C.
" 5	London, E.C.—Cast-iron Pot Sleepers, &c.	Madras Railway Co.	J. Byrne, 61, New Broad-street, E.C.
" 5	London, S.W.—Cast-iron Columns, Roofs, &c.	Battersea Vestry	Clerk, Municipal Buildings, Lavender Hill, S.W.
" 6	Sedgley—Gas Mains	Urban District Council	J. Smith, Clerk, High Holborn, Sedgley.
<b>PAINTING—</b>			
June 30	Swindon—Painting Schools	School Board	J. Clark, 130, Princes-street, Swindon.
" 30	Wolverhampton—Painting Schools	School Board	T. H. Fleming, 102, Darlington-street, Wolverhampton.
July 3	Sheffield—Painting and Cleaning	Hospitals Committee	C. F. Wike, City Surveyor, Town Hall, Sheffield.
" 4	Sheffield—Painting and Distempering	School Board	J. F. Moss, Clerk, Sheffield.
" 4	Bexley, Kent—Painting and Repairs	School Board	J. Ladds, 7, Doughty-street, London, W.C.
" 5	Folkestone—Painting School, &c.	Borough School Board	A. H. Gardner, 3a, Cheriton-place, Folkestone.
" 6	London, E.C.—Painting, &c., work	Guardians of St. Saviour's Union, Surrey	G. D. Stevenson, 13 and 14, King-street, E.C.
" 8	Glass Houghton, Castleford—Painting School	School Board	C. A. Phillips, Clerk, Castle-street, Castleford.
" 10	Wilden, near Bradford—Painting	School Board	W. Neal, 9, Wellington-street, Wilden, near Bradford.
<b>ROADS AND CARTAGE -</b>			
June 30	Beverley—Levelling, &c.	Corporation	Borough Surveyor, Guildhall, Beverley.
" 30	Brighton—Granite Spalls	Town Council	F. J. C. May, Borough Surveyor, Town Hall, Brighton.
" 30	Wolverhampton—Granite Setts	Streets Committee	J. W. Bradley, Surveyor, Town Hall, Wolverhampton.
July 1	Little Woolton, Liverpool—Macadam	Urban District Council	E. Simmons, Surveyor, Grange-lane, Gateacre, nr. Liverpool.
" 3	Minehead—Hire of Steam Roller	Urban District Council	J. Cribb, Surveyor, Minehead.
" 3	London, W.—Repairing, &c., Footways	Acton District Council	D. J. Ebbetts, 242, High-street, Acton.
" 4	Totton, Hants—Kerbing	County Council	County Surveyor, The Castle, Winchester.
" 4	London, W.—Paving Footways, &c.	Acton District Council	D. J. Ebbetts, 242, High-street, Acton.
" 4	Barking, Essex—Paving Slab Moulds	Urban District Council	C. J. Dawson, Council's Surveyor, Public Offices, Barking.
" 4	Acton—Paving, Kerbing, and Channelling	Urban District Council	Surveyor, Council Offices, Acton.
" 5	Hales Owen—Paving Works	Worcester County Council	J. H. Garrett, County Rd. Surveyor, Shire Hall, Worcester.
" 5	Harrow-on-the-Hill—Making up Road	Harrow Urban District Council	E. Lines, Surveyor to Council, Harrow-on-the-Hill.
" 5	Balby-with-Hexthorpe, Yorks.—Works	Urban District Council	G. Glenhill, Surveyor, High-road, Balby.
" 5	Hove, Sussex—Road Making	"	H. H. Scott, Borough Surveyor, Town Hall, Hove.
" 5	Watford—Road Works	"	Engineer, 14, High-street, Watford.
" 7	Hetton-le-Hole, Durham—Materials	Urban District Council	G. G. Foster, Surveyor to Council, Hetton-le-Hole, R.S.O.
" 10	Leamington—Materials	Corporation	Borough Engineer, Town Hall, Leamington.
" 12	Woodbridge, Suffolk—Stones and Cartage	Rural District Council	J. E. Davison, Surveyor to Council, Woodbridge.
" 15	London, W.—Granite, &c.	Ealing Urban District Council	C. Jones, Engineer, Public Buildings, Ealing.
" 25	Sudbury, Suffolk—Granite	Melford Rural District Council	W. Carver, Surveyor, Long Melford, Suffolk.
<b>SANITARY—</b>			
July 1	Hythe, Kent—Sewers	Corporation	E. S. Wilks, 2, Douglas-avenue, Hythe.
" 3	Wickham Market, Suffolk—Alterations	Guardians of Plumsgate Union	Henry J. Wright, 4, Museum-street, Ipswich.
" 4	Bishop Auckland—Pipe Sewer	Rural District Council	C. Johnston, 1, Cradock-street, Bishop Auckland.
" 5	London, N.—Sewer	Southgate Urban District Council	C. G. Lawson, Surveyor, Council Offices, Palmer's Green, N.
" 5	Selby—Outfall Sewer, &c.	Urban District Council	B. McG. Gray, Town Surveyor, Town Hall, Selby.
" 11	Westminster, S.W.—Sewer and Wood Paving Works	Vestry	Surveyor, Vestry Offices, Westminster.
" 11	South Mimms—Sewerage Works	Rural District Council	W. H. Mansbridge, 40, High-street, Barnet.
" 15	Barnet—Pipe Sewers	South Mimms Rural District Council	W. H. Mansbridge, 40, High-street, Barnet.
" 15	Dublin—Drainage Works	Corporation	S. Harty, City Engineer, City Hall, Dublin.
<b>TIMBER—</b>			
June 30	Neath, Wales—Creosoted Pitch Pine for Bridges	Neath and Brecon Railway Co.	C. Talbot, Secretary, Neath.
July 3	Leeds—Wood Block Flooring	Corporation	Town Clerk, Leeds.
" 3	Genoa—Ashwood	Spezia Dockyard Authorities	Commercial Department, Foreign Office, S.W.
" 6	London, S.W.—Firewood	Fulham Union Guardians	T. A. Marsh, Clerk, Fulham Palace-road, Hammersmith, W.

## COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
June 30	Wakefield—Central Buildings	£50, £30, £20	Wakefield Industrial Society, Ltd., Bank-street, Wakefield.
" 30	Buckie, Scotland—Bridge over Burn	£20 5s.	Commissioners.
July 3	Harrigate—Kursaal	£150, £100, £75	Corporation.
" 3	Lichfield—Grammar School	£20	H. H. Brown, Clerk to Governors, Lichfield.
" 8	London, W.C.—Electric Lamp Standards and Brackets	£10, £5	Surveyor, the Vestry of St. Martin-in-the-Fields, Town Hall, Charing Cross-road, W.C.
" 18	Tendring—Sewerage Scheme	£21	District Council.
" 27	Plumstead—Municipal Buildings and Public Library	£100, £75, £50	Edwin Hughes, Clerk, Vestry Hall, Maxey-road, Plumstead.
Aug. 1	Halifax—Twelve Shops	£50, £25	Barstow and Midgley, Solicitors, 8, Harrison-road, Halifax.
Sept. 1	Otley—Isolation Hospital	£30, £15	C. V. Newstead, Clerk, Wharfedale Union Joint Hospital Committee, Union Offices, Boroughgate, Otley.



# Property and Land Sales.

**FINCHLEY.**—Important Sale of about 23 acres of exceedingly eligible FREEHOLD BUILDING LAND, occupying exceptionally fine and elevated positions on the main London road and Nether-street, five minutes from Finchley Junction (G.N.R.), eight miles from town, and unquestionably some of the choicest land available in the northern suburbs for immediate building operations.

**MESSRS. KEMSLEY** will **SELL** by **AUCTION** at the Mart, E.C., on **MONDAY, JULY 10th**, at **TWO o'clock**, in **Four Lots**, the valuable **FREEHOLD PROPERTIES**, comprising the attractive residence, **Field Cottage**, **Ballard's-lane** (the main road to **Barnet**), together about **83 acres**, having valuable frontages to **Ballard's-lane** and **Long-lane**; the highly important block of **Building Land** of nearly nine acres, with extensive frontage to the main road; two blocks of very eligible Land, with valuable frontages to **Nether-street**, and comprising an area of about three and a quarter and two acres respectively. Each of the properties are thoroughly ripe for the erection of a superior class of property, for which the demand at **Finchley** is much in excess of the supply.

Particulars of **Messrs. CARTER, VINCENT, DOUGLAS-JONES** and **Co.**, Solicitors, **Barnet**; of **A. STOKES, Esq.**, Solicitor, **43, Bedford-row, W.C.**; and of the **AUCTIONEERS**, **41, Bishopsgate-street-within, E.C.**, and at **Woodford Green** and **Romford**. 1

**CHADWELL HEATH, ESSEX.**—Adjoining the **G.E.R.** main line station, ten miles from town, and close to **Ilford**. A highly important and fully ripe **FREEHOLD BUILDING ESTATE** of **58 acres**, occupying an unusually fine position, with extensive frontages to existing roads, and very favourably circumstanced for immediate development to cope with the rapidly growing demand for small villas in this locality. Gravel subsoil.

**MESSRS. KEMSLEY** will **SELL** the above by **AUCTION** at the **MART, E.C.**, on **MONDAY, JULY 10th**, at **TWO o'clock**, in **One Lot**. Particulars of **Messrs. E. F. and H. LONDON**, solicitors, **53, New Broad-street, E.C.**; and of the **AUCTIONEERS**, **41, Bishopsgate-street-within, E.C.**, and at **Woodford Green** and **Romford**. 1

**GREEN-LANES, WOOD GREEN, N.**—166 Lots of exceedingly valuable **FREEHOLD BUILDING LAND**, free from tithe and land tax, in a rapidly increasing, convenient, and accessible district, near **Green-lanes Station** on the **G.E.R.** and **Hornsey Station** on the **G.N.R.**, the cars of the **N.M. Tramway Company** passing the estate, comprising a commanding corner site, having an important frontage to the **Green-lanes**, suitable for the erection of business premises; and **165 Plots**, with frontages to **West-berry-avenue** and the new roads leading therefrom, affording choice sites for the erection of villa residences, which are greatly in demand, and the property being fully ripe for building operations offers an excellent opportunity for the erection of ground-rent. Also one Lot with a paddock in the rear. For **SALE** by **AUCTION**, on behalf of

**THE BRITISH LAND COMPANY, LIMITED**, at the Manor House Tavern, **Green-lanes, Finsbury Park**, on **THURSDAY EVENING** next, **JUNE 29th**, at **SIX and SEVEN o'clock**. Free conveyances. Possession on payment of 10 per cent. deposit, balance payable by easy instalments extending over nine years.

Particulars, plan, and conditions of sale may be obtained of the **SECRETARY**, **25, Moorgate-street, E.C.**; and at the **Place of Sale**.

SALE DAYS for the Year 1899.

Messrs.

**FABREBROTHER, ELLIS, EGERTON, BREACH, GALSWORDY, and CO.** beg to announce that the undermentioned dates have been fixed for their **AUCTIONS** of **FREEHOLD, Copyhold, and Leasehold ESTATES, Reversions, Shares, Life Interests, &c.**, at the **AUCTION MART, Tokenhouse-yard, E.C.**

Other appointments for intermediate Sales will also be arranged.

Thursday, June 29  
Thursday, July 6  
Thursday, July 13  
Thursday, July 20  
Thursday, July 27  
Thursday, Aug. 3  
Thursday, Aug. 10

Thursday, Sept. 21  
Thursday, Oct. 12  
Thursday, Oct. 26  
Thursday, Nov. 16  
Thursday, Nov. 23  
Thursday, Dec. 7  
Thursday, Dec. 14

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. . . AN . . .

# Architectural Competition

. . . FOR . . .

## A VILLA ON THE RIVIERA.

The Proprietors of the ARCHITECTURAL REVIEW have been commissioned by Sir William Ingram, Bart., to obtain designs for a villa which it is his intention to build on a site facing into the bay of Monaco. In view of the success attending the competition in the "Builders' Journal" for the design for a country house in Kent, it has been decided to open a similar competition for the villa in question.

### PREMIUMS AMOUNTING TO 110 GUINEAS

are offered. Particulars are given in the ARCHITECTURAL REVIEW for July.

*Amongst other valuable matter the following Articles also appear in the issue for July:*

KENSINGTON PALACE: By W. J. Loftie, B.A., F.S.A., illustrated by special photographs and engravings.

THE DECORATION OF ST. PAUL'S: By Edward S. Prior.

BOURGES: ITS CATHEDRAL AND OTHER CHURCHES: By S. N. Vansittart: Part One.

TABLE GLASS: By Harry J. Powell, with special illustrations by the Author.

THE WELL HEADS OF VENICE: By F. Hamilton Jackson, illustrated from drawings and photographs by the Author.

RUBENS: By R. A. M. Stephenson.

ART FROM THE POINT OF VIEW OF SOCIOLOGY: By M. E. R. Guyau. Introduction.

ARCHITECTURE AND CRAFTS AT THE ROYAL ACADEMY: Third Supplement.

SPECIAL PLATE: Lincoln's Inn Fields.

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## The Architectural Review,

EFFINGHAM HOUSE, ARUNDEL STREET, STRAND, LONDON, W.C.





JULY 5, 1899.

No. CCXXX.

## "BUILDERS' JOURNAL" EXHIBITION.

By kind permission of the Committee of the Architectural Association, an Exhibition of the 134 sets of drawings submitted in connection with our competition for a country house at Hythe is being held this week at the rooms of the Association, 56, Great Marlborough Street, W. The Exhibition, which is open daily between the hours of 10 a.m. and 7 p.m., will close next Saturday.

## An Architectural Causerie.

### The Conduct of Competitions.

CONSIDERING that the competitive system has apparently come to stay,

and considering how much additional work is thus imposed on the profession, is it not time that some effort should be made to simplify this system and lessen the work? We seem to want, first of all, a better understanding between the assessor and the assessed; the general principles on which the designs are to be judged need to be laid down, and generally understood. If one compares the selected designs in almost any competition, it is most difficult to understand on what principle they were selected. Given a certain site, a certain programme of accommodation required, a certain sum of money to spend, it is evident that there is the best way of treating the scheme, which way becomes the right way; yet you often get three selected designs, each one entirely different from the others, absolutely contrary in general idea and treatment. The obvious inference is that if one is right the others are wrong, and if so, on what principle were they placed? In every competition you find the scheme treated in a variety of ways, the designs showing contrary general ideas. The question is—should the assessor select all those which give what he considers the right general idea, and then from these select the three in which this idea is best worked out, so as to get three on the same lines arranged in order of merit—to the prejudice possibly of others which are far better worked out and more complete and artistic in themselves, but on the wrong lines—or should he select the best examples of three different treatments, as he generally seems to do? Should the prize go to the best idea, however poorly worked out; or to the design which is most finished and complete in itself, however wrong the idea? If, as was the case not long ago, the subject is a Town Hall and Municipal Offices, and the assessor

happens to be of the opinion that, under the special circumstances, the right idea is to make the two buildings distinct and separate; should the award go to one which adopts this general idea—even though the plan of the office block be most poorly worked out, though main walls and chimney stacks and strong rooms be carried on girders, and the general effect be feeble in the extreme—to the prejudice of others far better in themselves, but which showed the two buildings joined together? In such a case as this would the assessor consider that, given the right idea, the competitor could be trusted to work it out more thoroughly and make a job of it in execution, and, if this was his idea, is it the right principle on which to assess? Again, how far is it permissible to award the premiums simply on the convenience of the arrangements, with no thought of architecture, as we often see done? Given a certain programme, it is compara-

tions, and simplifies matters considerably; but if he is there to choose what he thinks the public would like, his use is not very obvious, the public could choose so much better for itself. If we could only get a general agreement on this one point, how much wasted labour—not to mention self-respect—would be saved, labour now expended in trying to tickle the popular taste, in inventing wonderful features to catch the assessor's eye and warp his judgement. But if, on the other hand, the assessor has simply to voice the popular taste, we need waste no more time in trying to produce architecture. And as regards waste of time and labour, why is it necessary to make so many highly finished drawings? They are quite thrown away on an assessor who knows his work. Such a man could judge quite well from the preliminary small sketches which most people make before they start to draw out their designs. Why could not these sketches be



DRAWN BY C. G. HARPER.

tively easy to arrange the accommodation conveniently; the real difficulty comes in when we try to arrange it artistically as well—to make architecture of it. It is comparatively easy to plaster on an arbitrary elevation that has little or no relation to the plan; the real difficulty is to design the plan so that a good elevation grows from it naturally—becomes inevitable. How far is an assessor justified in giving credit to a pleasing elevation that is not a natural growth from the plan? This opens up the general question—How far are the principles of Architecture, as generally understood, to be applied in assessing a competition? If they are to be enforced, then badly constructed schemes and false elevations would be out of court, however convenient their arrangements. Is an assessor appointed to give the public what it wants? or what it ought to have? If we admit that he is there to tell the public which design is really the best this provides an answer to many other ques-

sent in with explanatory notes, and so save the enormous waste of time and money involved in the present method? A. R. J.

### "The Leather Bottle," Merton.

THOSE who know Wimbledon and its

neighbourhood well will learn with regret that the picturesque house, known as the "Old Leather Bottle," at Merton Rush, has just been pulled down. It was a humble, but curious and extremely countryfied, old roadside inn, which, in common with the famous "Leather Bottle" at Cobham, near Rochester, and two or three other examples throughout the country, helped to keep alive the memory of the days before glass bottles were cheap enough to be used for common occasions. As a plain matter of fact, however, the clumsy-looking sign of this inn was made not of leather, but of wood, and did not in the least resemble the shape of the old Black Jacks, as the ancient leathern bottles were called.

G. G. H.



## An Architectural Plan.

POSSIBLY the most difficult thing that an architect is called upon to do is to plan satisfactorily, at the same time for convenience and for architectural effect. To plan for convenience only is comparatively easy, and so it is to plan for elevation alone; and even a convenient plan which also lends itself to pleasing elevational treatment is seen with sufficient frequency, particularly in competition designs. But still, a truly architectural plan is rare—a plan which, while suited to its purpose, compels architectural treatment, not only in elevation, but in mass, not only externally, but internally. It is not too much to say that every architecturally important building which the world possesses is so planned, nor too much to prophecy that every really great building of the future will, of necessity, be similarly treated. The architectural in planning is therefore worthy of most earnest study by all those who aim at producing works of lasting value—that is, by every living architect. And it has been an almost neglected study in England! Possibly its neglect has been at the root of our failure, save very rarely, to rise above the commonplace in important public works, in an age when such are constantly being undertaken, both in the metropolis and in our provincial towns and cities, and when we frequently succeed in dealing with smaller works demanding only convenience and picturesqueness. In fact, many an erected failure could be pointed out which possesses every element of success except this one essential of an architectural plan, such as would, of necessity, have led to noble grouping and harmonious distribution of the parts externally and to fine vistas within. Without this, delicate elaboration of detail is of no avail—nor good isolated features—nor a picturesque outline—nor fine rooms. A great building, above all things, must be *planned*. It must be arranged so that, whether considered as a whole or in detail, it is entirely satisfactory from every point of view—it must be planned not merely to be drawn on paper, but to be built: to be seen and enjoyed in centuries to come. And the study of the great buildings of the past which have been so arranged must, to be of real value, be personal. Let us study drawings of them first, by all means, particularly the plans; but then let us see them, if we wish ever to do as well, and note the effects for ourselves. Next best to this—for travelling is expensive and not within the reach of all—come photographs exhibited by a good lantern. But photographs can each show but a single view, and not always the one most wanted for an understanding of the effect as a natural development of a greatly-conceived architectural plan.

G. A. T. M.

## OUR COMPETITION.

The assessor's awards in the Competition recently held for designs for a country house will be found on page 321. The whole of the drawings submitted are now being exhibited at the rooms of the Architectural Association, 56, Great Marlborough Street, W. The exhibition, which is open daily between the hours of 10 a.m. and 7 p.m., will close next Saturday.

## On Reflection.

### An "Architectural Review" Competition.

THE novel plan of introducing clients to architects by means of a competition in a trade journal, has led to some interesting developments we did not originally contemplate. As we announced last week, we hope to be able, apart from the commission for building the house at Hythe, to place other commissions in the hands of some of the architects who have taken part in our competition, another client having intimated his intention of erecting houses from some of the designs submitted. The great success of this competition has encouraged our big brother, the "Architectural Review," to launch out with a similar scheme. In the July number, just published, will be found particulars of a competition, to be held in connection with the "Review," for a Villa on the Riviera, to be erected for Sir William Ingram, Bart. The premiums offered are seventy-five guineas, twenty-five guineas, and two of five guineas each, and we have no doubt the scheme will be as heartily taken up as our own has been.

### To Save Killarney.

THE provision of open spaces in our towns and cities is now generally regarded as a fitting object for public enterprise and for private generosity. But in many cases the work is rendered more difficult and expensive by the neglect of former generations. There seems some little danger that a similar thing may happen in regard to some of the most beautiful spots in the country; that for want of a little foresight we may allow some of these fair spots to be bought up and closed to the public, leaving to future generations the burden of buying them back at enormous cost for public use—if, indeed, the demon "Jerrybuiltus" has not already spoilt their beauty. There is some fear that this evil fate will overtake the famous Muckross Estate at Killarney, and an effort is being made to impress upon the Government the desirability of purchasing the estate as a national playground after the manner of the Yellowstone Park in America. The suggestion is not a new one; a correspondent of the "St. James' Gazette" states that he has been urging this step upon her Majesty's Government for nearly twenty years without—it need hardly be said—receiving much encouragement. There are, of course, difficulties in the way of Government action in such cases. If once the policy of purchasing a country estate for public use is admitted, it may be difficult to say where it is to stop; if Killarney, why not other beautiful places? Still, the spoiling of "Beauty's home, Killarney," would be so great a calamity that almost anything should be done to prevent it. That useful society, the National Trust for Places of Historic Interest has the matter in hand, and may be trusted not to let it rest till the danger is averted.

### A Point for Road Contractors.

A QUESTION of considerable importance to road contractors was argued in the Queen's Bench Division last week, when Messrs. Fry Brothers, engineers and contractors, brought an action against Mr. Cameron Corbett, M.P., for the balance due on a contract for making-up roads on his building estate at Lewisham. There was no dispute as to the amount due, and the action appears to have been a friendly one designed to decide the mode in which payment for such contracts should be made. The defendant

maintained that he was not bound to pay until the work was finished, though he had in fact paid £17,000 out of the £21,372. But the roads could not be completed till the houses were up, because the local authority would not give a certificate till then, and there was no obligation on the defendant to build within any given time. It would follow, therefore, that if Mr. Corbett's view of the building owner's obligations to the road contractor is correct, the latter is liable to have to wait an indefinite time for payment. That might be a very serious matter for the contractor, and we do not understand that Mr. Justice Grantham, although he gave judgment for the defendant, endorsed that view. In summing up to the jury he asked them to decide whether the defendant was to pay everything up to the full value of the work done as it was going on, or whether he was bound only to make reasonable advances, and whether the advances that had been made were reasonable. The jury found that the defendant was only bound to make reasonable advances, and that he had done so. It would thus appear that in this matter, as in so many others, the middle course is the right one. On the one hand, the owner of the building estate is not entitled to withhold all payment till the roads are completed (in other words, till his building operations are finished); on the other hand, the road contractor must not expect to be paid in full for all the work done as it progresses.

### School Board and Architect.

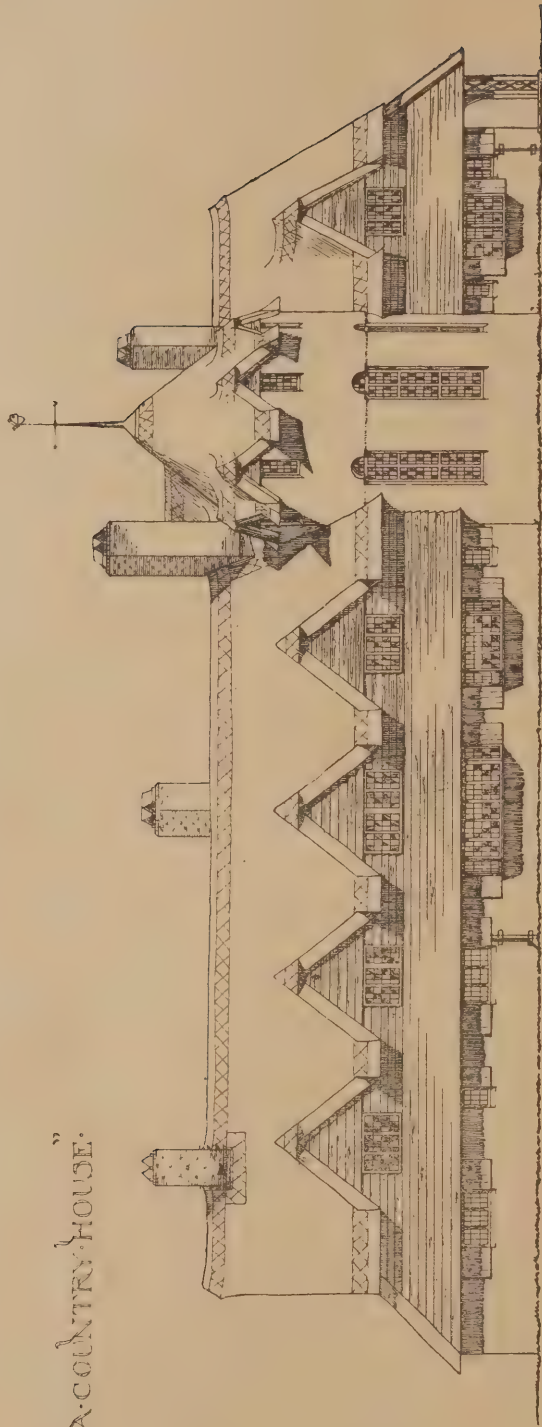
IF all public bodies were like the West Mersea School Board there would be very little competition amongst architects for commissions to erect public buildings. A case lately decided in the Queen's Bench Division would seem to show that the members of the Board have but a very rudimentary sense of equity. They engaged an architect, Mr. J. W. Start, of Colchester, to prepare plans for new schools, but on the ground that the cost was too high, they declined to carry them out. A second set of plans was prepared, but again the lowest tender exceeded the limit of cost decided on by the Board. Instead of asking Mr. Start to make a further modification, the Board employed another architect, and declined to pay Mr. Start's fees. He accordingly sued them for £473 5s. 8d. for professional services rendered in connection with both sets of plans. It may be presumed that these plans, although not actually carried out, were of some use to the Board or to the architect finally employed. The jury evidently thought so, for they found for the plaintiff for £150. Even this small consolation, however, was denied to the unfortunate architect, for the defendant's counsel set up the plea that the contract was not a binding one because it was not sealed with the seal of the School Board. Mr. Justice Wills was bound to accept this plea, because it happens to be the law, and accordingly gave judgment for the defendants, but in doing so he expressed regret that this technical plea had been raised, and said it was one with which he had no sympathy. Most people will agree, we think, that to escape from a clear liability on such a pretext is conduct which, if anyone but an architect were concerned, might fairly be stigmatised as dishonest. As however, the victim belongs to that long-suffering class, we suppose the conduct of the Mersea School Board is another example of that colossal and apparently incurable ignorance which seems to affect so many public bodies and so many private clients in regard to matters that pertain to professional practice. Clients too often fail to realise that the preparation of plans involves not merely a high degree of technical, and, perhaps, artistic skill, but also a great deal of hard work.



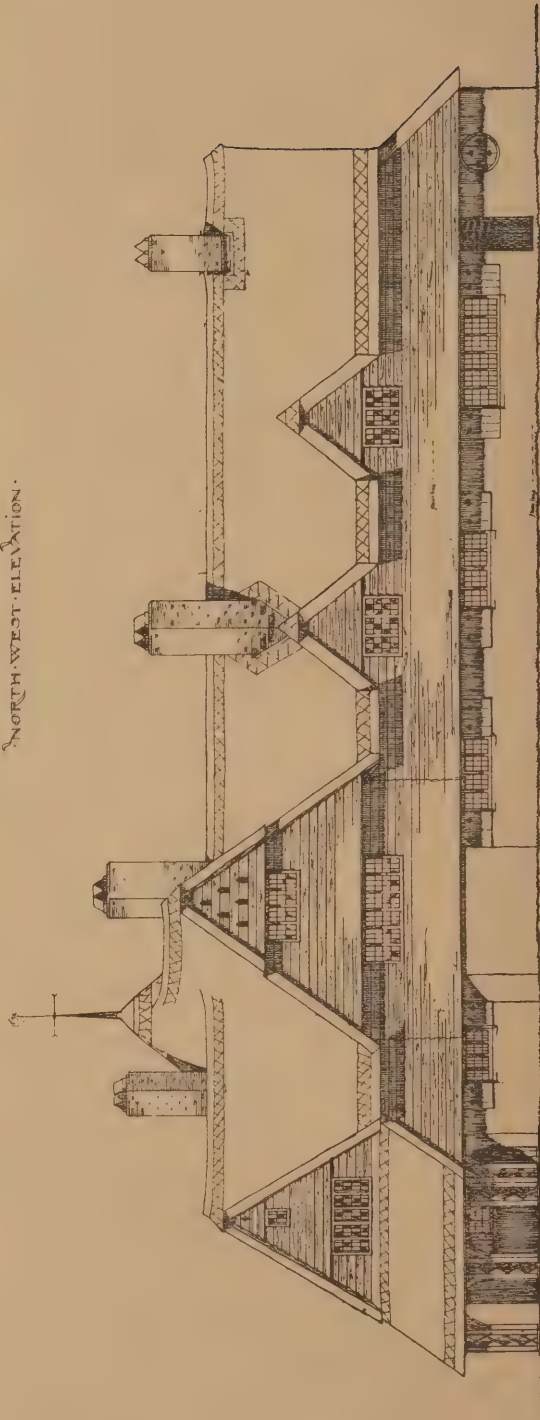
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## "BUILDERS' JOURNAL" COMPETITION.

### THE ASSESSOR'S AWARDS.

IT will be remembered that some weeks ago we announced a competition for a country house, to be erected near Hythe, and offered premiums of twenty guineas, ten guineas and four guineas respectively, for the best sets of designs submitted. A full statement of the requirements of the client and the conditions of the competition will be found in our issue dated May 10th.

The number of designs sent in reached the large total of 134, and these are being exhibited this week at the rooms of the Architectural Association, 56, Great Marlborough Street, W.

Our assessor, Mr. Edward S. Prior, has made a very thorough and careful examination of all the designs submitted, and his awards are as follows:—

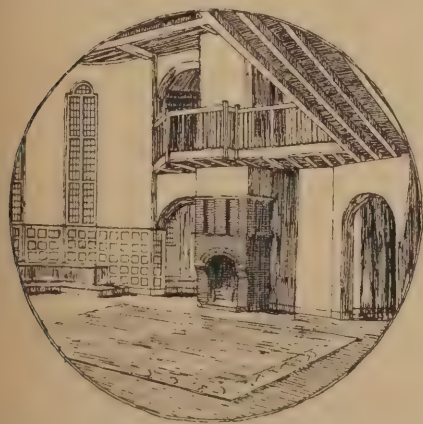
**First Premium: Twenty Guineas,**  
HERBERT L. NORTH, B.A. ("Yew"),  
28, Theobald's Road,  
London, W.C.

**Second Premium: Ten Guineas,**  
HARRY PERCY SHARPE ("Eros")  
208, Newton Road,  
Burton-on-Trent.

**Third Premium: Four Guineas,**  
WILLIAM MITCHELL ("Alfo"),  
28, Adelaide Road,  
London, N.W.

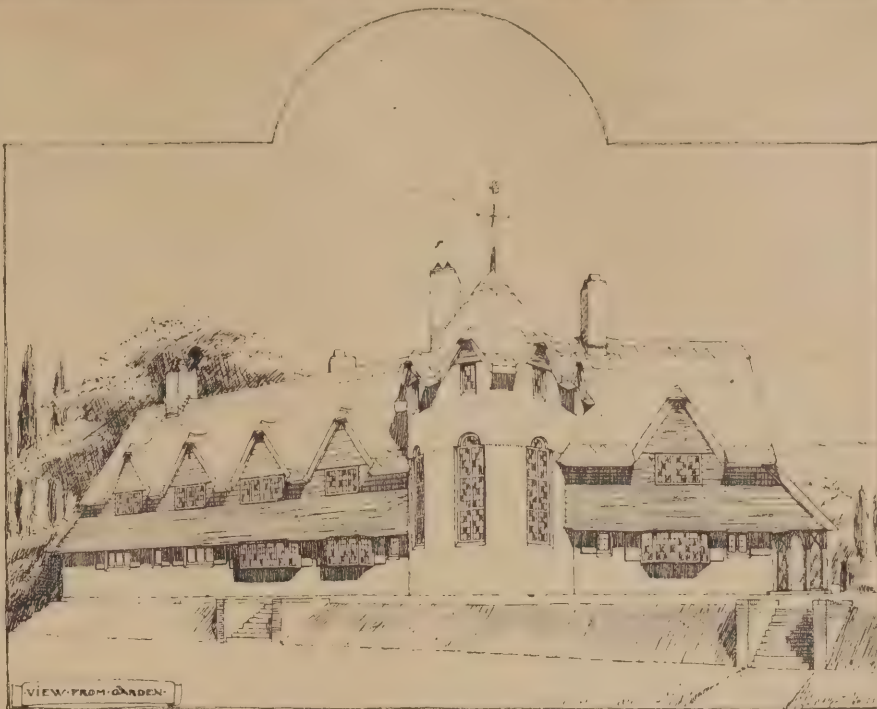
**HIGHLY COMMENDED.**—Charles M. Childs, "Caractacus," 85, Albert Street, Regent's Park, N.W.; John W. Rhodes, "Quex," Mitre Court Chambers, Mitre Court, Temple, E.C.; H. T. Rees, and H. M. Macpherson, "Torso," Westgate Chambers, Newport, Mon.; Robert Marchant, "Cypress," 64, Charlotte Street, Fitzroy Square, W.; Henry Rose, "Martello," 3, Staple Inn, Holborn, W.C.; W. L. Dowton, "Pippa," Park Lodge, Peckham Rye; Rupert C. Austin, A.R.I.B.A., "Try," 19, Villiers Street, London, W.C.; Thomas H. Smith, "Thislixum," 27, Friar Stile Road, Richmond; Pilbert Ogilvy, 3, Staple Inn, Holborn, W.C.

**COMMENDED.**—J. Ireland, "Gordon," 23, St. Swinith's Lane, E.C.; R. Wynnburn and Frank I. M. Owen, "Christian," 20, Oxford Road, Waterloo, Liverpool; Arthur H. Moore,



COUNTRY HOUSE AT HYTHE: FIRST PREMIATED DESIGN: THE HALL. BY HERBERT L. NORTH.

"Habitacle," 34 and 35, Southampton Street, Strand, W.C.; C. T. F. Palmer, "Casement," 48, Northwood Road, Highgate Archway, N.; C. A. Edeson, "Simplex," 25, Huntriss Row, Scarborough; A. T. Griffith, "Barbara," The Priory, Saltway, Malvern; A. Bartlett,



COUNTRY HOUSE AT HYTHE: FIRST PREMIATED DESIGN. BY HERBERT L. NORTH.

A.R.I.B.A., and H. F. Waring, "Long and Low 2nd," 65, Chancery Lane, W.C.; R. Morphey, "Build," 39, Cursitor Street, Chancery Lane, W.C.; Herbert T. Buckland, "Dum Spiro Spero," Queen's College, Paradise Street, Birmingham; Harold A. Woodington, A.R.I.B.A., "Red Roofs," 130, Jermyn Street, Haymarket, S.W.; J. W. Cobb, "Home," 121, Blenheim Crescent, Notting Hill, W.; Ernest A. Sudbury, "Appliqué," care of Arthur Marshall, King Street, Nottingham; L. Ingleby Wood, "Tempus Fugit," Riddles Court, University Hall, Edinburgh; J. A. Minty, "Heather 2nd," 10, Gray's Inn Square, W.C.; Henry William Cotman, "Quercus," 25A, Wardo Avenue, Munster Road, Fulham, S.W.

We hope to publish next week a full report on the Competition by Mr. Edward S. Prior. We publish this week the first premiated design; two sketches are here reproduced, and the elevations and plans appear in one of our inset plates. The following is the description which accompanies Mr. North's design:—

This design is an attempt to follow the requirements given as closely as possible in all particulars both as to plan and also elevations.

**ASPECT.**—The front faces north-west. The plan is curved so that the entrance should face south; this arrangement gives "all kinds of angles" on plan, and also enables the front to get more sunshine and a greater diversity of views than it would otherwise have.

**TOWER.**—The tower is intended by contrast to emphasise the "long and low" character of the design, and breaks up what would be a monotonous elevation; also it is not easy to get all the bedrooms required over such a small ground plan without this expedient unless they were much smaller, or the ground plan unnecessarily expanded. The rest of the plan will explain itself.

**EXTERIOR.**—Coming to the exterior, the chimneys are of red or brindled brick, with black headers dotted about.

The roof is thatched; the upper story is tarred weather-boarding. ("Dark stained wood and thatch.") There would be a layer of tarred felt between the quartering and the weather-boarding, the air space between the quartering being the best non-conductor of heat or cold. No bedroom has more than one outside wall. The ground floor and tower are of brick with white rough-cast to keep the house dry, or they could be "white-washed brick," which was mentioned in the first notice of the competition. The windows are leaded lights in wooden frames and casements, which with the shutters would be painted cabbage green. The posts and struts

of the porch are of sawn-faced oak. ("Old timbers.") As an alternative, the weather-boarding might be painted silvery gray or whitish green, and powdered here and there with stencilled flowers and butterflies—

As it were a mede  
Al ful of fresshe floures, white and reede.

**INTERIOR.**—If the cost of the house is not to exceed £2,000 the interior must be kept very simple, and must depend solely on the proportions and the colour for its effect. The wooden floors in the principal rooms and passages downstairs would be of narrow boards nailed to wedge-shaped fillets embedded in cement concrete, the surface of the concrete being well tarred before the boards are laid; this makes a floor similar to wood block flooring at a much lower cost. The author has several times used it when a house is low and the floor has to be close to the ground level.

The fire-places could be in brick or simple wooden mantles with Dutch or other tiles.

The ceiling of the hall, and, if desired, of the other ground floor rooms, would be open, showing suitable joists carrying two layers of boards with felt between. In the principal rooms there would be a small shelf running round, about 1ft. 6in. from the ceiling, for the display of curios.

There is plenty of space for cupboards.

As to the colour, the walls would be washed with Duresco in suitable tints to the uses of each room. If papers are desired, simple diaper or stripe patterns would be suitable. In the hall the woodwork might be Indian red and pale olive green walls; the boudoir pale green and white, and so on, keeping pure, clear colours throughout, so that the effect will always be bright and cheerful.

A cellar could be added if desired, with steps to it, under the back stairs.

**COST.**—The question of cost has been very carefully considered, and the design, when fully cubed, comes out at just over 7d. per square foot at £2,000. This ought to be sufficient as there is not much brickwork for the size of the house.

The rooms are as large as they could be made for the price named; some might be reduced, if desired, with but little alteration to the proportions of plan or elevations.

Finally, all the bedrooms could be moved across to face south-east so as to get the morning sun if preferred.

**NOTE.**—On plan, the best bedroom and study underneath have been shown by accident a foot too narrow, but they have been figured correctly. The elevations are correct.



## THE ART WORKERS' MASQUE.

## WHAT IT MEANS.

THE Masque has been written about from every point of view—almost. Yet the real significance has, with singular unanimity, been overlooked by its critics.

It was not a Socialistic pamphlet translated into pageant; it was not an attempt at drama; it was not a skit on the City or the County Council; nor did it arise out of an insane desire to rival Drury Lane, as certain critics vainly hold.

The essential aim—the vital spirit of the masque—was the ambition of its promoters to show the abidingness of Beauty; that the spirit of beauty still lives, is only sleeping, and may by courage and sincerity be awakened, to shed healing, spiritual health and the love of her everywhere.

And while the dispassionate critic may regret the venomous vulgarity of certain verses in the book, while he may deplore the pitiable lack of taste displayed in the screeds of cheap satire; yet the dignified and sonorous lines in which Mr. Selwyn Image apostrophises the past beauties and glories of the great historic cities, the floods of Nature imagery in Mr. Whall's verse—verse full of appeal to the spirit of beauty to awake again and "lead with new hope our aimless feet"—to "a fairer scene, where falls the sun on meadows green, while the south-west leads out the lambs to play"—all these things show what was uppermost in the hearts of the masque's contrivers, and the lesson is a fruitful one for every artist.

The imagery of the Sleeping Beauty is sufficiently familiar and universal to make it possible to graft modern meaning on its old-

world stem, and though the joins and grafts are of necessity visible, there was yet unity and congruity in the whole.

The quest of beauty is one which, like the quest of the spirit, must always dominate the hearts of the majority in any healthy nation, and because there are signs that the search was being neglected or carried on without sufficient interest or passion—such a demonstration as the masque has given of the latent possibilities in Art, and Craft, and Architecture, is of incalculable value to the present and the rising generation of artists.

## AT THE GUILDHALL.

London's Guildhall has seldom witnessed a stranger spectacle than that which might have been seen on four evenings last week when the Art Workers' Guild produced their much-talked-of masque, "Beauty's Awakening." If this had been an ordinary dramatic performance, it would have been quite outside the scope of this journal to take notice of it. But it was much more than that; being, in fact, nothing less than the revival of an old art-form, which, though long fallen into disuse, has been associated with some of the greatest of the poets and artists of a former generation. In a spectacle, presented not by actors but by artists, one would naturally look for artistic rather than dramatic excellence. Yet the masque is a form of entertainment so unfamiliar in these latter days that the "presenters and contrivers" were no doubt well advised in prefacing their book of the masque (a beautiful production, by the way) with a few words designed to explain to "the candid and good-natured audience" the true character and meaning of the spectacle they were about to witness. The masque, it is pointed out, is not a play, but a pageant and allegory,

in which poetic and ethic aim, beauty of design and ornament are the important considerations. Without attempting too much realism and illusion, the authors hope to produce "something good in form and colour and fancy, and something perhaps worth thought in allegory and moral meaning." The work, it is admitted, is a patchwork; the workers have wrought (artist-wise) each as his fancy dictated. But this, so far from being a disadvantage, has enhanced the splendour of the spectacle; no single artist, however gifted, would have produced such a succession of beautiful pictures, and any loss of congruity is more than compensated for by the artistic variety that is the product of so many hands and brains, just as a Gothic building often owes so much of its charm to the variety arising from the freedom with which each individual craftsman carried out his own ideas.

It cannot be said, however, that the application of this principle has been equally successful in regard to the libretto, which is a strange medley of good and bad. At times the verses are distinguished by considerable grace and charm, as in the opening rondeau and the verses accompanying the procession of fair cities; at others they are the merest doggerel.

It is certainly a remarkable combination of art workers that has been engaged in this labour of love. Some of the most eminent artists and craftsmen of the day have been hard at work for many months in the designing and fashioning of the dresses and the various "properties," all of which have been produced with an artistic perfection and finish that, if the end sought had been merely commercial success, could only be regarded as an absurd waste of energy.

The stage, designed by Mr. H. Wilson, is different from anything to which we are accustomed in these modern days. It occupies a large space at one end of the Guildhall, and consists of an inner and outer scene, the former representing a forest glade. Above the stage is a broad semi-circular arch supported by Byzantine columns, the capitals of which are enriched with some beautiful designs. A flight of steps leads from the front of the stage to the floor of the hall, and the curtain, which is of yellow silk, is drawn to left and right instead of being dropped in the conventional manner.

The story of the masque has now been so often told, that no doubt many of our readers are familiar with it. It is extremely simple, being based on the old legend of the Sleeping Beauty. Fayremonde, the spirit of all things beautiful, sleeps under the spell of the witch Malebodea; around her are grouped her attendant maids—the Seven Lamps of Architecture—designed by H. Wilson and C. W. Whall. All have fallen asleep and their lamps are out. At length, she is awakened by the kiss of Trueheart, the knight, who has slain the dragon Aschemon, and put to flight Malebodea and her attendant demons. At the conclusion we are shown Fayremonde enthroned by Labour and Invention, and attended by the Seven Lamps and the Five Senses. London, after suffering many things at the hands of the demons, Philistinus, Bumblebeadalus, Slumdum, Cupiditas, Scampinus, Ignoramus, Bogus, and Jerrybuiltus, is at last enthroned opposite Fayremonde, and takes her place as a Fair City among the other Fair Cities.

The action of the story was explained by a Prolocutor (Mr. Selwyn Image), who delivered his lines with considerable elocutionary skill. One scene that appears in the book of words was entirely omitted in performance. It was that in which the demons were in turn denounced in a series of satirical speeches, full of rather vulgar and not very witty topical allusions. There would no doubt be a certain piquancy in the satirising of civic customs and institutions in the presence of the Lord Mayor and Corporation and in their own hall, though it should be said that the authors included many things besides the Corporation in the scope of their satire. There is no doubt, however, that the omission of this scene was a wise decision. Apart from the irritation it must have caused to certain sections of the audience it would have detracted from the



TIME. DRAWN BY R. ANNING BELL.



artistic effect of the whole. The introduction of these up-to-date lampoons must have had a confusing effect, utterly destroying the illusion of mediaevalism, and converting a beautiful old-world pageant into something very like a modern burlesque. Apart from this feature there is very little that is aggressively modern. Although admittedly a thing of shreds and patches, the masque maintains a certain artistic congruity; the music, though it has been criticised by some, was in keeping with the character of the piece; especially was this the case with regard to the music rendered on old English instruments by the party of picturesquely attired musicians led by Mr. Arnold Dolmetsch. Even the book of the masque, with its quaintly worded "Epistle Dedicatory" to the Lord Mayor, maintains the same old English character.

As all the actors were amateurs, it would be unreasonable to expect a very high standard of acting; yet it surely would have been possible to import a little more realism into the combat between Trueheart and the "huge and horrid dragon" Aschemon. Never surely did a beast of such fearsome appearance display so mild a demeanour; he ambled across the stage, receiving the while the spear thrusts of the doughty knight, but concerned apparently for nothing but how to get out of sight before his tail fell off; only by the clanking of his monstrous jaw did he indicate his malignant character. Again, the dance of

the Five Senses would have been far more effective had it been less wooden.

It is, however, as a spectacle that this performance ought to be judged, and from that point of view scarcely any praise could be too high. Each actor, as a rule, designed or made his or her own dress, and every dress was a work of art. A more beautiful stage spectacle than the procession of the nine Fair Cities with their attendants, which Fayremonde is supposed to see in a vision, it would be difficult to imagine. The cities represented are Thebes, Athens, Rome, Byzantium, Florence, Venice, Nuremburg, Paris, and Oxford. Each is portrayed with great wealth of artistic fancy, and the most scrupulous attention to detail.

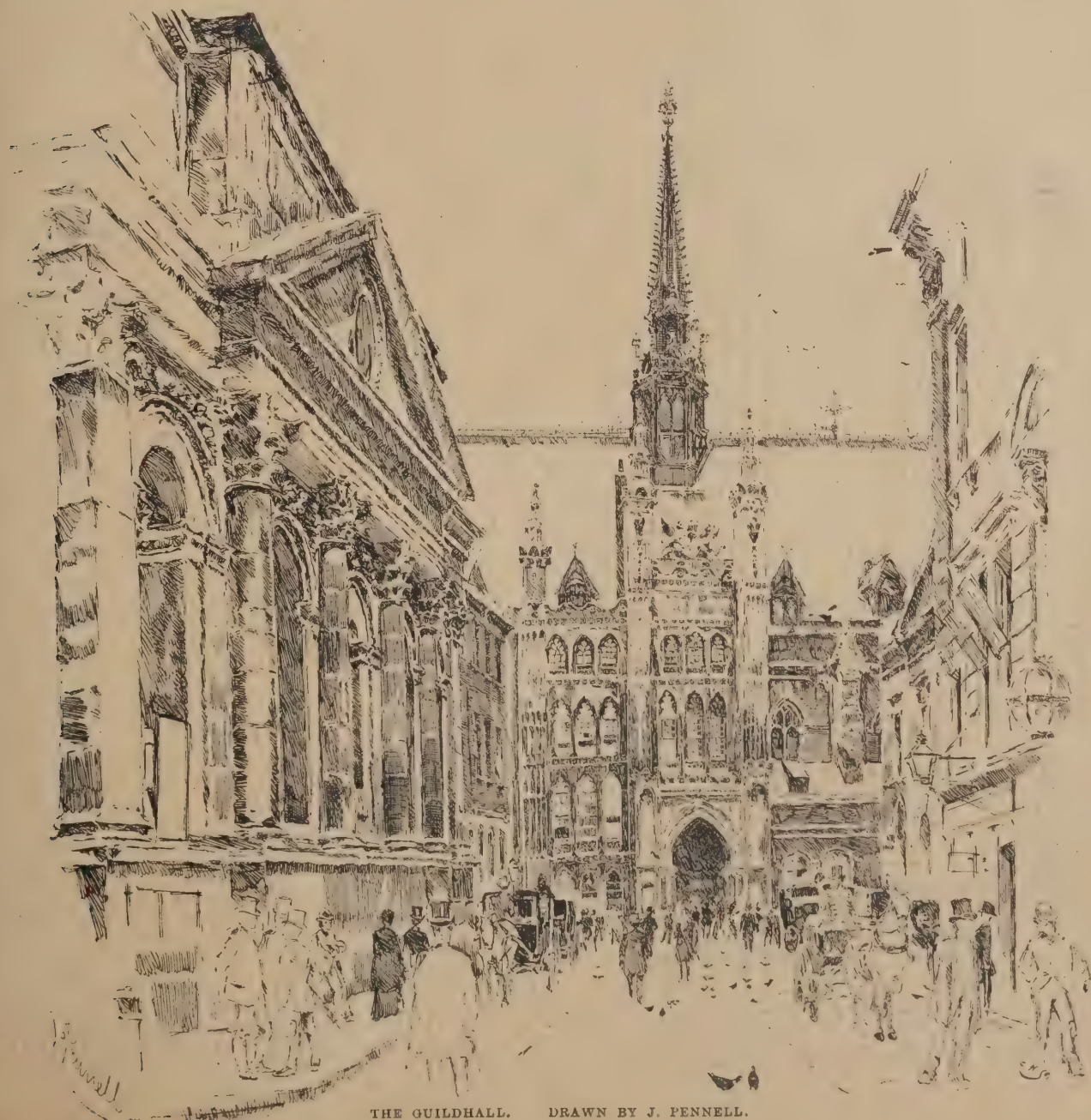
One of the most striking groups was that of Nuremburg, part of which we illustrate. Nuremburg was personified by Miss Johnstone, in a dull red and yellow robe with a quaint headdress, her train supported by two pages; she was attended by Albert Dürer (Mr. Walter Crane), a stately figure in a scarlet, fur-lined cloak, and a group of craftsmen, each bearing the symbol of his trade. Paris (Mrs. Oakley Williams), in yellow brocade, is preceded by a tiny herald bearing the arms of the city, and is accompanied by Joan of Arc and by St. Louis, while three ladies with arms entwined, symbolising the arts and graces of life, bring up the rear. This very beautiful group was, with the exception of Joan of Arc, designed by Mr. E. R. Hughes. Not less

beautiful was the dance of the Forest Leaves—little girls dressed to represent various coloured leaves, with a gorgeous butterfly in the midst of them—which took place in the first scene.

At the close of the performance all the characters marched in procession round the Guildhall so as to give all the audience a chance of examining the dresses at close quarters. Altogether it was a splendid pageant, and, thanks in large measure to the untiring efforts of the stage manager, Mr. Hugh Moss, it was carried out without any appreciable hitch.

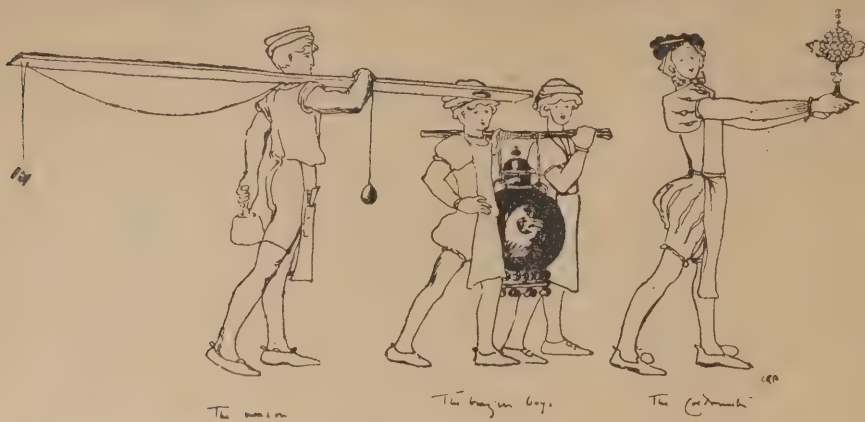
**Changes of Address.**—Messrs. Sanders and Co. and Messrs. Burnham, Williams and Co. have removed to 110, Cannon Street, London, E.C.; and Mr. J. J. Henderson has shifted to the second floor of 7, Ward Road, Dundee.

**The Troon New Graving Dock** was opened last Thursday by the Marchioness of Ailsa. The contractor for the dock and gates was Mr. George Lawson, of Blairbeth, Rutherglen; while Messrs. Drysdale and Co., of Bon Accord Works, London Road, Glasgow, provided the pumping machinery and boilers. The works have been carried out according to the plans and under the superintendence of Messrs. M'Taggart, Cowen, and Parker C.E., of Glasgow.



THE GUILDHALL. DRAWN BY J. PENNELL.





THE ART WORKERS' MASQUE: FROM THE NUREMBERG GROUP. DRAWN BY C. R. ASHBE (see p 322).

## ARCHITECTURE: WHAT IS IT?\*

BY JAMES A. MORRIS.

(Concluded from page 310, No. CCXXIX.)

AND now, before ending my paper, I would like to recall to you some little of the story of the building of the great dome of Florence in order that we may refresh our weary souls with the record of a marvellous thing. When the competition for the great north and west doors of San Giovanni had been settled, Filippo and Donatello betook themselves to Rome, the former to study architecture, the latter sculpture. To provide funds, Filippo sold a small farm he possessed, and when the lads reached Rome Filippo stood amazed at the magnificence of its architecture. He at once set about measuring all the work he could undertake—plans, details, cornices—labouring continually in and about Rome, and measuring everything good within reach, sparing neither time nor cost. Beaten in sculpture by Ghiberti, Filippo was possessed of one immense idea, nothing less noble than the completion of the dome of Arnolfo's great church, the Cathedral of Florence, which none since Arnolfo's day had dared to essay. Thus, he should rival the works of Giotto, and Cimabue. To this end, he laboured incessantly; but he did not confide his dream to Donatello, or to any living being. He pondered over the Pantheon, he examined and made careful drawings of the vaults of antiquity, he caused labourers to excavate where they could, till foundations were laid bare, and measured; and the Roman people in derision, yet uttering a truth greater than they knew, called them "treasure seekers." By-and-bye Filippo's money was done, and he supplied his wants by reverting to his old craft of setting precious stones for the goldsmiths. Donatello returning to Florence, left him alone. Consumed now by the fever of work, he neither took time to eat nor to sleep; "he drew temples," says Vasari, "round, square, or octagon, basilicas, aqueducts, baths, arches, the Colosseum, amphitheatres, and every church built of bricks, of which he examined all the modes of binding and clamping, as well as the turning of vaults and arches. In 1407, his health gave way, and he was advised to return to Florence, which he did; rich in knowledge for his beloved project. In the same year, and rumours of this must have reached him, a great assembly of architects and engineers was called in Florence, to consult as to the best means by which the cupola of the cathedral might be raised. Filippo, proposed the raising of a great drum upon the piers, on which would rest the dome, and models were prepared by him accordingly, but in secret; meanwhile he amused himself by helping Ghiberti at his doors. But, as we have seen, Filippo was a man of resource, and, hearing one morning some talk of providing engineers for the construction of the cupola, he quickly betook himself to Rome, rightly foreseeing

that he would be more appreciated there than if he remained in Florence. When, in his absence, the architects and engineers met, they stood confounded and without power to proceed, for they could not conceive of a scaffolding strong enough to carry the whole weight of the cupola till it should be completed. Then was Filippo sent for, and he returned willingly, and, when the authorities were assembled he spoke at great length. Practically, he said, "The work is not yet mine, how then can I recommend what to do?" Then he spoke diffidently of himself and of his powers, and advised that a great meeting of architects from all parts of the world should be held in Florence to advise on the matter, and that whosoever could produce the best scheme should be intrusted with the work. With this proposal the authorities were well pleased, and they called a great meeting of architects from all lands with which they held communion. Meanwhile, as architects had to be summoned from afar, they proposed that Filippo should prepare a model, but unwilling to expose his mind further in the matter, he again, after much entreaty to remain, left Florence for Rome.

In the year 1420, when Filippo was about forty-three years old, the great meeting was held; many opinions were offered. One proposed to raise a mound of earth mixed with small coins, upon which the cupola should be built, and thereafter, that the people should remove the soil for the value of the coins buried therein. Filippo alone declared that the dome could be raised very easily, and without any framework whatever. Whereupon he was laughed at, and told he was mad. But Filippo argued the matter, and pleaded for a double dome, upon which he was once more dismissed, and refusing to leave, he was forcibly carried out by the servants of the place. Filippo's dauntless spirit refused to acknowledge defeat, and what he could not effect before the tribunal, he attempted with individual citizens, and so wrought upon them that the judges, having regained courage, now began to listen to what he had to say. Still Filippo would not expose his model, but proposed, instead, to all, that he who could make an egg stand upright on a piece of smooth marble, should be appointed to build the cupola. When none could make it stand, Filippo took it daintily into his hand, gave the end of it a blow upon the marble, and thus made it stand upright. Beholding this, all loudly protested that they could have done the same, but Filippo, laughing, replied that they might also know how to construct the cupola if they could see his model and design. After much further delay, and he having in the meanwhile built several small cupolas without scaffolding, Filippo was charged with the work; but even then his appointment was accompanied by many restrictions. A colleague was by-and-by proposed, and Lorenzo Ghiberti, the man for whom Filippo, under similar circumstances, had so generously spoken, was associated with him, and at a stipend equal to his own. Meanwhile Filippo caused a complete model to be constructed secretly, which, when Lorenzo heard of, he desired to see; but,

being refused, he became angry, and, that he might not appear to be receiving his stipend for nothing, he commenced a model of his own. Their relationship, accordingly, now became more strained and unsatisfactory than ever, and this vexatious warfare between the two men continued till 1426, Lorenzo's friends meanwhile claiming for him credit equally with Filippo in the raising of the cupola. The building had now advanced to a certain stage, and two things required to be provided—certain scaffolding, and an arrangement of chains for binding the base of the cupola together. Nothing, apparently, being directed regarding either of these requirements, the work practically came to a standstill, and at last, one morning, Filippo did not appear.

Lorenzo, upon being asked for instructions replied, he would not do anything apart from Filippo. Now Filippo was in bed apparently very ill, and when the workmen in desperation appealed to him in his sick chamber he would only say, "You have Lorenzo, let him direct you." At last the wardens in their dignity also visited the sick man and repeated the refrain of the workmen, "Lorenzo will not do anything without you." Whereupon Filippo shrewdly made answer, "but I could do it well enough without Lorenzo." This significant reply sufficed for the time, and Filippo at once recovered. Still, however, Lorenzo had influence and retained power, and Filippo had to seek other means of proving his incapacity. He therefore made this proposal. "The stipend," he said, "is equally divided, now let the work also be divided. Two things yet require to be done, the chainwork and the scaffolding. Let Lorenzo choose one of these works and I will take the other." Lorenzo selected, failed, and was dismissed, with the result that Filippo was at last fully approved. He received a life-appointment for the work and a gift of money. He was thenceforth held in high renown, having achieved the aforesaid impossible; and by his genius and self-control having overcome the malevolence of his enemies, their jealousies and timid fears, he was able to give to Florence her great red



THE ART WORKERS' MASQUE: THE RED DEMON (see p. 322).

heart, which, with the old baptistry and Giotto's campanile, fairer than any white lily of the proud Florentine arms, will for ever form a triplet of stars famous in the firmament of Art.

We have glanced at the training and life of one of the men who achieved the crowning glory of one of these great works. We have seen that in his day, as in our own, were Town Councils and Board of Works. Humanity had much the same of weakness and generosity then as now, and how sore is the travail of an idea, great beyond the reach of lesser minds, we have seen, and how long a time it is before its altitude is scaled. It is the old story of the coat of many colours, in a later age: the dreamer of dreams, the seer of visions—shall

\*A paper read before the Edinburgh Architectural Society.



my sheaf make obeisance to thee? The futile imprisonment of the pit, striving to retard the lofty reach of genius.

Are we yet any nearer an understanding of our question, "What is Architecture?" Look again at the beginning, in Arnolfo's day, of this Florentine cathedral. Here is the spirit in which the rulers approached it. "The Florentine Republic, soaring ever above the conception of the most competent judges, desires that an edifice should be constructed, so magnificent in its height and beauty that it shall surpass everything of the kind produced in the time of their greatest power by the Greeks and Romans." Florence was then entering upon the most brilliant period of her career. Growing rapidly in power and political influence, she was also, by the fruits of a successful commerce, preparing the soil for those seeds which were to blossom forth in that famous school of art and intellect, whose name is divided between the province and the city which gave it birth. Dante was living. Cimabue's picture had already been carried in triumph through her streets, and, in a few years more, Arnolfo would be rearing slowly those mighty walls in the Piazza della Signoria, henceforth to be the new centre of the city's municipal life. But one street distant, and under the same hand, the Duomo itself was growing fair in brick and marble, dwarfing in size the old baptistry in front, but in recompense, clothing it with marble and with gold. A few years later, and by the Duomo's side, was conceived that fair Campanile, twin birth of sea foam and rainbow, dreamed in the brain of Giotto, and by him and his disciples hewn out of all things precious and beautiful. Thus, with many a noble palace and exquisite church, rose the "Fair City of Lilies," in her mediæval grace and splendour; and when the old order changed, "yielding place to new," with it came the majesty of Brunelleschi's great red-robed dome, "a poem and a prayer in one." A century later, as Michael Angelo passed by on his way to Rome, to labour at St. Peter's, he paused, and, looking up at the calm beauty and dignity of its lines, thinking of his own more colossal dome yet to be, he said: "I shall make a sister dome, larger still, but not more beautiful." Reverend words, and noble, truly; such as one great soul may say of another. And Masaccio's own epitaph is no less true of Filippo Brunelleschi:—

He who taught  
All others—Michaelangelo—I taught:  
He designed to learn of me. . . .

Surely, now, having communed with these great men, we may have at least seen some faint glimmering of what Art and Architecture are, and if we thereby fail, like many of them, to achieve in our work, not joy, but wealth, let us remember what was said of Schiller, of whom it is recorded that at the "partition of the earth," finding himself at the end of the general scramble, without a single morsel of plunder, he appealed passionately to Jove, who, pitying him, replied, "The strong and the cunning have seized upon the inheritance of the world whilst thou wert star-gazing and rhyming. Not one single acre remains where-with I can endow thee; but, in revenge, if thou art disposed to visit me in my own heaven, come when thou wilt, it is always open to thee."

**A new Wesleyan Church at Nettleham,** near Lincoln, is in course of erection, memorial stones being laid last week. The site of the new chapel is at the Lincoln end of the village, on what was known as the Bishop's Park. The cost of the building will be over £1,000; the contractor is Mr. E. Mawer, of Louth, and the architects are Messrs. W. Mortimer and Son, of Lincoln.

**Littleborough Church Restoration.**—Funds are being collected to restore the small but interesting church of Littleborough, Notts. The church is a Norman structure of the eleventh century, and in the outer walls of the chancel and nave there are fine specimens of the herring-bone style of masonry. Within the church is a pretty Norman chancel arch. The sum required is £200.

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## REGISTRATION OF ARCHITECTS.

### THE QUESTION DISCUSSED BY PROVINCIAL ARCHITECTS.

WITH a view to ascertaining the opinions of provincial architects on the subject of Registration, the Society of Architects have arranged to hold a series of meetings in various provincial centres for the discussion of the subject. Last Friday a meeting was held at the Board Room of the Cutlers' Hall, Sheffield, when a paper on "The Statutory Registration of the Profession" was read by Mr. Ellis Marsland, Hon. Secretary of the Society of Architects. The chair was taken by Mr. T. Walter L. Emden, the President of the Society. Mr. Marsland's paper was as follows:—

I do not propose to occupy your time at any great length this evening, but desire to point out as briefly as possible the main features of the movement we are now met to discuss. Although the question of the statutory registration of the profession has for many years occupied the minds of architects, it was not till the year 1886 that any very definite organisation was determined. In that year, on the 6th of April, a Conference of Architects was called at the Freemasons' Tavern, London, and its views were expressed in the following resolutions:—

"That in the interests of the architectural profession and of the public alike, it is desirable that all architects in the Kingdom should be united in one body, having branches in the provincial cities and towns, and a central council in London, including amongst its members representatives from the provinces.

"That a committee be formed without delay to give effect to the foregoing resolution, and to facilitate the formation of committees in the provinces.

"That it is the opinion of this meeting that instructions should be given to the committee to consider the means necessary in order to obtain an Act of Parliament making it compulsory for all architects to hold a Government diploma."

#### Work of the Registration Committee.

A committee was then formed called the Architects' Registration Committee, to give effect to these resolutions, and after careful consideration they came to the conclusion that in the last of the three lay the essence of the whole. Accordingly, they issued a circular to some 2500 architects in practice in the United Kingdom, with a request that they should sign, if they thought fit, the following declaration:—

"Whereas we, the undersigned, are of opinion that it is for the benefit of the public and the architectural profession alike that legislative powers should be obtained, so that all persons hereafter entering the profession shall be duly qualified by examination, we are desirous that committees should be formed to promote the object in view, and to obtain the necessary Act of Parliament."

Some 1300 replies were received to this circular, of whom 165 were Institute members, and 175 members of the Society of Architects.

#### Engineers and Surveyors,

After the receipt of these replies the committee set to work, with the result that a Bill was introduced into Parliament in 1887, which included architects, civil engineers, and surveyors. This Bill excited the opposition of the two last-named bodies, and it was eventually decided that the Bill should deal only with architects, and a fresh Bill was introduced and was ordered by the House of Commons to be printed on March 7th, 1893. This is the extent of progress that has been made up to the present. Before any further progress can be made it will be necessary to show that there is something like unanimity among architects upon this question, and with the purpose of obtaining the views and opinions of provincial men, whom this question affects much more seriously than men in London, the society which I have the honour

to represent here to-night is organising a series of meetings in the chief provincial centres, that architects may be brought together; and should it be found as a result of these meetings that there is a great preponderance of opinion in favour of registration, we shall, having the knowledge of your support, be encouraged in our efforts to realise the objects at which we aim.

#### Attitude of the R.I.B.A.

We, of course, cannot expect to make much headway with any Bill until we have convinced the Institute that their present attitude is a false and mistaken one, and by these meetings we hope to show them that they are acting in opposition to a large section of their provincial brethren, and also contrary to the best interests of the progress of Architecture in this country. My society has no wish to take the lead in this much needed reform, and if the Institute will but take the matter up in earnest and see it through, they will have our hearty co-operation. Then, with a united front, we shall be able to show Parliament that we are resolved Architecture shall in reality, and not as at present by courtesy, be recognised as one of the professions.

#### What Registration Means.

It may be asked what is meant by Registration? It means, in the present, that every man practising architecture shall be duly enrolled in an official register under an Act of Parliament, and be duly responsible for his professional actions, and that no one be allowed to practise until he has been duly enrolled. In the future it means that no one be allowed to practise architecture until he is duly qualified and has been found so by undergoing a qualifying examination. At present there are only three recognised professions—the Church, Law, and Medicine—to all of which it is considered an honour to belong. And why? Because to be a member of one of them implies the fact of having undergone a prolonged and complete course of study and preparation, which has fitted him for the position to which he has attained. Why is architecture excluded? To possess the knowledge to build, and the skill to plan and design a building, and to deal with innumerable questions—scientific, artistic, legal and sanitary—which continually present themselves in ordinary practice, requires a training as arduous and as prolonged as that of any to which I have alluded. If the men who provide for our spiritual and physical welfare, and those who conduct us through the mazes and intricacies of the law, are to be honoured with the dignity of being called professional gentlemen, surely the men who provide the necessary skill to erect our churches and public buildings, and to make our homes healthy and artistic, are entitled to the same dignity.

#### Builders as Architects.

But the answer is not far to seek. At present any person with or without a fair general education, any builder, builder's foreman, clerk of works, clerk in a local board office, auctioneer, undertaker, *et hoc genus omne*, with the sole qualification of being able to provide a brass plate, is at liberty to advertise himself as a person qualified to give advice to the public in the science and art of architecture. Builders and others going out of their proper province boldly proffer their services as architects to their customers, gratis; and the tempting bait of an apparent saving of five per cent. is not to be resisted. Can it be a matter for wonder that we are still unrecognised while such a condition of things exists? For at present the public have no guarantee that the class who call themselves architects are any better qualified to plan and design their buildings than the contractors who erect them, and should they employ an architect they have no means of ascertaining that his knowledge is greater than that of the builder, and the only certainty about it from their point of view is they will have to pay the professional charges.

#### The Institute Panacea.

Of what use is it for the Institute to say that their examination is a panacea for the existing evils unless this examination is made



compulsory? Until men find, that by undergoing a course of study and passing an examination, they are placed in a better position in the eyes of the public than the man who possesses no qualifications at all, it is very unlikely that an appreciable number of men will voluntarily come forward and avail themselves of this means of entering the profession. The necessity for a higher standard of professional excellence and public confidence is of essential importance to provincial men. There is a feeling—a mistaken one if you will—that local architects are all very well for the ordinary work of the town, but so soon as any work of primary importance is to be executed, architects from outside must be invited to compete. Does not this arise partly from a want of confidence, there being no guarantee in employing a man who is styled an architect that he really knows his business? But in nine cases out of ten it is the local man who, from his knowledge of the materials of the locality and the special requirements of his fellow townsmen, is more likely to carry out the work satisfactorily than an architect from a distance.

#### Advantages and Objections.

The advantages arising from registration are these: (a) Closing the doors to incompetent men; (b) Raising the standard of the profession; (c) Obtaining the confidence of the public and State recognition.

It is not proposed for one moment to say that all who desire to build should employ an architect, but what we do propose is that henceforth, in the interests of the public, no person shall be entitled to call himself an architect whose name is not enrolled as qualified under an Act of Parliament, and any person wishing to employ an architect may, by consulting the official register, ascertain what men are qualified. Objection has been urged against the movement that it will create a monopoly, and thus be opposed to the principles of modern legislation; but there cannot be a monopoly created where it is made possible for anyone who proves himself qualified to share the rights. Another objection is that it will be necessary at the outset to register some of the very men who have caused all the mischief. This is very true, and unless you do this you will find that Parliament will not listen to you. That you must respect vested interests is an axiom of Parliamentary practice, and where a man can show that he has practised architecture Parliament will say you must not deprive him of his rights, and the obstinate attempt to exclude this principle from the Medical Act was the chief cause of delaying its passage through Parliament for thirty years.

#### Proposed Registration Act.

The first effect of a Registration Act would be to put a stop to any further increase in the number of incompetent practitioners, and henceforth they would become a diminishing quantity.

The general outline of a Registration Act would consist of—

A preamble, shortly stating its objects.  
A title, which might shortly be the "Architect's Act."

The provision of a general council and branch councils to administer the Act, composed of members of existing architectural bodies, as well as members nominated by the Privy Council and registered practitioners.

A provision as to the appointment of registrars and the necessary machinery for registration.

The qualification for registration at the commencement of the Act, which should include all members of existing architectural bodies, and such other persons as could show, to the satisfaction of the council, that they were actually practising architecture; and, afterwards, only such persons as had been duly articulated, and had passed a qualifying examination.

The provision of an examination, either by the general council or some already existing architectural body.

And, lastly, fines upon unqualified or

unregistered persons practising as architects, and a provision as to their inability to recover charges for professional services rendered.

#### Attitude of the Society of Architects.

A Bill, prepared on the above lines, has been drafted by the Registration Bill Committee, and I take this opportunity to correct an erroneous impression that is abroad, that this Bill is the child of the Society of Architects. That it meets with the general approval of that body is no secret, but the Society is by no means pledged to it in all its details; it may be necessary to amend it in some particulars, and the object of this meeting is to elicit the opinion of architects on the general question, and not upon the details of any particular Bill. The time may come when, with certain modifications, the Society of Architects may adopt it, but not until the general sense of the architectural profession has been declared definitely in favour of the principle. If architects want such a measure this Society will leave no stone unturned to bring about its realisation. If, on the other hand, the general feeling is against any registration scheme, we shall be content to let the matter drop. Gentlemen, the matter is in your hands.

## Keystones.

**The First Stone of a new Hospital at Boscombe** was laid last Wednesday by Mr. W. B. Beach, M.P. The hospital will cost about £10,000.

**A New Wesleyan Chapel at Clapham.**—The foundation stone of a new Wesleyan chapel in Broomwood Road, Clapham Common, was laid last Wednesday. The building is estimated to cost £10,000.

**The Queen's Hotel, Southend,** was opened last week. Messrs. Thompson and Greenhalgh were the architects, Messrs. Symes and Co. were the general contractors, and the Rural Decorations Company decorated the ceilings. The building is of red stone, with Bath stone dressings.

**A Fatal Accident to a Steeplejack** occurred at Bridge Mills, Tintwistle, near Manchester, last Wednesday, by the fall of some of the stonework of the main building of the mill, which was being demolished. Two other steeplejacks received severe injuries. The name of the dead man is Eli Jones.

**A New Free Church** is to be erected at Linthouse; the memorial stone was laid by Mr. and Mrs. John Stephen. The estimated outlay is £7,800. The church will accommodate about 1,000 persons, and there will be a hall to seat 300 persons, a session house, a ladies' room, a church officer's house, and other accommodation. Mr. James Miller is the architect.

**The William Morris Labour Church** at Leek is a form of memorial to the late William Morris, of which he would have heartily approved. The church, which was founded in December, 1896, and is supported mainly by working people, is in financial difficulties, and an effort is being made to wipe out the present debt and provide funds for the future. Perhaps some of our readers who sympathise with the artistic, social, and ethical ideals of the great artist craftsman will like to take some practical part in this effort. The treasurer is Mr. Larner Sugden, F.R.I.B.A., of Leek.

**The Enlargement of the Parish Church at Kilbirnie** was the subject of considerable discussion at a meeting of the heritors and owners last week. Plans of alterations and improvements prepared by Mr. Charles S. S. Johnstone, of Edinburgh, were submitted, and the following resolution was agreed to: "That in the event of the kirk session collecting and consigning in bank sufficient money to meet the offered cost of the proposed extensions and alterations, and a guarantee being given by the members of the kirk session and others for the sum of £300 in excess of the offered cost, the heritors undertake that the permission asked in the application should be granted."

## Enquiries Answered.

*The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.*

#### ARTIZANS' DWELLINGS.

To the Editor of THE BUILDERS' JOURNAL.

DENBIGH.

DEAR SIR,—I shall be greatly obliged if you would kindly give me the numbers of the BUILDERS' JOURNAL or any of your publications, in which drawings and details of artizans' dwellings are given.—Yours faithfully,  
S. T. M.

A series of articles on "The Planning of Small Houses" appeared in our issues for Feb. 10th, and 17th, March 10th, April 21st, May 19th, and June 23rd, 1897. These articles, which are from the pen of Mr. H. V. Lanchester, A.R.I.B.A., will probably be of use to you. Designs for small houses also appeared in the numbers dated Sept. 2nd and Nov. 11th, 1896, and March 30th, 1898.

#### RIGHTS OF LIGHT, &c.

To the Editor of THE BUILDERS' JOURNAL.

KIDDERMINSTER.

DEAR SIR,—I should be glad if you would kindly reply to the following queries in the next issue of your valuable paper:—(1) I have a small freehold cottage which I live in, and on the next plot of ground the neighbour has built against the gable a boarded shed which is used as a blacksmith's shop, and, of course, is a great nuisance. Can I compel him to remove it, or what can I do? (2) A window has been put in a gable overlooking my property one yard from the boundary. How long takes it take to have a right to the light?—Yours, &c.  
G. J.

(1) Yes; if the gable belongs wholly to the owner of the cottage. If it does not, e.g., if it is a party wall, No. The use of the shed as a blacksmith's shop may be legally a nuisance, which can be prevented by injunction. (2) Twenty years.  
H. P. B.

#### RIGHT OF OWNER IN REGARD TO DRAINAGE.

To the Editor of THE BUILDERS' JOURNAL.

DAERMOUTH.

SIR,—A dwelling-house with the entrance at the back, and the basement storey situate under the roadway, has the upstairs w.c. joined to the public sewer; but the bath, servants' w.c., scullery, sink, etc., being below its level empty into a cesspit. This is such a nuisance that the owner wishes to connect with the sewer which runs down a hill at the side, but a plot of land owned by another person intervenes. Has the owner of the house a legal right to carry this drain through his neighbours' land without his consent? W. C. H.

The answer is in the negative. The owner has no such right.  
H. P. B.

**New Pathological Block, Oxford.**—The University authorities have sanctioned the plans of a pathological block in connection with the University Museum. The total cost is estimated at £10,000. The architect is Mr. J. Augustus Souttar, 61, Gracechurch Street, E.C.

**A Crane Accident** occurred recently which resulted in the death of one man and the severe injury of two others. The accident happened at a building in the course of erection at Falkirk. While a portion of a hand crane was being swung off a scaffolding by a steam crane, the jib of the latter unaccountably gave way and fell and broke into two pieces. John Gunn, a joiner, was killed by the falling jib, and J. McKay, a joiner, and E. McCue, a labourer, were injured.

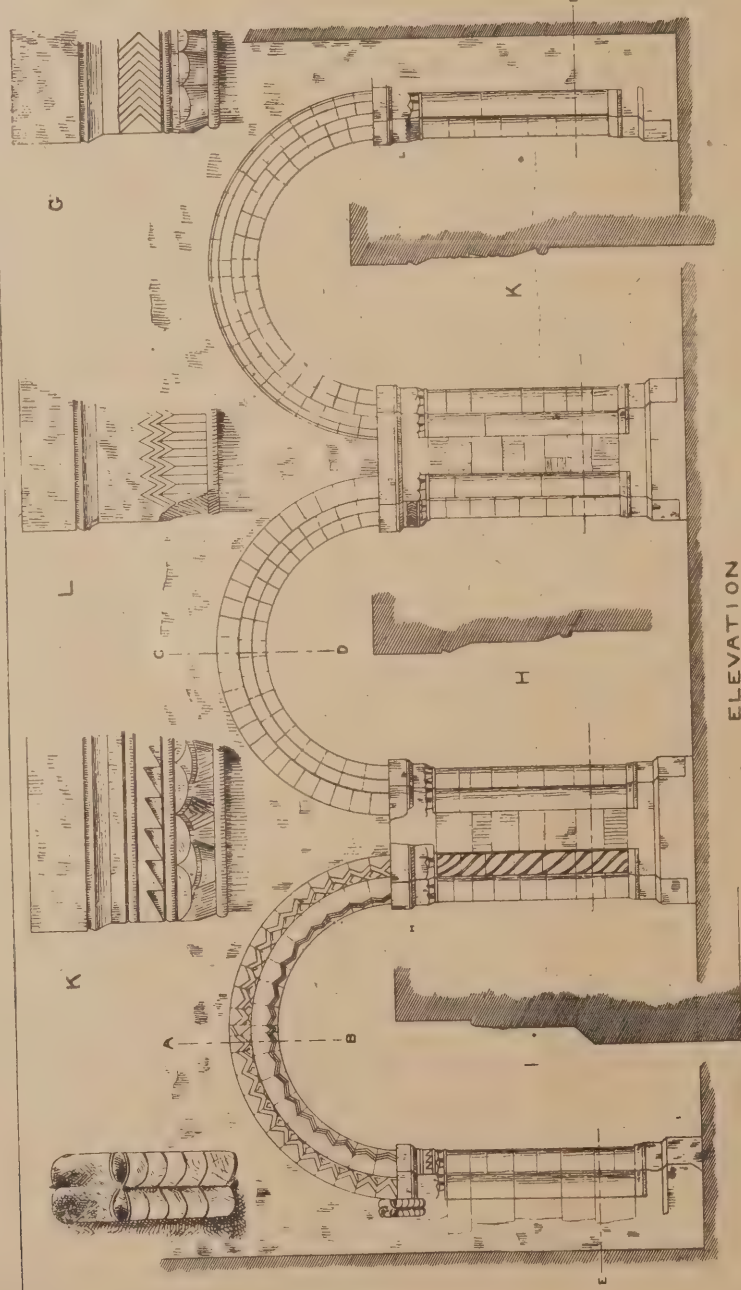
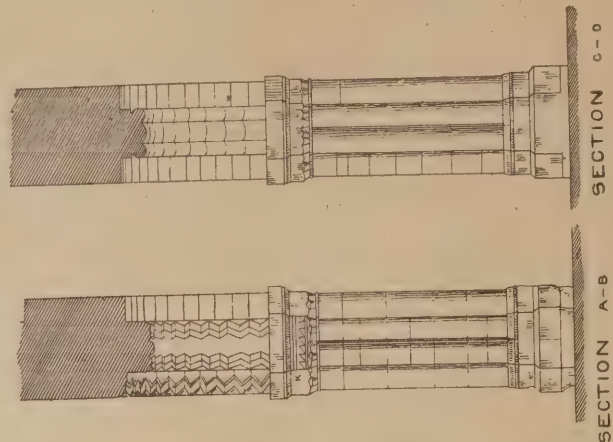


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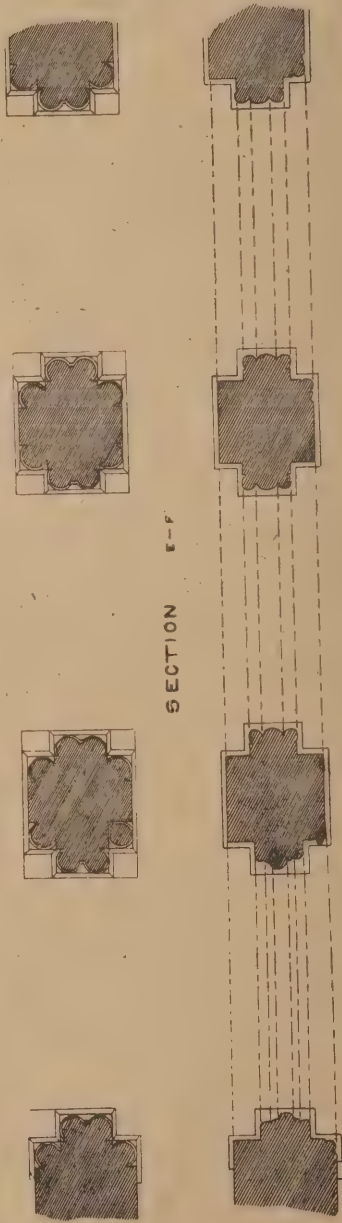


DRAWN BY G. A. BACHMANN . APRIL, 1898.

DETAILS



ELEVATION



SKETCHED BY G. A. BACHMANN  
MEASURED BY J. J. CRESSWELL  
G. A. BACHMANN



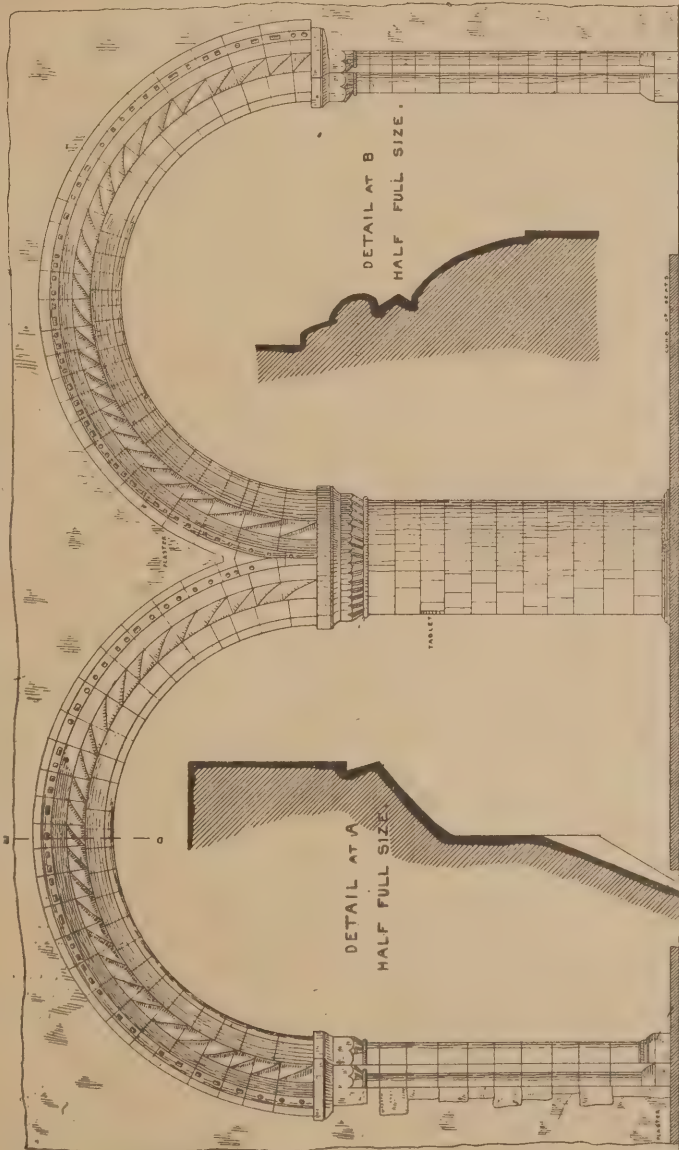
# CLEE CHURCH LINC<sup>S</sup>

## DETAILS OF SOUTH ARCADE

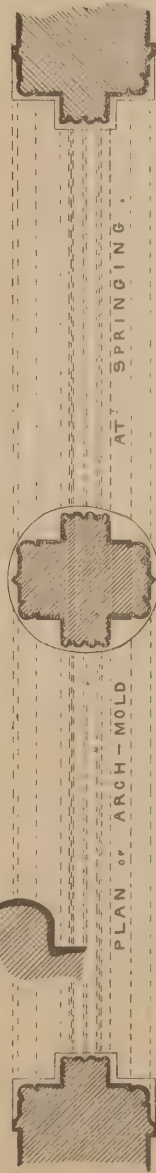
MEASURED BY C.A. BACHMANN &

C.W. TIDD

DRAWN BY C.A. BACHMANN, AUG 1898



ELEVATION

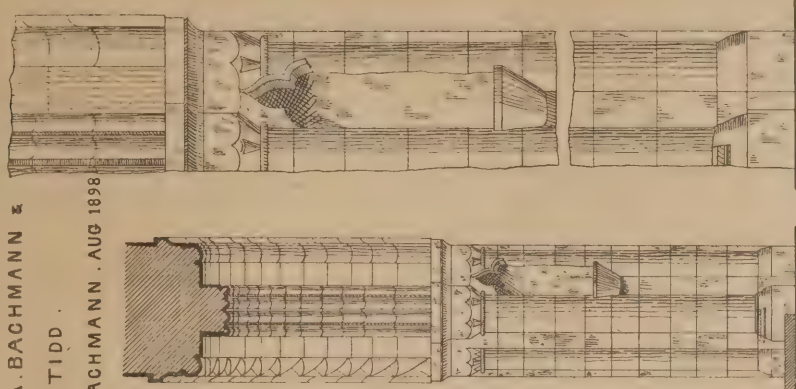


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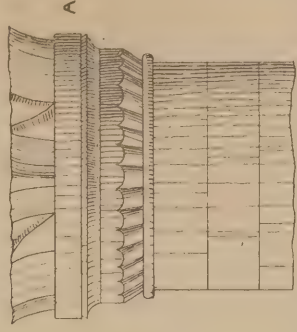
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## SOME CHURCHES IN NORTH-EASTERN LINDSEY.

BY J. J. CRESWELL.

ON the fringe of low-lying land between the Wolds and the last wide silt-laden reach of the Humber, on the border of the hill-land, yet not in the marsh, is a small group of Early Churches, differentiated both from the reputed Anglo-Saxon (? Scandinavian) of the old Church of Barton-on-Humber on the one hand and from the pure completed Norman-Romanesque of Lincoln (west front) Stow, or Rothwell on the other. Access to this district from the more fertile and settled parts of England was difficult in early times from the landward side, as it lies some twenty miles

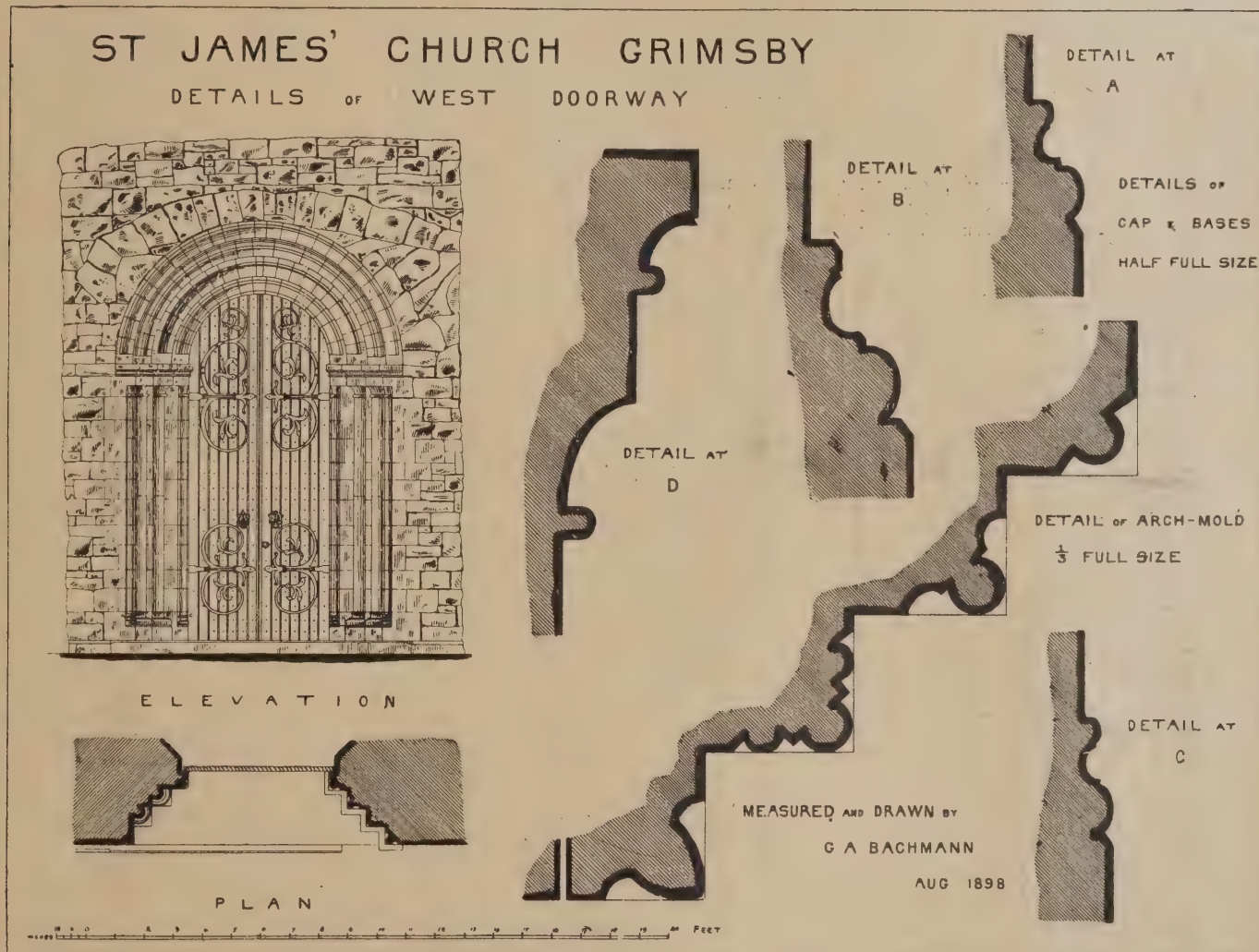
The churches above referred to are those of Clee, Scartho, Holton-le-Clay, and Brigsley, and perhaps St. James', Grimsby, though this has been so much rebuilt, mainly in the thirteenth and early sixteenth centuries, and again so largely altered in the middle of the eighteenth and restored in the latter nineteenth, that but little of the pre-Norman or Norman work remains. Besides, this is not the church of Grimsby proper, but of the priory of Wellow. St. Mary's, the old parish church, of which no vestige now remains, it is permissible to suppose was more conformable to the peculiarities of the group we are about to describe.

With no durable building stone in the immediate neighbourhood, land-carriage impossible, with few and bad roads, mere tracks for the most part, water carriage equally unavailable from the prevalence of local pirates and foreign marauders, these churches, with the exception

in the reconstructed churches, and are always pointed out as evidence of such a catastrophe.

So far as any of the original plans can be reconstructed from present remains, the churches consisted of a small plain nave and a somewhat narrower though proportionately longer chancel, square ended at the east. The apse, that survival of the Greek and Roman theatre, is not found in this district, nor anywhere nearer to it than Lincoln, where its foundation-walls still exist beneath the floor. The cruciform plan with a central tower is almost equally unknown (the transepts at Clee, as we shall see, are a later re-building.) The tower is at the west end, whence it commands the nave, and on the three remaining sides the open country round.

In the case of attack the tower would be the



eastward from Ermine Street, the great Roman road to the Humber Ferry at Winteringham, while it is but skirted by Barton Street, that presumably more ancient, if less frequented, British ridge-way which follows the lower escarpment of the hill-land from Louth to Barton. On the other hand it lies open to the sea, and to the Humber Roads; it had its own ancient port of Grimsby, and felt the full tide of successive invasions, warlike and peaceful, of Saxon, Angle, and Dane, whose race, place-names, and tongue (those of the last-named especially) still characterise and distinguish Lindsey and Holderness (the corresponding district of Yorkshire on the north bank of the Humber), from the other parts of Lindum-Colonia and Northumbria.

Direct Roman influence such as we can almost believe we trace in Lincoln, is imperceptible in these churches, and there is nothing in them which will compare for interest and elaboration with the strip-work angles and arcades, and the baluster window-shafts of Barton-on-Humber. Yet something has filtered in of both influences, modified by local circumstances.

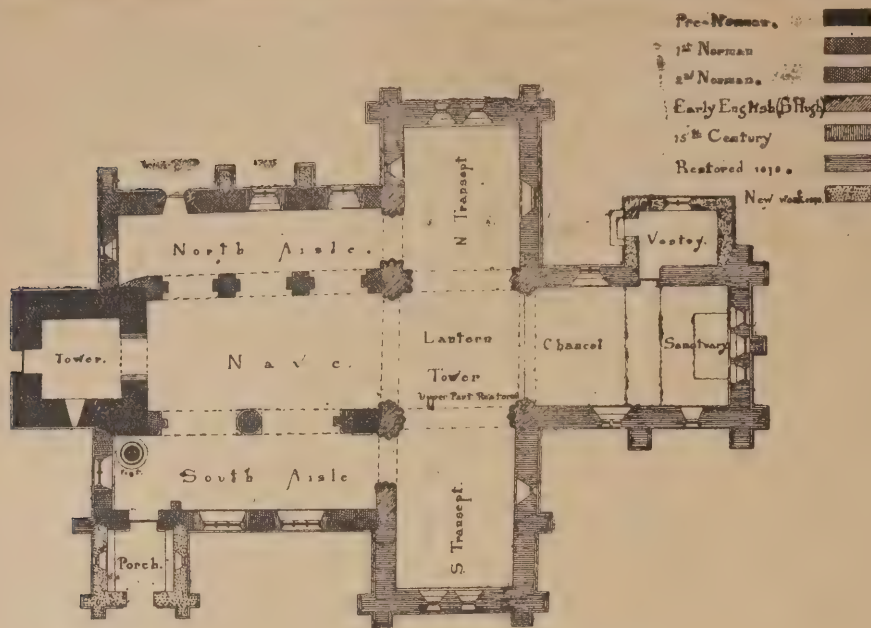
of the towers, were not so built as to last intact to our day. The towers have best stood the test of time and accident, by mere weight and bulk, and give us an idea of the construction of the rest of the fabric. Their walls, 4ft. thick in the ground story, are of sea-pebbles, chalk, and friable sandstone, well enough for work of this thickness, but quite explaining the disappearance of the presumably lighter-constructed body of the church. It is allowable to suppose that often this last was of wattle and clay, with thatched roof, like many a country cottage to this day; the rude construction of the towers was certainly hidden by plaster, of which extensive patches still remain, and clay-work would require the same protection.

To be burnt by Danish marauders was according to tradition the usual fate of a north Lindsey church, and all the churches named (Grimsby excepted) show signs of this. The sandstone, which contains a considerable portion of iron, has in many places been burnt red, greenish-brown being its natural colour. These discoloured stones have been rebuilt

stronghold of the church and possibly of the village also. Tradition still points out a stone said to have been flung by Grim, the semi-mythical founder of Grimsby, from the tower of the church (the older one referred to, it must have been) at an invading fleet, or, according to another version, among a body of revolted natives.

These towers are all accordingly strong, simple, and nearly detached, with few and small openings, without staircases, and doubtless flat roofed. The original roofs have long since decayed, but the majority of the Marsh churches have low, square towers to this day, the pinnacles hardly relieving the simple flat-topped outline, as if this form had arisen from the constant use of a flat defensible roof at first for very practical reasons, and had afterwards become traditional. All these considerations would lead to the conclusion that these towers date from the times when Danish invasions of our eastern coast were to be looked for and guarded against; and as these incursions ceased after the Norman Conquest, the towers belong to the Saxon period—are, in fact, Saxon





PLAN OF CLEE CHURCH.

towers. Some further justification for the application of this name will be brought forward later on in considering some of their details.

The tower of Cleve Church is the best example of the above-named peculiarities. Its original height (the upper part has been rebuilt above the belfry windows) seems to have been about 50ft., or  $2\frac{1}{2}$  squares, it being 20ft. wide at the ground. On the ground floor are three openings only, a small loop light on the south side, 9ft. from the ground; the western doorway, a plain, unmoulded semi-circular arch, 30in. wide by 7ft. high; the arch into the nave, 6ft. 9in. wide by 16ft. 6in. high. Both the latter arches go right through the whole thickness of the wall, tunnel fashion, without recessed arch rings; the western doorway has a rude projecting impost and a rough label moulding; the inner arch has impost and two sets-off at the foot, on the soffit side only. The second story has one opening only, a keyhole shaped window, i.e., a narrow slit having a horse-shoe arch cut out of one stone, 6in. wide by 3ft. 3in. high over all, with no provision for a shutter or glass, in this respect resembling the loop-light below, with one long splay from the outer to the inner face of the wall, where it widens out to 3ft. The second story is finished by a plain chamfered sandstone string course, above which the wall sets off about 6in. on the outside and 9in. on the inside. Standing on this string, which is the only break in the plain wall surface from the ground upwards, are the belfry windows. These are in pairs and are of the mid-wall-shaft type, a single column standing in the centre of the thickness of the wall with a cushion capital, supporting in its turn a long impost stone going through the entire thickness of the wall which carries the two arches of the double window. These have rough chamfered imposts, but otherwise the arches and jambs are like those of the ground story, and go through the wall without set-off or splay, perfectly square and plain. The arches are about 1ft. 3in. wide at the springing, and are 6ft. in clear height above the string-course on which the windows stand.

This type of belfry window is undoubtedly Saxon. Mr. Tavenor Perry, in his paper read before the Royal Institute of British Architects (Journal, February 26th, 1898), has traced this pattern to Rome, from which our early civilisation was directly derived. There is nothing like these in work known to be purely Norman, where the windows and arches are derived also from the Roman, but more developed and differentiated, and of greater refinement and elaboration.

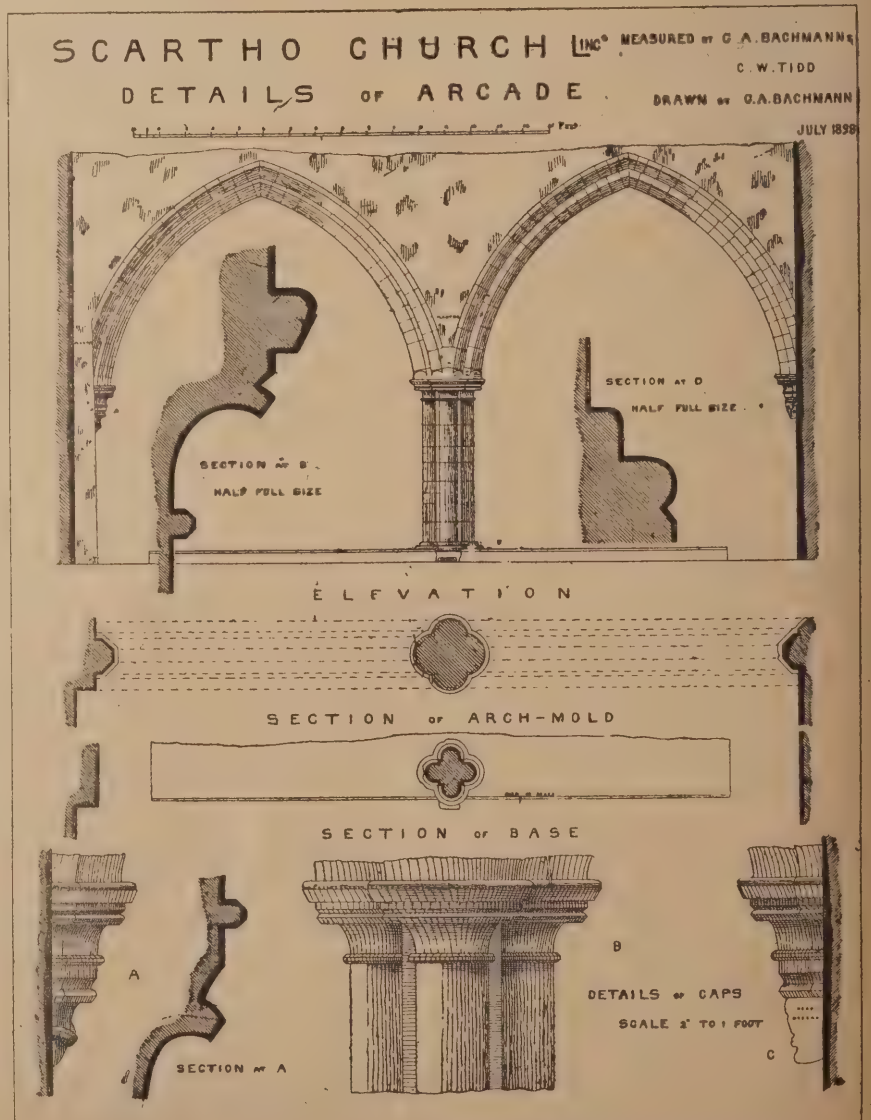
The lower part of Cleve Tower is of sea-pebbles, or "cobble-stones," with small quoins of sandstone up to the middle loop-light: of

rough sandstone rubble the rest of the height. Just above the arches of the belfry windows runs a band of two courses of freestone ashlar, as if to bond the imperfectly bonded sandstone. This and the work above it, including the parapet and eight pinnacles, are apparently fifteenth or late fourteenth century work, with nothing remarkable about them, except that two battlement copings on each face are

adapted springing-stones of groining, presumably of some vanished part of the church, but of such part there is no vestige. The south doorway, with its original wooden door, is of the same date as the parapet, so it may be that an earlier groined porch was here, and these springers are the only fragments of it remaining.

The above description of Cleve Tower applies also in general to the towers of Scartho, Holton-le-Clay, and Brigsley, which need not here be mentioned in further detail, except to say that Brigsley belfry has been entirely rebuilt in the fifteenth century. About this period heavier and more tunable peals of bells began to be more common than in the earlier times, and to this development of bells and bell-ringing we owe not only so many late belfries on earlier substructures, as at Lincoln and Wells, but the whole of many lovely towers, sometimes with accompanying spires, as at Boston, Louth, Coventry, and Canterbury.

Dismissing first the less interesting of the churches mentioned above, Brigsley calls for no special remark. A nave that has once had a south aisle now perished, and the arcade walled into the south wall of the nave, and a small chancel make up the plan. The chancel has a low side-window now blocked up, and some interesting little windows showing the transition from geometrical to flowing tracery. No illustrations of this church are shown. Grimsby Church cannot be called uninteresting, being a fine twelfth and thirteenth century cruciform structure, some 160ft. from east to west, but it does not fall into the group above marked out, except by a fragment of rude masonry in the west front and the Transitional doorway shown in the plate, which takes a position midway between the late Norman and the pure Early English of Cleve. Scartho tower is like Cleve, and is in much the same





state, the principal alteration being the insertion of an Early English doorway in the south side. Beyond this the arcade illustrated is the only part of the fabric of any interest, the remainder having been entirely rebuilt in a not very admirable style some fifty years since. The details of the arcade seem all of an Early English type, but a later feeling comes in the circular stops to the arch splays on the centre pillar, which bring the outline of the arch where it dies on the cap, to follow the quatrefoil outline. This would date it somewhat forward into the Early Decorated period, where this device for softening the abrupt junction of archmould and capital first began to be used. The way the terminal of the western respond-cornel is drawn out fine and tied in a knot is curious. A hideous head of the date of the restoration has been inserted under the other cornel. It might have been finished as a flat circular soffit with a rosette or inter-laced triangles sunk therein as are some similar respond cornels in the neighbourhood.

The fonts of both Cleve and Scartho are of a simple circular tub-shape and are apparently as early as anything in these churches. The former is decorated with a small rude cable-moulded-band, the latter is quite plain.

Cleve Church is the last and most interesting to be noticed. However isolated the original church may have been before the Conquest it early felt the influence of the invading style. The original nave had low walls, no arcades, and high-pitched roof, the marks of which, but without a weather moulding, can be seen on the eastern face of the tower; the chancel was doubtless equally plain. The north arcade presents a curious problem. Was the westernmost arch the old chancel arch? It is more elaborate in all its details than the remaining two; it is not a true semi-circle, having been apparently reduced from a larger arch, as is also shown by the imperfect and fragmentary keystone. A large "beak-head," apparently the stop of a perished label-mould is preserved in a position suggesting such a previous use for it, the eastern impost is discontinuous from that of the adjoining arch, and the bond of this pier is very imperfect. The remaining arches are simpler, but are worked to correspond generally with the westernmost.

The south arcade is of the later Norman style; if the northern may be dated as of the time of Bishop Remiguis, of Lincoln, this may be put down as of his successor, Alexander. The little canopied niche on the eastern respond is, of course, a late insertion, probably fifteenth century. Set into the cylindrical pier is a tablet with one of the most interesting architectural inscriptions known in England, which gives us the date not of this particular pillar, but of the later completion of the entire transformation to the double-aisled, cruciform church towards which this was a step. It is translated as follows:—"This church is dedicated in honour of the Holy Trinity and the Blessed Mary, on the seventh of March, by the Lord Hugh, Bishop of Lincoln, in the year from the incarnation of our Lord MCXCII., the third of the reign of King Richard."

On the south face of the eastern respond is a fragment of string-course, showing this to have been the external face of the original south wall.

The north aisle is narrower than the south, and its wall thicker, with a considerable internal batter, leaving no doubt as to its being the earlier of the two; in both of these fifteenth century windows have been inserted.

The earliest work of Saint Hugh is evidently the arch opening from the north aisle into the transept. The jambs show the "bottell" shaped shafts, the abacus and the upper part of the bell of which remain square, but the bell is not under-cut, being a plain, flat surface, into which the bottell-shaped portion below dies. The mouldings are rude and coarse. The corresponding arch on the south is much improved both in design and workmanship, the bell is undercut, and the mouldings are finer. The remaining arches of the crossing are all similar in detail, except that in the chancel arch and the arch next the nave the square abacus and cap are abolished, and

both follow concentrically the outline of the shafts below. These arches form in their way as interesting an instance of the development of the Early English style as does Saint Hugh's work at Lincoln.

Within the south doorway on the eastern side is a stone pedestal about 3ft. 3in. high, with a shallow sinking on the top, once apparently deeper; it is doubtless the remains of an ancient holy-water stoup. Sunk in the face of the upper portion is a Maltese cross in a circle.

Before the restoration of 1879 a low roof covered the entire church from end to end, including the central tower; this has now been raised above the roof and lantern lights have been inserted, and new high-pitched roofs put on. The chancel and transepts have been largely rebuilt; the vestry and south porch are new.

## Professional Practice.

**Burton-on-Trent.**—The ceremony of laying the foundation-stone in connection with the workmen's cottages to be erected by the Burton-on-Trent Artisans' Dwellings Co., Ltd., on a site in the rear of Wyggoston Street, was performed last Wednesday by Captain Ratcliff. The chief door of each house will open from the front of the street, and entrance will be at once obtained to the living room, which will be 12ft. square, and will have a boarded floor. The kitchen—11ft. by 9ft. 3in.—will be approached from the living room, and will be properly appointed. From the kitchen entrance will be obtained to a good pantry, and the staircase entrance will also be from the same room. The chief bedroom will be 15ft. 6in. by 12ft., and the second will vary in size somewhat, but all will be of good proportions. There will be a linen closet for each of the small bedrooms. The out-offices will be in every way suitable, including the provision of w.c.s. The yards will be paved with blue bricks, there will be an entry to every two cottages, and each two will be walled in. The fronts of the cottages will be finished with the best pressed red facing bricks, and the roofs will be covered with best red tiles. Each cottage will be built on a concrete foundation. The architect was Mr. Thomas Jenkins, of 35, High Street, Burton-on-Trent.

**Dundee.**—A new U. P. church is to be erected, which will accommodate 700 persons. There will also be two halls seated for about 350 persons, session and managers' room, ladies' and gentlemen's cloak rooms, lavatories, etc. The style adopted for the new building is a free treatment of Gothic of the Perpendicular period, the square tower being relieved by slightly projecting buttresses and finished with battlemented cope and square turrets. A very large traceried window is introduced in the front in order to get full advantage of the light. There are two entrances, both of which lead directly into the area of the church, while the entrance through the tower also leads to the gallery and halls below. The stone dressings of the front elevation will be of red stone, while the infilling will be of a local stone of suitable colour to give the necessary light and shade. The side and back elevations, although plain, have an outline of an ecclesiastical character without going into ornamental detail. The plan is arranged in one large nave, side aisle, and transept, with an end gallery. In one of the bays of the transept are placed the organ chamber and choir gallery. The pulpit and platform are placed on the south wall, partly in an apse or pulpit recess, and are lighted by windows at each side. Large traceried windows placed in the nave and transept run up into the roof above the wall head to secure better light, and this arrangement is an architectural feature of the building. A subsidiary staircase is situated in the west transept leading to the vestry and choir gallery, also making a connection with the halls below and special exit to the Cowgate. The plans are being prepared by Mr. T. Martin Cappon, F.R.I.B.A.

The High School of Dundee has had a new laboratory erected upon a part of the back playground. The room measures 44ft. by 36ft., and is well lighted from the roof, and by four windows which look out on the playground. It is substantially fitted with benches and tables, accommodating 40 students working at one time. Mr. R. Gauldie, of Panmure Street, was the architect, and the contractors were:—Mason work, Mr. John Duncan; slater work, Messrs. J. Laburn and Son; plaster work, Mr. Alex. M'Ritchie; joiner work, Mr. Wm. Philip; plumber work, Messrs. Farquharson and Son; painter work, Mr. Wm. Norwell; heating apparatus, Messrs. G. H. Nicoll and Co.; and electric lighting, Messrs. Muckersie and Vandore.

The offers of the following tradesmen for the different departments of work connected with the villa to be erected, from designs of Mr. J. Sim, C.E., Montrose, at Sunnyside Asylum, which the managers some time ago resolved to build with the view of relieving the pressure on the main building of the Royal Lunatic Asylum, have been accepted:—Mason, Mr. Archibald M. White; builder, Mr. Lundin Links, Largo; joiners, Messrs. Pettis and Stephen, Montrose; plasterers, Messrs. Sellar and Co., Aberdeen; plumbers, Messrs.



C. Wood and Co., Montrose; slaters, Messrs. Brand and Son, Arbroath; tilers, Messrs. Burness and Son, Montrose; asphalters, Mr. W. Briggs, Dundee.

A very successful bazaar was held in March last with the view of raising funds for a manse in connection with Knox's U. P. Church. A site had been secured on the west side of Bridge Street during the ministry of the late Rev. Alexander Campbell; plans prepared by Mr. Sim, C.E., were approved of; and the offers of the following tradesmen have been accepted:—Mason, F. Brown; joiner, J. Davidson; plumber, C. Wood and Co.; slater, J. Keillor and Son; plasterer, Burness and Son—all of Montrose.

**Hull.**—In consequence of the widening of Prospect Street, which will make it one of the finest streets in the city, the proprietor of the Prospect Inn commissioned Mr. John M. Dossor, A.R.I.B.A., of 2, Manor Street, Hull, to prepare designs for the reconstruction of the inn. The above illustration is Mr. Dossor's design. It is proposed to build the lower storey in buff terra-cotta, the upper storeys in stucco, and the roofs tiled.



**Norwich.**—The foundation of St. Peter Mancroft Mission Memorial Hall was laid last Thursday by the Mayor of Norwich. The style of the building is in harmony with that of the vicarage, domestic, having crow step gables and Gothic-headed windows with mullions of Cossey brick. The front will be relieved with panels, one having a text in raised letters and one in the apex with the cross keys of St. Peter. Accommodation will be provided for about 230 persons, not including the platform, with two class-rooms, each accommodating twenty persons. Heating will be provided by small-bore apparatus and

**Reigate.**—The schools here illustrated are the new church schools at Sidlow Bridge, near Reigate, Surrey, which have been erected by Mr. A. H. Ryan Tenison, A.R.I.B.A., and Mr. Edward Thornton, A.R.I.B.A., of 7, Great College Street, Westminster, for the Rector, to take the place of the existing schools condemned by the Education Department. The ground was very generously granted by Mr. Ralph Clutton, who took much interest in the building, and it is greatly due to his wishes that so picturesque a building has been erected. The schools contain accommodation for eighty-eight scholars and teachers, and have a main

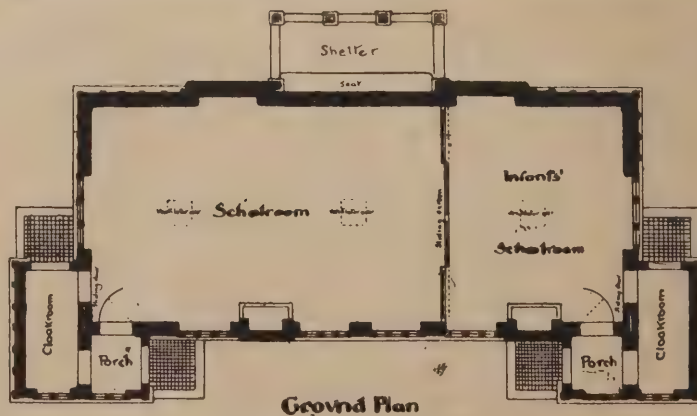
made moulded bricks as cappings, &c. The smith's work throughout was specially designed for the works, which were carried out by the late Mr. Daniel Debenham, of Betchworth. It is proposed to erect the school keeper's residence at a future date within the area of the ground conveyed by Mr. Ralph Clutton.

**The Victoria Tower at Huddersfield**, which has been erected to commemorate the Diamond Jubilee, was opened recently by the Lord-Lieutenant of the West Riding, the Earl



radiators, and the electric light will be installed. The sanitation is provided by Boyle's apparatus. The building is being erected in accordance with the plans by Mr. C. S. Beck. The cost is estimated at £1,237.

**Oxford.**—The designs by Mr. T. Augustus Souttar, of London, for the erection of a new pathological building in connection with the University Museum have been approved by the University authorities. The buildings have been planned on the central hall system, and will consist of three storeys. The basement, which will be half sunk, will provide accommodation for a workshop, attendants, heating and refrigerating room, and stores. On the ground floor will be a museum with a gallery, a lecture theatre, and bacteriological, chemical, and balance rooms, as well as private rooms for the lecturer, with lavatory accommodation, &c. The first floor will be composed of bacteriological, practical, preparation, photographic, and assistants' rooms, and, in addition, there will be storage accommodation in the roof. The central hall will be continued through the upper floor, with a gallery round it. The cost of the building is estimated at £10,000.



SIDLOW BRIDGE SCHOOLS, NEAR REIGATE. ARTHUR H. RYAN TENISON, A.R.I.B.A., AND EDWARD THORNTON, A.R.I.B.A., ARCHITECTS.

schoolroom and an infants' room with separate entrances and cloak-rooms with offices at the rear. The building is in the half-timber style with rough caste filling in, red tiled roofing, and an oak shingled bell cote. The brickwork is executed in local red facings, with purpose

of Scarborough. It has cost over £3,000, and is built of Crossland Hill stone. It is 20ft. square, and 100ft. high. Mr. Isaac Jones, of Deerbrook Road, Herne Hill, London, S.E., is the architect, and Messrs. Ben Graham and Sons, of Huddersfield, were the builders.



## Bricks and Mortar.

July 5th, 1899.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### Rodin the Great.

WE learn that M. Rodin, the gifted French sculptor, will not show his works with his fellow sculptors at the Paris Exhibition of 1900. He has been conceded at his request a place at the junction of the Avenue Montaine, and the Cours-la-Reine, just by the Place de l'Alma. A special pavilion will be built on purpose. Visitors to the Exhibition will elsewhere be able to study the works of other sculptors of the Modern French School massed together, but in order to see the work of M. Rodin, they will have to go some distance. Perhaps M. Rodin thinks that the sight of his work would cause injury to his fellows.

IN contrast to the action of Paul Dubois, M. Rodin, a ceremony took place last Monday week which shows the much more usual good feeling prevalent among French artists. This ceremony was the presentation of a gold medal to M. Paul Dubois by MM. Chaplain, Falguière, Frémiet, his colleagues of the Institute, and MM. Bartholdi, Boisseau, and Boucher, to show their appreciation of his statue of Jeanne d'Arc, shown in the Salon of 1895. The medal was presented by M. Frémiet, the author of that other masterpiece, the Jeanne d'Arc in the Place des Pyramides, Paris. The medal was the work of M. Chaplain, and showed M. Dubois' portrait on the one side, and on the other Jeanne d'Arc with the date 1895.

### Central School of Arts and Crafts.

AN exhibition of considerable interest will be opened to the public at the Central School of Arts and Crafts, 316, Regent Street, opposite the Polytechnic, on Monday, July 10th, and remain open throughout the week from 12 (noon) to 5.30 p.m. daily. The work done by students includes: Book-binding, silversmiths', goldsmiths', and jewellers' work, chasing and engraving, enamelling, stained glass, ornamental lead work, stone work (by architects), woodcuts in colour (by a method based on Japanese practice), embroidery, wood carving and gilding, &c., also modelling and designs for various processes. Admission will be free. The school was established in November, 1896, by the Technical Education Board of the London County Council to meet a definite want—viz., to provide for apprentices, journeymen, and others engaged in the more artistic trades, such training, subsidiary to the workshop, as each student may require in relation to his special craft. Admission to the school is, within certain limits, restricted to those actually engaged in these trades, and no attempt is made to provide for the amateur student of drawing and painting. The school is exceedingly well equipped with all appliances for carrying on practically the crafts embraced, and with fine examples of old work to serve as a stimulus. The staff is composed

of specialists of distinction in their particular subjects, working under the general direction of Mr. G. Frampton, A.R.A., and Mr. W. R. Lethaby.

### What the School has done.

DURING the third session just completed, the school has been very successful, not only in attracting students (nearly 600 having been in attendance), but also in the quality of the work done, in which there is a distinct advance upon last year. At the general competition in March last for art scholarships and exhibitions offered by the Technical Education Board, open to all art

and great moat apartment is to the left of this hall, with a very fine window in the gable next to the north porch on the same elevation as this bay window. The whole of the late work is very fine, the jambs richly moulded, and the windows nearly all with tracery, all of one date. The manor suffered in the wars of 1643, when it was taken by storm (probably by the Royalists).

### The Whole Art World Is Aghast.

MR. EDWARD S. PRIOR ably expresses the prevalent feeling on the decoration of St. Paul's Cathedral in a very interesting article in the July number of the "Architectural Review."



BAY WINDOW AT WINGFIELD MANOR. DRAWN BY E. BECKITT LAMB.

schools and classes in the London area, no less than forty-seven awards out of a total of 150 were made to students of the Central School, to the work of which special commendation was given in the report of the examiners, Sir W. B. Richmond, R.A., and Mr. Selwyn Image. The students appreciate and profit by the facilities given them for gaining an all-round view of their crafts, such as is no longer possible in the rigidly subdivided workshop. Within the limits of the present temporary premises, no great development is to be looked for; but a small class for ornamental writing (suitable for illuminated addresses) is contemplated for next session, which commences on September 18th. Full information as to this or any other classes can be had on application to the curator at the school.

### Wingfield Manor Bay Window.

THE view here given shows a bay window on the north side of the quadrangle. It would seem to have lighted the hall together with a row of rich traceried windows, probably of similar pattern; but none of these now remain, except their ruins. The chapel

tural Review." He says that "the whole art world is aghast at what the nineteenth century artist is doing at St. Paul's. He has been made free of it, and his brethren shake their heads and hold up their hands. To try and stop him representations and protests are poured in upon the Dean and Chapter; noble lords are conjured to call on Government to interfere; deputations from academies and institutes claim to be heard; and where Academicians have hesitated, Slade students, *en masse*, have rushed in with vigorous condemnation. It would seem as if never artist's work had met from artists such unanimous disapproval; even Mr. William Richmond's friends keep silence from praising." Mr. Prior says that "to chip and be-marble Wren's stonework; to embroider when he left plain; to emphasise what his art made subordinate; and think to doctor the contour of Wren's mouldings—to do all that Sir William has done, and would do—is to be no Decorator with a painter's sense (however it be boasted to distinguish itself from Puritanism), but is, as a would-be Architect, to quarrel with Wren."



### Wren thrice Be-littled.

THE author of this article on the burning question of the decoration of St. Paul's, asks the question, "How comes it that our London Cathedral should be handed over to such hostile—or, at any rate, unsympathetic—hands? Three times this century have there been tamperings with the dispositions of Wren's choir: first, the organ was taken from its place, and split in two; secondly, a reredos erection was attempted; and thirdly, have now walls and ceilings been painted and faced with mosaic. And each of these changes has be-littled Wren's architecture, and left us a less precious possession in it. Still, in the dome and the nave there is much of the great Wren to save, if the Dean and Chapter will save it." Mr. Prior remarks that the Dean and Chapter have asserted in authoritative tone their "knowledge and love" of their cathedral. "But similarly professed were they who broke down the great chapter-house of Durham, and would have removed its Galilee; who gave Wyatt the mandate to destroy so much of Salisbury; and they who passed Wells over to Salvin, Worcester to Perkins, Chester to Scott, and lately St. Albans to Lord Grimthorpe, and Westminster transept to Pearson. Surely at the hands of "knowledge and love" has at Cambridge been be-smirched the most beautiful relic of its ancient history, the old King's Gate; and at Oxford have been cut down from their pedestals the statues of St. Mary's." The remains of our ancient arts, he says, have now become few enough, and the scantiness of the fragments brings all on to an equality of preciousness; all should be scheduled out of reach of their temporary possessors, "So that no more may 'knowledge and love' expose a St. Paul's to the mistaken hardihoods of a Sir William Richmond—nor any other Sir William Richmond be tempted to that painter's disloyalty in art which would think to repaint an ancient master."

### Fire Tests.

THE arrangements of the British Fire Prevention Committee for July include the following series of fire tests:—The fire resistance of casements glazed with patent wire-glass, by Messrs. Pilkington and Co., of St. Helens. The fire resistance of skylights glazed with patent wire-glass by the same firm. The non-flammability of a matchboarded partition, constructed by the British Non-Flammable Wood Company. The fire resistance of a matchboarded partition, with silicate cotton filling, constructed jointly by Messrs. Anderson and

Messrs. Broadbent. The fire resistance of a ceiling, constructed jointly by the same firms. The automatic recording of an outbreak of fire on the Pearson Automatic Fire Alarm System. The fire resistance of a 2in. solid partition, constructed by the Mural Decorations Company. The comparative fire resistance of ordinary glazed sashes glazed with 32oz. glass, plate glass, and lead lights respectively. The comparative fire resistance between a 2in. solid oak door and a 2in. solid oak door. These tests will be carried out according to the usual procedure of the committee at their testing station near Regent's Park, and the official reports are issued about four weeks after the respective tests take place.

### A Station under a Church.

ONE hundred feet below the level of the road near the Mansion House, and just under the quaint church of St. Mary Woolnoth, which is at the corner of Lombard Street and King William Street, a big engineering feat has been carried out. In 1893 the City and South London Railway Company obtained an Act of Parliament to construct an extension of the line at present running from the Monument to Stockwell, so as to carry the line to the Angel, at Islington. The idea was to cross the river by another tunnel near London Bridge, to proceed under King William Street, past the Bank of England, up Princes Street, then under Moorgate Street, Finsbury Pavement, and the City-road, terminating at a point near the Agricultural Hall; a future development being a continuation of the line under the High Street, Islington, so as to join up the system with that of the North London Railway at Highbury Station. For the Lombard Street Station the Act gave power to acquire the church of St. Mary Woolnoth, to demolish it, and to construct the necessary building upon the site. The works were not commenced within the stipulated period, and when the company applied for an extension of time in 1896, Parliament changed its mind, and would only give them the right to use the subsoil and to construct their station under the church.

### How It Was Built.

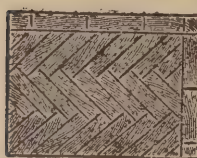
How to erect the station under the church was a difficulty which tested the powers of Sir Benjamin Baker and Mr. David Hay, the engineers to the railway, but they proved themselves fully capable of overcoming the difficulty, and, although the church has been completely disconnected from its foundation, and rests solely on massive iron girders, not a

brick has shifted, nor have the Corinthian columns suffered from the underpinning. The four iron girders used for supporting the four groups of columns which carry the roof were fixed in position, and small needle girders were then threaded through the bases of the columns. It was found on piercing the bases for this purpose that the inside of the columns was not solid stone, but inferior brickwork with a stone casing of from 6in. to 9in. thick. To overcome this difficulty a continuous sheeting of steel joisting was placed under the whole area of the bases, and loose masses of brickwork had to be tied together, and the weight equally distributed upon the needle girders. To support the south wall it was pierced at intervals of about 5ft., and strong needle girders were run through, one end resting on solid stone on the outside, and the other fastened to the main girder supporting one of the columns. After this sufficient of the inside wall was cut away to enable a girder being run into position, and another wall built to carry short lengths of bearing girders wedged tight up to the needles.

**A New Free Church at Kippax**, which has been erected at a cost of £1,460, was opened last Wednesday by Mrs. C. I. Hartley, of Castleford.

**A Gymnasium for Girls** was opened recently by Mr. John Piggott, Chairman of the South-Eastern District Park's Committee of the London County Council, in the Southwark Park. A carriage road across the park for night traffic was dedicated by the same gentleman. The gymnasium is tar-paved throughout, with the exception of wood paving under each apparatus. The work has been carried out under the supervision of Lieut.-Col. Sexby, the chief officer of the Park's Department of the Council.

**A Raphael picture has been discovered** at the Exhibition of Sacred Art at Como. In one of the galleries of the exhibition there is a picture, belonging to Dr. Biondi, of Pavia, representing "The Massacre of the Innocents." A number of artists, attracted by the beauty of the painting formed a committee to examine it attentively. The surface of the canvas was carefully scratched in the spot where the signature was expected to be, and below the varnish was found the signature Raph. VRBI, and the year MDX. The picture would therefore belong to the beginning of the last decade of Raphael's life.



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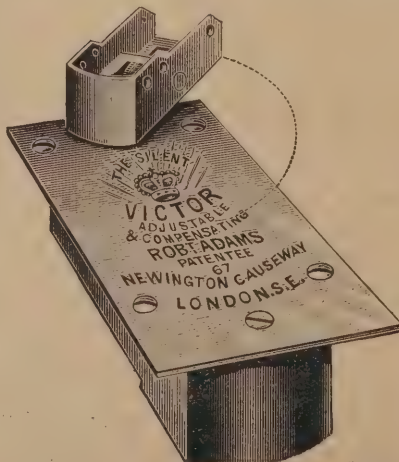
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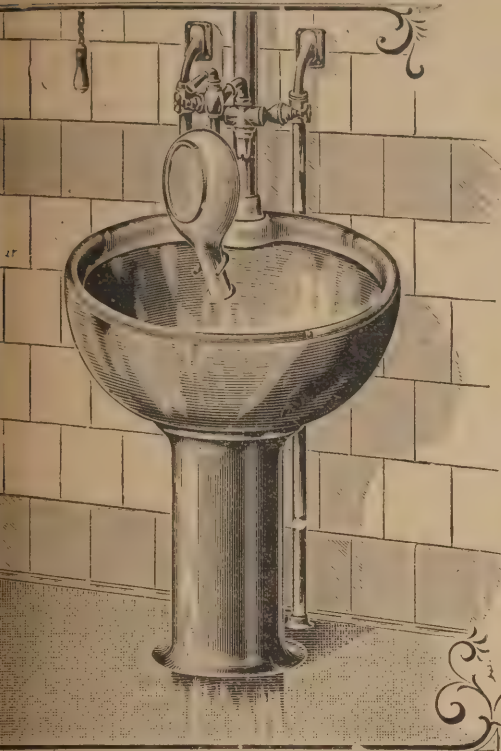
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## MUNICIPAL ENGINEERS' CONFERENCE.

### FAULTS OF THE L.G.B.

THE annual conference of the Incorporated Association of Municipal and County Engineers was opened at the Engineers' Institute, Cardiff, last Thursday. Mr. W. Harper, C.E. (president), occupied the chair, and a large number of the engineers and surveyors of most of the counties and municipalities in Great Britain and Ireland were present. Before the business meeting was held the Mayor (Alderman Sir Thomas Morel) and members of the Cardiff Corporation received the members of the Association at the Town Hall. The President, in his inaugural address, said he would like to say a few words in reference to the Government Department, which to a large extent controlled the work of municipal authorities.

### Its Actions are Strange.

He referred to the Local Government Board, whose ways were difficult to understand, and whose methods were sometimes impossible to follow. It would be supposed that the work of such a department should be to advance matters of local government, to lead rather than to follow, but in many instances they deterred rather than assisted sanitary progress, and they followed rather than led in sanitary science and matters of public health. It was mainly to our large cities and towns that we had to look for improvements in the laws upon public health matters. These large cities and towns from time to time found it necessary to apply to Parliament for special powers to improve the governments of their districts, but when such applications were made, it was the almost invariable practice of the Local Government Board to oppose any amendment to the existing laws. Was this the right attitude for a governing authority to take up?

### No Originality.

It seemed to him that the Local Government Board, by following these methods, belittled themselves, and it was to be hoped that ere long they would see the necessity of altering their method of procedure towards local authorities. As an illustration, in confirmation of his remarks, he would refer to the Public Health Amendment Act of this Session. What was that measure, and how had it been framed? It was simply a compilation of clauses which had been passed by Parliament in Private Bills, promoted by one or other of our large cities and towns, and, so far as the drafting of the Local Government Board was concerned, it scarcely contained a paragraph of originality. Yet it might be taken as almost certain that, when the different authorities applied to Parliament for the powers which were granted them by way of amendment to the Public Health Act, the Local Government Board used their best endeavours, in nearly every case, to cause the rejection of the powers asked for. Again, some of them would understand, or, rather, fail to understand, why it was that the Local Government Board would not sanction the

### Borrowing of Money

for works which showed any departure from orthodox method, particularly in the question of sewage disposal, until some town or some person had expended large sums of money in the execution of works, and until it had been proved conclusively that the proposed method was unquestionably a successful one. This practice had to a large extent placed important matters affecting sewage disposal in the hands of speculators. On the other hand, they were too frequently ready to sanction loans for the most trumpery and inefficient schemes, provided no one had any objection to raise thereto; whilst no matter how good a scheme might be laid before the Local Government Board for their approval, if it met with any large measure of opposition, particularly from a great landed proprietor, it might be taken for granted that any such proposal

would be met by a refusal from headquarters to the sanction of a loan being raised for the proposed works.

### Is there Such an Authority?

One sometimes wondered whether there were such an authority as the Local Government Board, and if so, whether they ever sat in council as a Board and debated upon the important questions affecting local government and public health. It almost seemed that it was a Board of one man, and that that individual was responsible to a much larger extent than could almost be conceived for the health of the people and the proper advancement of local government, but that he too frequently, was a stumbling block to public progress. He might be considered bold in making allusion to these matters. It might be considered indiscreet for a public official to criticise a superior authority, but it was sometimes only by boldness amounting to indiscretion on the part of someone that reforms could be secured. He believed that everyone present would agree with him in saying that reform in the Local Government Board was urgently needed. The Board ought to be

### An Elected Body

composed of men who had been trained by long service in the great municipalities of the country. Such a board would always be in entire sympathy with the progressive aims and aspirations of municipal and county public life, and would aid and encourage, instead of, as was too often the case under the present regime, prevent the due and proper advancement in directions where greatly needed. The president then proceeded to speak in favour of the municipalisation of gas and water works, electric lighting, street tramways, markets, &c., and the construction of public works by labour directly employed by the municipalities. The system of contracting was open to

### The Vilest Abuses.

The system of obtaining tenders for the execution of public works was very little better than a modified form of gambling. It induced a contractor to calculate the lowest penny at which he could undertake certain work, relying, as he often did, upon the possibility of extra work outside the contract, and of errors or omissions in the specifications or bills of quantities to place him in a position to stipulate such terms and prices as would enable him to realise a profit on the whole contract. After the presidential address Mr. C. H. Priestley, waterworks engineer, read a paper on the Cardiff water supply; Mr. R. Read, Gloucester, on the ventilation of sewers and drains; Mr. Morgan, Ponterdawe, on sewer ventilation; Mr. W. H. Savage, East Ham, on house drainage; Mr. J. B. Wilson, Cockermouth, on a method of augmenting the delivery of gravitation mains, and Mr. Foster, Cardiff, on public baths.

**Improvements to Thaxted Church Tower.**—A new door has been placed at the west entrance, and the tower has been thrown open to the church. About £110 have been spent on the rehanging, quarter tuning, and putting into first class ringing order of the bells.

**New Wesleyan Chapel.**—The foundation stones of a New Wesleyan Methodist Church and School premises were laid last Wednesday at Annfield Plain. The chapel and schools will cost a little over £2,000, and will be built of stone. Mr. George T. Wilson, of Blackhill, is the architect, and Mr. T. A. Turnbull, of Annfield Plain, is the contractor.

**A Handsome Block of Buildings** will shortly be erected in St. Augustine's Parade, Bristol, for the Star Life Assurance Co., from designs by Mr. Arthur Blomfield Jackson, of 26, Mecklenburgh Square, London, W.C. The tender submitted by Mr. A. J. Beaven, of Bristol, for the erection of the work, has been accepted. The entire property has a frontage to St. Augustine's Parade of about 76ft., and it extends back to St. Augustine's Hall. The cost of the site and buildings is estimated at about £50,000.

## Correspondence.

### OUR ST. PAUL'S CATHEDRAL PLATE.

To the Editor of THE BUILDERS' JOURNAL.  
150, HARLEY STREET, W.

SIR,—I think your publication of Wren design for the decoration of St. Paul's, though only in black and white, was a happy idea for now.—Your obedient servant,

G. AITCHISON

June 29th, 1899.

[The plate referred to by Professor Aitchison appeared in our issue dated May 31st. Copies of this number may still be obtained from the publisher, post free for 1½d.—Ed. B. J.]

### REGISTRATION OF ARCHITECTS

To the Editor of THE BUILDERS' JOURNAL.

ST. JAMES' HALL, PICCADILLY, W.

DEAR SIR,—Your Clapham correspondent (page 296, No. ccxxviii.), in criticising certain details of the Bill, forgets that matters of this kind are dealt with in committee and that probably several amendments will be made in due course; though the Bill undoubtedly is open to amendment and improvement on several points, the main principle is good, and this society, while supporting the Bill as a whole, is by no means pledged to every item in it, and the measure contemplates no injustice to any of the arts, crafts or professional bodies allied in any way to architecture.—Yours faithfully,

C. McARTHUR BUTLER,

(Secretary, the Society of Architects.)

### ROWLAND HILL'S CHAPEL AT HAMMERSMITH.

To the Editor of THE BUILDERS' JOURNAL.

21, ASHCURCH GROVE, W.

SIR,—One deplores the frequent announcements under the heading "Vanishing London" in yours and other professional journals, and in the daily press. "Vanishing Suburbs" might equally form a heading, and Hammersmith, still rural and suburban here and there with its charming Ravenscourt Park in its midst, now and then has to contribute cases where old-world residences with their associations have to give way and disappear before the march of modern improvements.

Another old-world relic is doomed to follow the fate of its predecessors, viz., Rowland Hill's Chapel, in King Street West, Hammersmith, in which that eminent divine once conducted religious services. It bears date 1783 as shown by a stone tablet built into its north wall. The little building is square on plan and covered with a green slated roof hipped from each angle. Some fragments remain of what was originally a small and primitive gallery which surrounded the interior. For the last quarter of a century or more the structure has been occupied and used by local house and estate agent as an auction mart. It is averred that in a quaint alley, adjacent to the above stands the house Hampshire Cottage, in which the reverend gentleman resided, and it is interesting to note that in the old brick wall dividing the garden of this from that of the adjoining premises there is to be seen the spot at which a doorway existed through which by a kind and neighbourly arrangement at that time the reverend gentleman was accorded access to roam and meditate in the more spacious grounds of his neighbour at Hampshire House. Probably few of those who now worship at the handsome edifice known as Christ Church, Westminster Bridge Road, are aware that so interesting a relic of by-gone days in connection with its founder yet exists in a quaint nook just off what has become one of the busiest of thoroughfares but which is shortly—so far as the aforesaid little chapel is concerned—to disappear.

There may be some who might like to see the structure prior to its demolition; will you therefore favour me with an insertion of the foregoing in your current number, should you deem it of sufficient interest.—Yours truly,

WILLIAM HOLDITCH STEVENS.



## Views and Reviews.

### "DOBSON AND TARN."

A new edition of the book upon quantities, which has been better known for many years by the name of "Dobson and Tarn" than by its true title, has recently appeared—unfortunately with but little serious alteration. Full as the book is of good material—long as it held its own as the most practical work upon its subject—it has yet fallen behind the times, and now needs material revision if it is to be as useful to the student of the present and the future as it undoubtedly has been to him of the last generation. In London, particularly, the system of "taking off" in trade sequence has long been abandoned in favour of the coupon system, and though for very small works there is something to be said in favour of working by trades, those who have tried both methods are not likely to return to it. And that is established to-day for London may be reasonably expected to be admitted for the whole country to-morrow. Consequently it would be a mistake to place in a student's hand a manual from which he would learn what might have been useful to him twenty years ago instead of that which is likely to be of value to him a few years hence. Considered in detail, and putting this great essential point aside, the book is much better, though labours are not now taken out in such great detail as advocated, sketches are more freely introduced—and even the most ignorant of modern builders would be ashamed of the "designs" illustrated at the end.

"The Student's Guide to the Practice of Measuring and Valuing Artificers' Works," By Edward Dolson and E. Wyndham Tarn, M.A. (Seventh edition, revised.) London: Crosby, Lockwood, and Son.

### SOME MINOR ART GALLERIES.

**GUTEKUNST'S, KING STREET.**—So long as he lives it, there is no one so careless about the condition and consequent value of what he assesses as the professional painter, and therefore it follows that the connoisseur's love and knowledge of art is of a different kind altogether. "The print collector," says Mr. Edmore, "carries a museum in a portfolio. As he at his disposal only a few bank notes, sovereigns even, he may yet surround himself with excellent possessions, of which will not speedily exhaust the charm." Let him then visit this little gallery as often as he should be invited. A dealer in prints can ill afford to have inferior things about him, and therefore it happens that whether they be Dürers, Rembrandts, or Whistlers, they are never the meanest examples. As to the state of the plate, on which so much depends, the visitor has only to ask, and whether buying or not, he can hardly fail to learn something. It is meet that none but the best should be of this goodly company, so we are with the Whistlers are selected examples of Méryon, Legros, Cameron, Strang, and Zorn. The etchers' art is hedged about with conventions as stiffly as any other perhaps, but within bounds there is freedom, and each of the men above named has set his own mark on his work. The public is slow to discover the poetry which enters, however quietly, into every true architect's work; but here, as one looks at these Méryons, Camerons, Whistlers, one feels that by some, at any rate, it has been understood.

**AT GOUPI'S.**—M. Theodore Roussel, having resided some twenty years in this country, must at this time be almost an Englishman. His best scenes are English, at least, but his art, I would say, is almost entirely his own, and a very lovely possession at that. There is something here of a "Wood in Autumn" that affects the mind like the slowest and stealthiest scribe. But for the gleam of light which falls in it you would not detect the path. I have seen a picture called "Hush" which had almost, if not quite, the same emotional value. Such pictures are rare as the peace which we enjoy. Of the rest one can only say generally that the charm of the best landscapes here is at once individual and indescrib-

able. One knows that where sea and sky meet in a picture the feeling most generally is that the elements, air and water, have two different stories to tell, but here they seem part of one poem. The friend who is with me speaks of the transparency of the brush work which makes it appear that the brush, like a bluish veil, has been lightly drawn over the whole. At Goupil's publishing house, Bedford Street, we are also invited to see some coloured etchings by the same hand. M. Roussel frames his own pictures, and as the tendency is nowadays to regard a few crafts as but part of a good day's work he would appear to be well abreast of the times. Of these things we know nothing at present however, and can only speak positively of what we have seen.

**THE HOLLAND FINE ART GALLERY.**—The Dutchmen must always be with us it seems, and one becomes accustomed to seeing as often as the season recurs a selection more or less satisfactory of the latest paintings from Holland. So far as they are concerned with landscape it would seem to be difficult to draw any hard and fast lines between them and the English and French. What the men of the Barbizon School taught in their day has been so completely absorbed and assimilated that one hardly knows who is who (to use the vulgarst catch word), and we for our part, thanks to our greatest masters, Turner, Constable, and the men of the Norfolk school, have given at least as much as we have taken. So landscape is landscape, no matter who paints it, or from what country he hails. Come we next to the art of the homestead, in which the human interest is greatest. There was no one in England or Holland like Millet when he announced, not by speaking, but painting, that there may be the elements of an Epic in the tale of the simplest lives, and that the episodes of just such a tale are the things which should be depicted. There is something essentially classical in this austere conception of art, and the possession of that something has led to the simplest works of this painter being ranked with the greatest we have. In England we always want teachers it seems, and the effect of his influence here is seen in the number of works wherein the merely uncouth is idealised, and the sentiment is of the sickliest. In Holland they had not a Millet, and yet had not our need of a master, for the Dutch have had a true art of their own since when their Independence was won, and we see in Israels, with a difference, what centuries ago was seen in the homeliest, sunniest works of their masters. That a far deeper feeling inspires most of the modern work only makes it dearer to us.

**IN THE DOWDESWELLS' GALLERY.**—The attraction here at the moment is the bevy of "Beautiful Women" portrayed by Mr. Mortimer Menpes, the majority of whom are not beautiful, and appear to have been drawn or painted, if not simply to keep the pot boiling, then at least to keep his hand in. With the hand we are chiefly concerned at the moment, for defter, daintier, pencil work could hardly be seen or imagined than we find in the best of this; the one faint line of beauty enclosing the form so surely. So, too, of these slight chalk drawings. There are etchings on ivory also, and oil paintings, much less successful, though probably equally true as portraits. Mr. Menpes appears to move largely in theatrical circles, for the portraits of Mrs. B. P. are many; and almost, if not quite, the best of the pencil drawings are those of Sir Henry Irving, the one favoured man in the place.

CIRCUIT.

**The "Tariff-Frame" Hotel Guide.**—The traveller in the United Kingdom, Paris, or the United States, who wishes to know the best hotel in whatever locality he may be should consult this useful little guide. It can be obtained at any of the hotels mentioned in its pages, or by application to the Hotel and General Advertising Company, Limited, of 239-241, Shaftesbury-avenue, London.

## Keystones.

**New Shambles at Arbroath** are to be erected at a cost of between £2,000 and £3,000.

**A New Road** was recently opened at Strone of Cally, Blairgowrie, by Miss Constable of Balmyle.

**The Virchow Museum of Pathological Anatomy** was opened by Professor Rudolf Virchow last Tuesday week.

**Mr. Horace Cheston, F.R.I.B.A.,** of 5, Union Court, London, E.C., has been elected the Surveyor to the Royal Hospitals of Bridewell and Bethlem.

**A new Presbyterian Church** is to be erected at Dailly, Ayr, at an estimated cost of £2,100. The church will seat 352 persons and an adjoining room will seat 100 persons.

**The Byron Statue.**—Sitting in committee recently the Aberdeen School Board decided, by eight votes to seven, to decline to grant a site in the Grammar School grounds for the proposed statue of Byron.

**Miss Grant, the Sculptor,** has just finished a fine bust of Mr. Gladstone, which was very much admired by many of the friends and relatives of the departed statesman who saw it at her studio last Wednesday.

**The Tender of the Improved Wood Paving Company, Ltd.,** of 46, Queen Victoria Street, London, E.C., has been accepted by the St. Olaves' Board of Works for the supply of 61,000 Jarrah wood paving blocks.

**A New Hotel** has been erected at Leeds, on the building and furnishing of which about £90,000 has been expended. The façade is of terra-cotta, in a free Renaissance style. Messrs. Chorley, Conon, and Chorley were the architects.

**Proposed new Technical School for Padiham.**—At the Padiham District Council's offices last week a Local Government Board enquiry was conducted by Mr. E. A. Sandford Fawcett into an application for permission to borrow £4,000, for the purpose of a new technical school. There was no opposition.

**A New Infirmary.**—The Camberwell guardians have approved of the plans prepared by Mr. E. T. Hall, of 57, Moorgate Street, London, E.C., for the erection of an infirmary, guardians' offices, and relief station, at an estimated cost of £208,000.

**A Congregational Church** is to be built at Horsley at a cost of about £1,000, from the designs by Mr. F. E. Dotchin, of Newcastle. The foundation stone was laid last Wednesday. The new church, which is in the transitional style, will seat about 230. Mr. Humphrey Atkinson, of Newcastle, is the contractor.

**A Monument to Emmanuel Chabrier,** the author of "Gwendoline," "Briséis," and "España," is about to be erected in France, and a subscription list has been opened, to which the Minister of Fine Arts has given 1,000 francs. The list at present stands at 4,127 francs.

**Aspinall's New Premises.**—The extensive premises at New Cross of Aspinall's, Limited, which were recently destroyed by fire, are being rebuilt. The architect is Mr. Max Clarke, of Queen's Square, London, W.C.; and the contractors are Messrs. L. Whitehead and Co., Limited, of Portland Works, Clapham Road, London, S.W.

**New Library for Leamington.**—At a special meeting of the Leamington Town Council last week, the plans of Mr. J. Mitchell Bottomley, of Middlesborough, for a new Free Library, Technical Institute, and School of Art, were adopted. The plans were competitive. Mr. J. E. Newberry, of Westminster, was awarded the second premium of £50.

**The Contracts for Paisley Abbey Restoration** have been fixed as follows:—Joiner, slater, and plaster work, Messrs. Boyd and Forrest, Kilmarnock; plumber work, Messrs. James Kilpatrick and Son, Paisley; glazier work, Glass Stainers' Company; iron and steel work, J. McMillan and Co. The estimates amount to about £13,000.



[FIRST ANNOUNCEMENT TO READERS OF "THE BUILDERS' JOURNAL"]

## NEW ENTERPRISE UNDERTAKEN

BY *The Times*

# THE CENTURY DICTIONARY:

## A FACT-BOOK AND WORD-BOOK COMBINED.

A NEW WORK ON A NEW PLAN—GIVING, FOR THE FIRST TIME, EVERY FORM OF SPELLING, PRONUNCIATION, AND USAGE KNOWN, WHETHER ENGLISH, AMERICAN, AUSTRALIAN, PROVINCIAL, OR COLLOQUIAL.

Eight sumptuous volumes; 7000 large quarto pages; 500,000 definitions; 7500 illustrations; 300,000 quotations; a work of which the editorial cost, alone, was more than £200,000.

THE proprietors of THE TIMES have, within recent years, greatly extended the scope of that newspaper's operations. The impression of THE TIMES which appears at four o'clock in the morning, is now followed not only by a second edition, published at half-past one in the afternoon, chiefly for circulation in the City; by THE MAIL, published three times a week, and by THE TIMES WEEKLY EDITION; but also by LITERATURE, a critical review which appears every Saturday.

The publication of occasional biographies, annual summaries, and other monographs, reprinted from the columns of THE TIMES, has been followed by the publication of a series of periodical law reports and digests of cases, as well as by the half-yearly "Issues," an account of newly-organised public companies.

Four years ago, THE TIMES ATLAS was published, to which THE TIMES GAZETTEER has recently been added. And in March, 1898, THE TIMES Reprint of the Encyclopædia Britannica (9th edition) was offered to the public. In the course of only one year, more than 18,000 copies—450,000 volumes—of this standard work have been sold by THE TIMES.

### A NEW WORK OF REFERENCE.

The undertakings of THE TIMES are now further extended by the issue of THE CENTURY DICTIONARY, a word-book and fact-book combined, at once the most complete lexicon of the English language and the most convenient encyclopædic work of reference for the purpose of quickly arriving at isolated facts.

Peculiarly useful as a dictionary to the possessors of the Encyclopædia Britannica (which, indeed, contains not less than 10,000 words which no previous dictionary had defined), THE CENTURY DICTIONARY is also a most convenient adjunct to the Encyclopædia Britannica from another point of view. The exhaustive treatises in the Encyclopædia Britannica discuss groups of facts. They are the best monographs in the language, and the reader who has an hour's time to spend will always find in the Encyclopædia Britannica a clear and agreeably written account of any branch of art, science, or history which he desires to investigate.

### FOR BUSY MEN AND WOMEN.

THE CENTURY DICTIONARY, on the other hand, divides the vast structure of knowledge into a greater number of compartments, enabling the reader to find, with the least loss of time, any one item of information at which he may desire to arrive; to examine, so to speak, the contents of any one pigeonhole without handling the papers in any other pigeonhole.

Such is the relation between the two books, if the CENTURY DICTIONARY be regarded as a fact-book.

As a word-book, it is incomparably the best dictionary in existence. The New English Dictionary will, no doubt be of very great value, and especially to philologists, when it is completed, ten years hence; but, meantime, THE CENTURY DICTIONARY is the largest as well as the most comprehensive and beautifully illustrated lexicon of the English language. It completes, in the most admirable fashion, THE TIMES Library of Reference, and it will no doubt find its way to the shelves of every well-chosen library, however modest.

### NOW, RATHER THAN LATER.

There is, however, in this connection a very relevant question, as to the desirability of procuring the work as soon as possible. Book-buyers have learned by experience, that most books are at first offered in an expensive form, and later, in a cheaper guise at reduced prices. The novel published last year in three volumes at a guinea and a half, may be had this year for six shillings; the book of travel which cost fifteen or eighteen shillings a few months ago, is to be procured to-day, by those who waited patiently, for half the price. THE TIMES has, however, in its issue of the Encyclopædia Britannica, and of THE CENTURY DICTIONARY, broken away from this tradition. It offered the first few thousand copies of the Encyclopædia

Britannica at 20 per cent. less than the price at which many thousands of copies were subsequently sold. Those who promptly ordered their copies had the benefit of the minimum prices. They took the trouble to act as soon as the offer was made, and those who waited were compelled either to do without the work or to pay more for it.

### THE SECRET OF THE BARGAIN.

In the case of THE CENTURY DICTIONARY, a limited edition was offered a few weeks ago for £13, in half Morocco binding, or thirteen monthly payments of one guinea each; little more than half the publishers' price. That price still obtains, and any reader who at once applies to THE TIMES for a copy of the work may benefit by this temporary arrangement. The best way to introduce a really good work of reference is to sell as quickly as possible, without regard to immediate profits, a limited edition of it; for, if the book will speak for itself, every copy that finds its way to any house supplies a most eloquent and unanswerable advertisement. This is what is now being done with THE CENTURY DICTIONARY. But the price will be increased as soon as the remaining copies of this first edition have been exhausted, and there is now so little time to lose that those who intend to procure the work at the present prices will do well to make immediate use of the order form.

### A ROYAL ROAD.

The old saying that there is no royal road to learning is a wholesome maxim for nursery use. The first marches upon that labourous route must necessarily be difficult, for the power of rapid and accurate comprehension can only be acquired by vigorous preliminary discipline. The long way—league upon league of cube root, irregular verbs, and the catalogue of kings and queens—hardens the muscles once for all, and those who shirk in the shady by-paths never acquire a sturdy gait. When, however, the end of the broad high road is reached, the conditions of the journey are greatly altered.

### "GENERAL INFORMATION."

In the course of the more or less desultory progress toward the position occupied by what one calls "well informed" men and women, we are all at liberty to select our own itineraries. And good books of reference unquestionably offer us a royal road to this supplementary sort of learning. Once at the end of the prescribed route, there is no reason why we should not stray at will, and be the better for our little excursions, if only we pause to examine what we see about us. It is this habit of observing, of questioning, of verifying that we need to cultivate. But it is a habit which those who have completed the tasks of routine education are not likely to acquire, unless the way is made very smooth for them.

### NEW WORDS AND NEW FACTS.

It is in this connection that the CENTURY DICTIONARY may be fairly considered to provide a royal road to learning—to that sort of learning which enables us to think intelligently and to talk intelligently about the current topics of the day. The occurrence in one's newspaper of an unfamiliar word, the mention of an unknown substance or an unknown process, arouses in the average reader's mind enough of curiosity to make him turn to a work of reference, if he knows that the information he desires will easily be found. But such casual invitations to the pursuit of knowledge are hardly strenuous enough to draw him among the bristling difficulties of special text books. He will learn a little if he is not afraid of having to learn too much; he will spend five minutes very profitably, if he is not afraid that he will be led to make too good a use of half an hour. With all the good will in the world one cannot learn everything there is to learn, and if, when we are confronted by any new fact, we learn only enough about it to understand a paragraph in a newspaper, or a page in a review, we are at any rate a little better off than if we had remained in outer darkness.



# WHAT SOME EARLY PURCHASERS SAY ABOUT THE "CENTURY DICTIONARY,"

## THE NEW WORK ISSUED BY *The Times*:

THERE have been published, in the columns of *THE TIMES*, since its issue of the *CENTURY DICTIONARY* was first announced on May 8th, more than a hundred letters from purchasers of the *CENTURY DICTIONARY*. It is impossible to reproduce them all in the limited space of this one advertisement, but a few representative letters from different classes of subscribers will show how general is the usefulness of the work.

These letters are not empty compliments. They are written by people who sent money to *THE TIMES*, expecting to receive from *THE TIMES* full money's worth. The point of view from which they regard the volumes of the *CENTURY DICTIONARY* is not an indulgent one. When they unpack the volumes they are quite prepared to find fault if there is fault to be found. There is none. They see that they made a good bargain; that they got even more for their money than they had hoped to get.

Such letters as these show, too, how the public use the *CENTURY DICTIONARY*, and what they find in it. The opinions of the critics who review books for newspapers and magazines are, necessarily, the opinions of specialists. A work of reference may be of the utmost interest to them, and yet not be less directly adapted to the needs of the general reader.

Here we have the direct expression of the possessor's judgment upon the work—the opinion of the man who bought it to use, and finds it useful.

**From a Privy Councillor:**

54, Portland Place, London, W.

The *CENTURY DICTIONARY* is a masterpiece of con-  
solation. An examination of it fills me with a strong  
sense of the care bestowed to insure accuracy. It is a  
work of exceptional value and utility, which I find  
most helpful in many ways.

(Signed) JAMES BRYCE.

surpasses anything hitherto undertaken in our lan-  
guage. What has particularly struck me to find, in a  
general dictionary, is the vast number of scientific and  
technical words, and the fulness and accuracy of their  
definition.

In short, the *CENTURY DICTIONARY* is a necessary and  
most worthy adjunct to the *Encyclopædia Britannica*.

(Signed) CHARLES GRAHAM,  
Professor of Chemical Technology.

May 26th, 1899.

being able to place the fullest confidence in its dicta, as  
absolute and beyond question, and its easy acquisition  
by the means you have provided demands that all pro-  
fessional men whose sayings and doings in any way  
become public should be in possession of such an indis-  
pensable addition to their technical library.

(Signed) W. R. HERRING,  
Chief Engineer and Manager.

May 22nd, 1899.

**From a Practical Manufacturer.**

Rosehaugh, Clitheroe, May 23rd, 1899.

With reference to the special branches of knowledge  
referred of in the *CENTURY DICTIONARY*, I am perhaps best  
qualified to speak as to Chemistry and Chemical Tech-  
nology. These subjects generally I have looked into  
very carefully, with the result that I think the words  
defined cover a very wide field, while the definitions  
and descriptions are concise and accurate.

The branch of Chemical Technology with which I am  
most concerned is that of Portland Cement manufac-  
ture, and I have naturally looked critically into every-  
thing bearing on this subject, and that of calcareous  
elements generally.

We have all the information the general inquirer is  
likely to want, while if more is needed it may be used  
as a key for further investigation.

I am myself now using the *DICTIONARY* as the starting  
point for the information on the subject.

(Signed) CHARLES SPACKMAN, F.C.S.

**From a Physician.**

Melrose House, Ryde, I. of Wight.

The *CENTURY DICTIONARY* is quite perfect.

(Signed) ALEXANDER G. DAVEY, M.D.

May 22nd, 1899.

**From a Statesman.**

7, Cromwell Gardens, S.W.

I am glad to express the opinion that the *CENTURY  
DICTIONARY* appears to be a monument of skilled and  
well-directed industry, and an exceedingly useful and  
valuable addition to a library—in fact, a work which is  
fully worthy of publication by *THE TIMES*.

(Signed)  
WM. DES VOEUX [Bart., G.C.M.G.]

June 3rd, 1899.

**From an Engineer.**

Edinburgh & Leith Corporations Gas Commrs.  
Chief Engineer and Manager's Office,  
New Street Works, Edinburgh.

I have already devoted some time to a perusal of the  
*CENTURY DICTIONARY*, particularly with regard to its  
scientific and practical definitions of subjects appertain-  
ing to Civil and Mechanical Engineering. I am pleased  
to find full definitions of terms, sufficient to satisfy the  
most exacting Experts upon the particular subjects in  
question, and such as I have never found elsewhere in  
kindred publications.

The great charm of the work to me is the fact of

**From a Railway Manager.**

Great Eastern Railway, General Manager's Office,  
Liverpool Street Station, London.

I have received my copy of the *CENTURY DICTIONARY*,  
and regard it as a most valuable addition to anyone's  
library. I have had occasion more than once to refer to  
it, and each time have found with the greatest ease what  
I sought.

The particulars given regarding railways, their appli-  
ances, &c., are to me, as they will be I am sure to all  
railway men, most interesting.

The two copies which were ordered by my Directors  
—one for the Great Eastern Library at this station, and  
the other for the Great Eastern Mechanics' Institute, Stratford  
are highly appreciated.

(Signed) [SIB] WM. BIRT.

May 24th, 1899.

**From a Surveyor.**

Pinner House Pinner, Middlesex.

I am very much pleased with the *CENTURY DICTIONARY*  
you sent me, and, although I have only had it  
a short time, I have found it very useful as a book of  
reference in my professional work.

Its description of machinery and architecture is most  
explicit; and I should have no hesitation in recom-  
mending it to anyone I know desirous of purchasing a  
comprehensive work of this kind.

(Signed) C. A. WOODBRIDGE.

May 24th, 1899.

**From a Professor of Chemistry.**

The Laboratory, 23, Euston Buildings, N.W.

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## Keystones.

**A Refreshment Kiosk** has been erected in Brixton Gardens, from the designs by Mr. W. R. Bryden.

**A Stained-Glass Window**, erected in Zion Chapel, Batley, was unveiled last Wednesday evening by the Rev. J. T. Radcliffe. The window was erected by Messrs. Talbot and Co., of Leeds.

**Three Memorial Stained-Glass Windows** have been placed in the apse of Inverbroock Free Church. They are the work of Messrs. William Pearce, Ltd., of Birmingham, and Mr. D. J. Scott, of Brothock Bridge, fixed them.

**The new Royal London Ophthalmic Hospital** was opened on Tuesday last week by the Duke and Duchess of York. The new buildings consist of three blocks, and have cost £80,000. The architects were Messrs. Young and Hall.

**New Wesleyan Chapel for Crookes.**—The foundation stone of a new Wesleyan chapel and school was laid last Thursday. The chapel and schoolroom will accommodate about 600 persons. The cost of the building will be nearly £5,000.

**New Printing Offices at Eastbourne** have been built for the "Eastbourne Chronicle." The offices were built from the plans by Mr. C. Crisford, of Eastbourne, and Messrs. Millar and Selmes, of the same town, were the builders. The buildings cost about £7,000.

**A New Fountain at Ipswich** was unveiled last Thursday. The fountain, which has been placed at the junction of Portman Road with Princes Street, in close proximity to the Cattle Market, was built from the designs of Mr. Frederick Wheeler, F.R.I.B.A. It is executed in Cornish and Aberdeen granite, and is about 14ft. in height.

## COMING EVENTS.

### Wednesday, July 5.

"BUILDERS' JOURNAL" COMPETITION.—EXHIBITION OF DRAWINGS.—(Third day.) At 56, Great Marlborough Street, W. 10 a.m. to 7 p.m.  
ROYAL ARCHEOLOGICAL INSTITUTE.—(1) Dr. S. Russell Forbes on "Recent Excavations in the Forum at Rome." (2) Professor E. Lewis, M.A., F.S.A., on "Roman Antiquities in the Rhineland." 4 p.m.  
BUILDERS' FOREMEN AND CLERKS OF WORKS' INSTITUTION.—Ordinary Meeting of the Members. 8 p.m.

### Thursday, July 6.

"BUILDERS' JOURNAL" COMPETITION.—EXHIBITION OF DRAWINGS.—(Fourth day.)

### Friday, July 7.

"BUILDERS' JOURNAL" COMPETITION.—EXHIBITION OF DRAWINGS.—(Fifth day.)

### Saturday, July 8.

PEOPLE'S PALACE ARCHITECTURAL SOCIETY.—Visit to Parke's Museum, Margaret Street, W. 3 p.m.  
"BUILDERS' JOURNAL" COMPETITION.—EXHIBITION OF DRAWINGS.—(Concluding day.)

### Monday, July 10.

CENTRAL SCHOOL OF ARTS AND CRAFTS.—Exhibition of Students' Work. 12 to 8.30 p.m.

### Tuesday, July 11.

CENTRAL SCHOOL OF ARTS AND CRAFTS.—Exhibition of Students' Work. 12 to 8.30 p.m.

### Wednesday, July 12.

CENTRAL SCHOOL OF ARTS AND CRAFTS.—Exhibition of Students' Work. 12 to 8.30 p.m.  
NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—A general meeting will be held at Furness Abbey Hotel at 11 a.m., and an excursion will take place in the afternoon to Millom; start at 1.25 p.m.

### Thursday, July 13.

NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—Excursion to Barrow; start at 9.20 a.m.  
CENTRAL SCHOOL OF ARTS AND CRAFTS.—Exhibition of Students' Work. 12 to 8.30 p.m.

## CURRENT PRICES.

FORAGE.			
	2 s. d.	2 s. d.	
Hay, best	per load	3 0 0	3 10 0
Sainfoin mixture	do.	3 0 0	3 15 0
Clover, best	do.	3 10 0	4 5 0
Beans	per qr.	1 0	1 8 0
Straw	per load	1 4 0	1 16 0
OILS AND PAINTS.			
Castor, French	per cwt.	1 4 6	1 5 1
Colza, English	per cwt.	1 3 3	
Copperas	per ton	2 0 0	
Lard	per cwt.	1 8 9	1 9 0
Linseed	per cwt.	1 0 6	1 0 9
Neatsfoot	per gal.	0 2 6	0 4 0
Petroleum, American	per gal.	0 0 5 5/8	
Do., Russian	per gal.	0 0 5 1/8	5 3/16
Pitch	per barrel	0 8 0	0 8 6
Tallow, Town	per cwt.	1 4 3	1 4 6

	2 s. d.	2 s. d.
Tar, Stockholm	per barrel	1 6 6
Turpentine	per cwt.	1 14 4
Glue	per cwt.	2 18 6
Lead, white, ground, carbonate per cwt.		0 19 0
Do. red	per cwt.	0 17 0
Soda crystals	per ton	2 15 0
Shellac, orange	per cwt.	3 8 6
Do. sticklac	do.	2 2 6
Pumice stone	do.	0 8 9
METALS.		
Copper, sheet, strong	per ton	88 0 0
Iron, bar, Stafrs. in London	do.	6 15 0
Do. Galvanised Corru-		
gated sheet	do.	12 10 0
Lead, pig, Spanish	do.	14 5 0
Do. English common brands	do.	14 10 0
Do. sheet, English, 6lb.		
per sq. ft. and upwards	do.	16 10 0
Do. pipe	do.	17 5 0
Nails, cut clasp, 3in. to 6in.	do.	9 0 0
Do. floor brads	do.	8 15 0
Tin, Foreign	do.	116 18 9
Do. English ingots	do.	116 0 0
Zinc, sheets, English	do.	27 10 0
Do. Vieille Montaigne	do.	21 0 0
Do. Spelter	do.	26 5 0

TIMBER.			
Soft Woods.			
Fir, Dantzic and Memel	per load	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Larch, log, Dantzic	per fath.	4 10 0	5 10 0
Do. Petersburg	do.	4 0 0	6 10 0
Deals, Archangel 2nd & 1st per P. Std.			
Do. do. 4th & 3rd.	do.	12 0 0	12 5 0
Do. do. unsorted	do.	7 5 0	8 5 0
Do. Riga	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow	do.	10 10 0	14 15 0
Do. do. 2nd	do.	10 10 0	12 0 0
Do. do. unsorted	do.	8 0 0	11 5 0
Do. do. White	do.	7 15 0	9 15 0
Deals, Swedish	per P. Std.	10 15 0	15 15 0
Do. White Sea	do.	12 5 0	
Do. Quebec Pine, 1st.	do.	18 0 0	19 0 0
Do. do. 2nd	do.	12 0 0	
Do. do. 3rd & 4th	do.	7 15 0	9 15 0
Do. Canadian Spruce, 1st	do.	9 0 0	10 5 0
Do. do. 3rd & 2nd	do.	6 5 0	7 15 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	do.	6 15 0	9 5 0
Flooring Boards, 1 in.			
prepared, 1st	per square	0 12 0	
Do. 2nd	do.	0 9 6	0 11 3
Do. 3rd & 4th	do.	0 9 6	
HARD WOODS.			
Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 12 6	3 17 6
Bux, Turkey	per ton	7 0 0	15 0 0
Cedar, lin., Cuba	per ft. sup.	0 0 4	0 0 4 1/2
Do. Honduras	do.	0 0 3 3/4	
Do. Tobasco	do.	0 4 3/16	
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price			
for Cargo, Honduras	per ft. sup.	0 0 7/8	
Do. African	do.	0 0 3	0 0 4
Do. St. Domingo	do.	0 4 23/32	6 23/32
Do. Tobasco	do.	0 0 4 13/16	
Oak, Dantzic and Memel	per load	3 5 0	3 5 0
Do. Quebec	do.	4 12 6	5 0 0
Teak, Rangoon, planks	do.	9 15 0	14 5 0
Wainscot, Riga (Bauk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub. ft.	0 2 6	0 4 2

## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

**BRAINTREE (Essex).**—For new house, Drury Lane, for Mrs. Anne Downing. Messrs. Clare and Ross, architects, Chelmsford, and 1, West-street, Finsbury-circus, E.C. 1. Smith and Son ... £285. J. F. Fenness, Braintree ... £755

**BECKENHAM.**—For the erection of a technical institute and swimming baths, for the Urban District Council. Mr. J. A. Angell, surveyor, Council's Offices, Beckenham. Quantities by Messrs. R. L. Curtis and Sons:—

	Swimming Technical	
Baths	Institute.	Total.
G. F. Kick	£12,897	£2,886
T. G. Sharphington	12,760	9,530
B. E. Nightingale	12,193	8,790
Smith and Son	12,536	8,236
C. Gray Hill	12,360	8,300
T. W. Jones, Becken-	11,741	8,552
ham		20,293

\* Recommended for acceptance.  
**COLWYN BAY (North Wales).**—For the erection of a new hall and additional house, Rydal Mount School, for Mr. T. G. Osborn, M.A., J.P. Mr. T. E. Lidiard James, architect, 50, Lincoln's Inn-fields, London. Quantities by Mr. T. Mark Deacon, F.S.I., 32, Craven-street, Charing Cross:—

Foster and Dicksee	£10,992	J. Berth Jones	£10,172
Barnley and Sons	10,688	W. W. Freeman	9,650
John Roberts	10,400	John Gethin	
Evan Jones	10,307	Shrewsbury	8,995

\* Accepted.  
**EBBW VALE (Mon.).**—For additions to school, Cwm-ydderch, Cwm, for the Aberystwith School Board. Mr. R. L. Roberts, architect, Victoria-chambers, Abercarn. Quantities by architect:—

W. T. Morgan	£11,191 10	C. F. Morgan	£1,055 0
C. H. Reed	11,150 0	Williams & Rogers	1,020 0
J. Jenkins	1,060 0		

**FELSTEAD (Essex).**—For new stables, coach-house, &c., at the "New Tree." Messrs. Clare and Ross, architects, Chelmsford, and 1, West-street, Finsbury-circus, E.C. 1. J. Brock, Rayne (accepted) ... £158

**FOLKESTONE.**—For the construction of three new roads, Ashley Grange Estate, Cheriton; near Folkestone, for Mr. J. C. Edwards. Messrs. Marler and Co., surveyors, 95A, Gloucester-road, South Kensington, S.W.:—

E. H. Jackson	£1,501 10 0	Batchelor and	
Edmund Iles	1,378 16 8	Snowden	£1,000 0 0
C. Lyons	1,349 0 0	J. C. Treuman,	
S. Kavanagh	1,331 5 4	Swanley	1,054 0 0
J. Jackson	1,178 0 0		

\* Accepted.  
**HALSTEAD (Essex).**—For relaying drains, new sanitary arrangements, and water supply to the workhouse, for the Board of Guardians. Messrs. Clare and Ross, architects,

Chelmsford, and 1, West-street, Finsbury-circus, E.C. Mr. J. S. Farmer, quantity surveyor, Ipswich:—  
S. Wiles ... £277 0  
E. West ... 699 0  
F. Johnson ... 698 0  
G. Sudbury and Sons ... 656 0  
W. Sudbury, sen. ... 617 15

\* Recommended for acceptance.  
**LITTLE WALTHAM (Essex).**—For house, shop, stables, and slaughter-house, for L. Campen, Esq. Messrs. Clare and Ross, architects, Chelmsford, and 1, West-street, Finsbury-circus, E.C.:—  
Smith and Son ... £1,697 10  
F. Johnson ... 1,689 0  
G. Holland ... 1,673 0

\* Accepted.  
**LONDON.**—Rebuilding offices at Vicarage Road Board School for all departments against the boundary walls of Vicarage Road and Inverness Place, refitting lavatories, and providing new drainage scheme for school and school keeper's house. For the London School Board. Mr. T. J. Bailey, architect:—  
W. V. Goad ... £2,395  
Martin, Wells, and Co. ... 2,799  
L. H. and R. Roberts ... 2,694  
Kirk and Randall ... 2,530

\* Accepted.  
**LONDON.**—New house at Woolmore-street Board School, for the schoolkeeper and enclosing, draining, and paving the additional land; filling in arches forming gullies and infants' covered playground; providing windows to class-room on north side of graded school on the first and second floors, for the London School Board. T. J. Bailey, architect:—  
Wall and Co. ... £2,066 0  
McCormick & Sons ... 1,844 0  
Williams and Son ... 1,787 0  
L. H. & R. Roberts ... 1,731 0  
F. Bull ... 1,698 0

\* Accepted.  
**LONDON.**—For private street works for the Hornsey District Council. Mr. E. J. Lovegrove, Engineer and Surveyor, Hornsey District Council:—

	Russell-	Hornsey-lane
	road.	Gardens.
Pedrette and Co.	£297	£3,185
E. T. Bloomfield	948	3,392
E. H. Jackson	917	3,131
J. A. Dunmore	908	3,140
E. Wilson	900	3,309
W. Griffiths	860	3,008
C. Ford	847	2,972
Ballard, Limited	859	2,933
T. Adams	835	2,883
W. Hollingsworth, Hendon	827	2,921
Killingback and Co., Camden		2,871
Town	766	2,584

\* Accepted. † Withdrawn.  
**NOTTINGHAM.**—For the erection and completion of four villa residences, Sherwood Rise, Nottingham. Mr. Frank Parkin, C.E., architect, Prudential-buildings, Nottingham:—

W. Wilson	£1,499	Thos. Long	£3,020
A. B. Clarke	3,288	Wm. Maulo	2,983
J. Musson	3,049		

\* Accepted.  
**PENARTH.**—For additions to schools, Albert-road, for the School Board. Messrs. Seddon and Carter, architects, Bank-buildings, St. Mary-street, Cardiff. Quantities by architects:—  
J. S. Shephard ... £1,833 0  
Latty and Co. ... 1,639 0  
John Jones ... 1,637 12  
Thos. Bevan ... 1,539 0

\* Accepted.  
**ST. ALBANS.**—For the erection of a residence, Grosvenor-road, St. Albans, for Councillor Edwin Lee. Mr. Percival C. Blow, architect, 7, London-road, St. Albans:—  
W. Sharp ... £1,043  
E. Dunham ... 1,007  
J. T. Bushell ... 965

\* Accepted.  
**ST. ALBANS.**—For erection of stabling, the Cloisters, St. Albans, for Messrs. J. Fish and Son, Limited. Mr. Percival C. Blow, A.R.I.B.A., architect, 7, London Road, St. Albans:—  
C. Miskin and Sons ... £278  
J. and W. Savage ... 2,665  
Boff Bros. ... 665  
C. Deenhams ... 645

\* Accepted, subject to slight modifications.  
**ST. ALBANS.**—Repairs and additions to the "Jolly Sailor," Sandridge Road, St. Albans. Mr. Percival C. Blow, A.R.I.B.A., architect, 7, London Road, St. Albans:—  
C. Brightman ... £1,285  
J. T. Bushell ... 1,185  
C. Miskin and Sons ... 770

\* Accepted, subject to slight modifications.  
**ST. ALBANS.**—For the erection of a residence, London Road, St. Albans, for Mr. W. S. Glover. Mr. Percival C. Blow, A.R.I.B.A., architect, 7, London Road, St. Albans:—  
J. T. Bushell ... £1,285  
Boff Bros. ... 1,185  
C. Miskin and Sons ... 1,198

\* Accepted.  
**SUTTON.**—For proposed council offices and fire station, for the Urban District Council. Mr. C. Chambers Smith, town surveyor, Sutton Urban District Council:—  
A. Bush ... £3,844  
C. F. Kearley ... 8,675  
W. Wallis ... 8,451  
Stewart and Sons ... 7,972

\* Accepted.  
**WOKINGHAM.**—Rebuilding coach factory (part old). A. E. Sidford, M.S.A., architect. Quantities by Mr. E. Ide, Cockspur Street:—  
E. C. Hughes ... £787  
J. B. Seward, Wokingham ... 2,730

## CONTRACTS OPEN.

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The Commissioners of H.M. Works and Public Buildings are prepared to receive TENDERS for the ENLARGEMENT and ALTERATION of the HEAD POST OFFICE at Carlisle.

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The Commissioners do not hold themselves responsible for the accuracy of the quantities, nor do they bind themselves to accept the lowest or any Tender.

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H.M. Office of Works, &c.  
June 28th, 1899.



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JULY 5TH, 1899.

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# HEATING AND VENTILATION.\*

By WALTER JONES.

(Concluded from page clxvi., No. CCXXIX.)

FOR warming buildings there are five recognised methods of calculating the amount of heating surface required for varying temperatures.

(1) On the cubic capacity of the room or building.

(2) On the cubic feet of air to be warmed per minute.

(3) On the superficial feet of glass surface.

(4) On the superficial feet of glass surface and its equivalent in exposed walls, ceilings, &c.

(5) On the heat units emitted per square foot of heating surface per hour.

So far as my experience goes, not one of these methods is in itself satisfactory, for the following reasons:—

(1) *On the Cubic Capacity.*—The heat required to warm the air in any room is infinitesimal compared with the loss by the window surface, and the heat absorbed by the walls, furniture, &c. I had an amusing illustration of this some years ago. A gentleman who was writing a book on the subject had proved to demonstration (theoretically) that so many cubic feet of air could be raised a certain number of degrees by a given number of heat units; that by pouring  $6\frac{1}{4}$  gallons, i.e., one cubic foot of boiling water, into a radiator, it would maintain a temperature of 60deg. in his bedroom during a frosty night. He asked me for the loan of a radiator to prove his theory, and although I told him that ten times this quantity of heat would be insufficient, he insisted that his conclusions were correct. He borrowed the radiator—I have not heard the result or seen the radiator since.

Take another illustration—the proportion of heating surface required for a small room or greenhouse where the cubic capacity is small and the cooling surface proportionately large, will be much greater than is necessary in a large room where these conditions are reversed, hence no table based on the cubic capacity alone will be satisfactory for rooms differing in size, or with great variations in the proportion of glass or other cooling surface.

(2) *On the cubic feet of air to be warmed per minute.*—I have tried repeatedly to test the accuracy of Hood's rule which Mr. Dye says "is an exact rule which has needed no variation for horticultural work." My experience is that it is an impossible rule either for horticultural or any other class of buildings, being cumbrous, circuitous, and altogether unreliable and unworkable.

(3) *On the superficial feet of glass surface.*—The cooling effect of glass is so much greater than wood or brickwork that no rule can be considered complete that leaves glass surface out of consideration. For instance, it will take about five times the amount of heating surface to maintain 60deg. temperature in a greenhouse that would be required in a room the same size with only one small window in the room, and for this reason any calculation based on the glass surface alone will be misleading when applied to rooms having considerable variations, either in cubic capacity or superficial surface of glass.

(4) *On the super. feet of glass and its equivalent in exposed wall.*—This basis of calculation is better than any of the others providing the data are correct. I have examined some elaborate calculations on this basis where the result obtained for one room has been equal to 14ft. super. per 1,000 cubic feet, and another room of about the same size in the same building has been 44ft. per 1,000 cubic feet—i.e., three times the quantity of pipe surface to obtain the same result. In hundreds of cases the information cannot be obtained for this basis of calculation, hence this rule requires some further consideration and amendment.

(5) *On the heat units emitted per square foot of heating surface.*—Now, it would appear the most natural thing in the world to accept a

British standard unit as a proper basis for making calculations, and yet I know of no basis that would be so misleading or so unreliable. The standard unit of heat is the necessary amount to raise the temperature of 1lb. of water at 32deg. Fah. one degree, i.e., from 32deg. to 33deg., and many writers have not only assumed, but have printed tables showing that one heat unit will also raise 1lb. of water from 211deg. to 212deg., but this conclusion is altogether erroneous. I have carried out scores of experiments to boil water with gas jets, with steam, and with fuel. In one of these tests which may be taken as a fair sample of the others, to boil 125 gallons of water in a tank with  $\frac{1}{2}$ in. steam jet, the first 50deg. were raised at the rate of 1.8deg. per minute, the next 40deg. at 1.4deg. per minute, the next 30deg. at 1.2deg. per minute, and the next 20deg. at .73deg. per minute, i.e., the temperature of the water when cold was heated two and a half times as fast as when near boiling point. Again, the unit is so small a factor, its relative value changes with the increasing temperature, the influence of varying temperatures and the variations in the amount of cooling surface are so enormous, that the utmost care would be necessary to ensure satisfactory results.

Let me give two illustrations of this.

First.—Most of you will know that 100ft. run of  $\frac{1}{2}$ in. bore high pressure tube will raise the temperature of a room to about the same extent as 100ft. run of 3in. low pressure pipes, although the latter contains nearly three times the surface, and contains about twelve times the quantity of water. Query.—How many heat units are contained in the relatively small volume of water?

The second illustration is one that occurred quite recently, showing how easily one may get astray on the heat units basis. I received an inquiry for goods for export, the boiler was specified to produce 41,000 calories—say 164,000 units in twenty-four hours; fortunately they also mentioned the number and size of radiators required, and from this data one of my staff selected a boiler, and, basing his calculations on the quantity of water in the radiators, worked out the power of the boiler as 700,000 heat units, or if 4in. pipes were used, 1,400,000 heat units, because 4in. pipes contained twice the amount of water as that contained in the radiators. For my own satisfaction I worked out the power on the basis of the quantity of water that could be boiled in twenty-four hours with the boiler specified, and found that instead of 164,000 units as specified, or 1,400,000 as calculated by one of the staff, the actual power was 16,000,000 units, i.e., twelve times the one, and one hundred times the other. This may be an exceptional case, but it was taken from actual experience and shows how easily one may be misled on the heat units basis. The goods were supplied and might have led to serious consequences if a boiler had been supplied as specified, capable of producing 164,000 units instead of 16,000,000 units. Now, if the recognised methods are at fault, what is the remedy? I fear I cannot answer that question now, I can only hint at what may prove a satisfactory solution.

This may be obtained either by a series of experiments in different buildings, under varying conditions of temperature and widely different glass or cooling surface, which could only be done at a great cost, or by a few leading engineers taking careful tests from actual work done, comparing notes, and verifying the results so that all may benefit.

Four points should be observed in arriving at any conclusion:—

(1)—The rule should be simple, and one in which the data can be readily obtained.

(2)—The outside temperature and inside temperatures should be specified.

(3)—The water temperature should also be given.

(4)—The rule to apply if possible to any building, whether brick, wood, iron, or glass; this is not absolutely necessary and would probably be unworkable in glass buildings as the range increased, i.e., the greater the difference between the inside and outside temperatures.

Some time ago I adopted the following rule

for 60deg. Fah. inside, when 30deg. outside water temperature 160deg. to 170deg.

Allow 1ft. super of heating surface per 10 cubic feet capacity, and add 1ft. super of heating surface per 6 square feet of glass.

And a similar rule for the American climate to give 70deg. Fah. inside, with zero outside water temperature 170deg.

Allow 3ft. super of heating surface per 10 cubic feet capacity, and add 1ft. super of heating surface per 4 square feet of glass.

Now, I cannot vouch for the accuracy of these rules, I have had no means of testing the latter, because in England we rarely get zero temperature, but so far as I have been able to test the former, and I have applied it to horticultural, and to brick buildings, varying in size, I have not yet found any glaring discrepancy such as applies to the previously mentioned rules; we will assume that a rule on this basis can be established as approximately correct, the basis of calculation is simple, and the necessary data would be generally obtainable.

Now, in my opinion, however complex the rule or the calculations may be, you will never obtain absolute accuracy in rooms varying in size, construction, aspect, temperature, &c. and the more complex the calculations, the greater the liability to error.

Let us suppose that a satisfactory rule has been obtained for a temperature of 60deg. inside when 30deg. outside. This result shall be called unity, or one. Then a table of multipliers, in decimal equivalents, varying in an arithmetical progression for every 5deg. may be obtained for the relative proportions of pipe surface for varying temperatures, whether higher or lower, inside or outside, the exact ratio being ascertained by careful tests or experiments.

Let me point out here what has appeared to me the weak point in all the published rules or tables that have come under my notice. I think most of you will admit that every 5deg. added to the inside temperature will require more pipe surface to maintain than was necessary for the previous 5deg., assuming the pipe surface to be the same temperature. There are three causes to account for this.

(1)—The nearer the temperature of the room approaches that of the pipes the smaller will be the amount of the heat abstracted or withdrawn from the pipes to the room.

(2)—The greater the difference between these temperatures, the greater will be the amount of heat given off from the pipes to the room.

(3)—The greater the difference between the temperature inside and outside the room so the loss through walls, windows, &c., will be proportionately increased.

This may at first appear a simple elementary statement of fact, but I wish you to grasp the importance of this fact, for it appears to have been ignored or lost sight of by most writers on this subject.

Let me explain. If 13ft. of surface will give 60deg. temperature in an ordinary room, and 17ft. super. will give 65deg., that is an increase of 4ft. of surface for 5deg. increased temperature; also a temperature of 100 degrees will require 112ft. of surface, and a temperature of 105deg. will require 132ft. of surface or 20ft. more surface for 5deg. increase of temperature, i.e., five times more surface for an increase of 5deg. from 100 Fah. than is required to give an increase of 5deg. from 60 Fah. Now for every 5deg. increase between the 60deg. and the 100deg. the rate should be progressive or at least have some approximation to an arithmetical progression.

Now up to the present I have not met with any rule or table that complies even approximately with these conditions. For instance take Mr. W. J. Baldwin's rule "Hot Water Heating," page 86, on the feet super. of glass Mr. F. Dye's "Hood on Warming," page 238 on the cubic feet of air per minute. Mr. J. Keith's rule, page 66, on the feet super. of glass.

When these three rules were applied to a room in which I had by actual experiment ascertained that 112ft. of surface were required to give 100deg. temperature, the calculations from the three rules respectively

\* A paper read before the Institution of Heating and Ventilating Engineers.



ave Baldwin 47-3ft., Dye 22-1ft., Keith 66-3ft., against 112ft. required by actual tests taken, and further, that all three of these rules for temperatures of 80deg. and upwards were underrated to such an extent, as to land any engineer who trusted to their accuracy in heavy out of pocket expenses.

On page 279 in "Hood on Warming, 1891," Dye gives a rule showing that an inside temperature of

5deg. requires 1ft. of additional surface for an increase of 5deg. temperature.

0deg. requires 2ft. of additional surface for an increase of 5deg. temperature.

5deg. requires 1ft. of additional surface for an increase of 5deg. temperature.

0deg. requires 25ft. of additional surface for an increase of 5deg. temperature.

5deg. requires 10ft. of additional surface for an increase of 5deg. temperature.

0deg. requires 15ft. of additional surface for an increase of 5deg. temperature.

If one foot of extra surface will raise the temperature from 60deg. to 65deg. it cannot require 25ft. extra to raise the temperature from 65deg. to 70deg., or if 25ft. is required to raise the temperature from 65deg. to 70deg., then it must of necessity require more than 0ft. extra to give 75deg. temperature.

Now I respectfully submit these points for your consideration, and I do so in no carping spirit and with no intention to disparage the usefulness of the general information contained in the works referred to. I simply wish to point out that the tables and rules are not to be implicitly relied upon, and that some revision is an absolute necessity. I am of opinion that "Hood" has been copied and relied upon too implicitly, and that theoretical calculations have been accepted without confirmation by reliable data established from actual experience.

I have prepared a table showing the principle for obtaining varying temperatures (by arithmetical progression) 60deg. inside and 30deg. outside being taken as unity; but I specially refrain from allowing this table to appear in print until it can be verified as fairly reliable.

For tables on the high pressure, or small bore system I think there is also scope for further experiment and development. I know of no published table except the one in my own book ("Heating by Hot Water") that throws any light on this subject, and since that was published I have succeeded in obtaining temperatures that would astonish many of our high pressure experts. I have carried out experiments for heating enamelling stoves with water instead of gas, and have obtained over 600deg. Fah. inside the stove from a hot water circulating apparatus, and I herewith express my indebtedness for getting these results to Mr. Wm. Cook, of Edinburgh, and although his name may not be familiar to all of you, he is the most practical high pressure specialist that it has been my pleasure to meet, and if any engineer living can get better results, I shall be happy to make his acquaintance.

The question of hot water supply is also a most important one, and there is immense scope for improving and developing this branch of the trade. I have come across hundreds of instances, from the ordinary supply from a range boiler for a single bath, to the supply for large public institutions, that have been woefully defective and quite inadequate for the requirements. In one instance at a public hospital, where at least £200 had been spent, no hot water was available and it was carried in buckets from the laundry 100 yards away. I have known very many cases in connection with public institutions where the results have been little less than a public scandal. The amount of ignorance that exists among heating engineers on this simple question is astounding, and some useful and reliable data, as to the form, shape, and size of boiler, the best way of preventing damage by sediment deposit, and the best proportions for the various parts of boiler, mains, cylinders, &c., are greatly needed.

The Tubular Bath Boiler Co., of Gray's Inn Road, have some specialities in this direction that are a distinct advance on any range boiler

apparatus that has come under my notice. I refer particularly to the heating by indirect heat with a coil inside the cylinder, so that the range boiler cannot get filled with sediment.

*Second.*—Now we come to the second need, and I think it should not require much argument to show that we sadly want a journal or periodical devoted exclusively to heating and ventilating, and I think we may take a lesson from our American brothers in this respect: if they wish to ensure the success of any trade, they start a paper. Surely if the laundry trade can support two or three journals devoted to their interests in England, the members of the heating and ventilating trades should be ashamed that they have neglected their opportunities so long.

*Third.*—That a code of rules should be prepared and adopted to safeguard the interests of the trade, and that some step be taken to ensure fair treatment and prevent exploitation.

I have no doubt that this touches many other trades besides those in which we are engaged, and I fear that we are in some measure responsible for it by our over-anxiety to secure orders. Let me mention some of the abuses that ought to be put a stop to, and it is in your power to do it, and that without injustice to yourselves or your clients.

An architect once said to me: "I always get about a dozen tenders for my work; one in twelve is certain to make a mistake." "And do you take advantage of that mistake?" "Yes, certainly," he replied. He considered that business, I call it dishonesty, and think that even a stronger term would be admissible. You frequently see advertised "Contracts open, tenders invited." I don't know what your experience is. Mine has been that it is not worth the trouble to quote for advertised contracts. You may see "Estimates Wanted for Public Buildings; Plans may be seen at the Clerk's Office." You are expected to travel 50, 100, or 150 miles simply for the privilege of quoting. I find in these cases it pays better to stay at home.

Yet another method. A plan of a building is submitted. You are asked to submit a scheme and estimate for the work, after which your plan is submitted to some competitor to trade on the experience that may have cost you hundreds of pounds and taken years to acquire. Or still worse, you are requested to go or send 50 or 100 miles to take a plan, and prepare estimate for heating a church. You do it, and after all your trouble your plan is submitted to some other firm, and if they happen to be lower in price you are simply robbed of your time and expenses.

Let me quote two or three cases of shameful treatment, and my experience is by no means exceptional, because this sort of thing is too common, and should be prevented.

I was requested to prepare a scheme for an engineers' institution in South Wales, and after preparing five sets of plans, five separate estimates, and making three journeys of 100 miles and back again, the order was placed with a local man without even an intimation that the order had passed. I only regret that I did not send in a bill for twenty guineas and sue them as a test case.

Another. Five engineers were asked to examine and report on an installation of heating and hot water supply, with a view to giving better results, and reducing the fuel consumption at a workhouse where there were five large blocks of buildings, and the fuel consumption averaged forty-six tons per week the year round. I offered to give a written guarantee to cut down the fuel consumption twenty tons per week, payment on results, and although a large committee passed a resolution recommending my tender for adoption, it was shelved, and the other four reports and tenders were similarly treated, although the out of pocket expenses of the five engineers would be something like £10 each. You have probably had somewhat similar experiences.

In several instances where plans marked with the name of well-known heating engineers have been sent to me for quotation, I have declined to quote, and returned the plans with a letter giving my opinion of such despicable meanness, and stating that a copy of the letter

has also been sent to the engineers whose name appeared on the plan.

If you will all do the same it will not take long to put a stop to such shameful practices.

Let me give you some methods that I have adopted, that have proved satisfactory to my clients and myself. I get a great many applications to send representatives to take plans of buildings, to give advice and estimates of the cost for heating and hot water supply. I reply on a printed form stating that the fee is from half-a-guinea to five guineas, according to the distance and the work required, and I make no exception to this rule. The results have been eminently satisfactory. The terms have been complied with in over one hundred instances, and in 80 per cent. the orders have resulted. I have had a few instances where the applicants objected to comply with the terms mentioned, and in most cases of objection I have afterwards found that the trouble and expense have been saved, and that any prospect of success would have been exceedingly remote.

*Fourth.*—That the members of this Institution should work together, assist each other, and not stoop to the meanness of taking an unfair advantage of other members of the trade.

Now, I fear that I am treading on very delicate ground, yet there are so many tricks in trade, and methods of practising little deceits, and acts of meanness that are quite unworthy the members of this important craft that it would in itself make a good subject for another paper, and at this stage I shall refer to them as briefly as possible.

I have frequently given advice, prepared plans, schemes, and estimates that have afterwards been submitted to others, and the order placed elsewhere, because of the client's dishonesty, or the unscrupulousness of the competitor.

I have also received plans prepared by other engineers, with their names stamped on them; in all such cases I have refused to quote, unless the engineer has been paid for his trouble.

All the tracings sent from my office are now stamped thus:—

THIS DRAWING OR TRACING IS SUBMITTED BY  
JONES & ATTWOOD,  
OF STOURBRIDGE,

Only on the following Conditions.

- 1.—That it shall not be shown to Competitors without our WRITTEN CONSENT.
- 2.—Consent may be obtained, and the plan submitted to open competition upon PAYMENT to us of 5 per cent. on the net amount of our estimate.
- 3.—If no payment is made, or no order results, the PLAN to be RETURNED to us within ONE MONTH.
- 4.—If you object to comply with these conditions KINDLY RETURN plan forthwith.

PLAN No. ....

and it is exceedingly rare that anyone takes exception to it. You are at liberty to adopt this method also if it meets with your approval, and I make no charge for the suggestion.

How often have you been tempted to cut prices by some such remark as: "Oh! I have a lower estimate than yours," or "Mr. Blank specifies a larger boiler than yours, and quotes a lower price, but I should prefer that you did the work." In cases such as these I often reply, I strongly advise you to give Mr. Blank the order.

Another abomination is to procure a fine cut price, and after screwing you down to the lowest possible figure, to insert in the order some guarantee of temperature, or penalty clause for non-completion in a specified time.

Well, gentlemen, it is for you to combine and formulate some scheme to prevent this sort of exploitation.

In conclusion, let me remark, the subject of this paper is heating and ventilation; the latter is conspicuous by its absence, and at the far end of a paper it would be sheer folly for me to attempt to deal with it. In the first place I don't pretend to know much about it, and I fear that in this respect I am not alone, and that judging from the results obtained in some of our public buildings, law courts, town halls, &c., that many of us are in the same unhappy condition. I propose to leave this part of the subject to others who are better qualified than I to deal with it. I will simply remark that heating and ventilating are closely related, and, like twin sisters, when they disagree, mortification is the result, but



when properly regulated, satisfaction prevails. The heating engineer of the future will have to combine ventilation also, and that in large buildings, public halls, churches, schools, factories, &c. Heating plants fixed outside or underneath the buildings will be largely used, the warmed air being forced over hot-water or steam pipes, on what is known as the Plenum system, by means of fans driven by steam, gas, or other motive power, and the development of electricity in the near future will be such that fans, electrically driven, will be largely used in residential property in combination with some system for hot water or steam heating; architects will have to make provision for this in new buildings, and instead of "Plumber and Hot-Water Fitter," the "Heating and Ventilating Engineer" will become a necessity. Well, gentlemen, I trust the members of this Institution will grasp the situation; let your motto be good work well done with fair remuneration. Better lose an order than lose the confidence of a customer; give close attention to small things, so that every completed contract will be a standing advertisement. Do not deery others in the same trade. Try to lead, let others follow. Don't expect all the patronage, but do your best to deserve it.

## Surveying and Sanitary Notes.

**Fleet Street Widening.**—The Court of Common Council decided at its meeting last Thursday to acquire certain ground in Fleet Street for £10,000 in connection with the widening scheme.

**Moreton-in-Marsh Sanitation** was the subject of a Local Government Board inquiry last week, when Colonel Durnford went into an application by the Campden Rural District Council for power to borrow £300 for works of water supply for the town. There was no opposition.

**Tong Improvements.**—A Local Government Board inquiry was held last week by Colonel C. H. Luard, R.E., into an application by the Tong Urban District Council to sanction the borrowing of £3,000 for the improvement of the south side of Tong Street and the east side of Cutler Heights. Mr. W. K. Plunkett, clerk to the Council, stated that the length of Tong Street was 1,824 yards, and the length of Cutler Heights was 1,084 yards.

**Tiverton Sewerage.**—A Local Government Board inquiry was held by Mr. H. Boulnois last Wednesday into the Town Council's application for sanction to borrow £6,750 for purposes of sewerage and sewage disposal, and £500 for the purchase of Little Silver Cottage and Orchard for use as a store yard, repayment of the loan to be extended over forty years. After the usual formal evidence the inquiry closed.

**Proposed Improvements at Stoke-on-Trent.**—Mr. W. A. Ducat held a Local Government Board inquiry into an application made by the Town Council for permission to borrow £2,700 for the improvement and drainage of Hartshill Road, £2,500 for market purposes, £1,600 for the public baths, £1,100 for works of surface water drainage, £1,350 for the purpose of technical instruction, and £650 for works of sewage disposal, making a total of £9,360.

**L.C.C. Loans.**—At the meeting of the London County Council on Tuesday last week the Finance Committee recommended, and it was agreed, that the Council lend the Newington Vestry £10,000 for electric lighting purposes; the Shoreditch Vestry £10,820 for sewerage, paving, and other works, and £9,400 as balance for the building of model dwellings; the Battersea Vestry £18,864 for paving works; and the Hampstead Vestry £5,636, the Islington Vestry £4,200, and the Lambeth Vestry £4,000 for paving works.

## Builders' Notes.

**The Dundee and District Master Builders** held their annual excursion last Wednesday. They visited St. Andrews and had a very enjoyable time, notwithstanding the wet weather.

**The Bristol Master Builders' Association** members paid a visit to that breezy district known as the Quantocks on Tuesday, last week, and very much enjoyed themselves.

**The Tenders for the Temporary Fire Station** at Tooting, which were accepted at last week's meeting of the London County Council, were as follows: For the brick foundations, drains, &c., £214, and for the superstructure £242 10s. The first tender was submitted by Messrs. Harding and Son, and the latter by Messrs. Croggon and Co., Ltd.

**The Contracts for the New Municipal Offices** to be erected in Bow Street, Keighley, were let last Wednesday afternoon, the following being successful:—Masonry, T. Moore, Keighley; joinery, Ineson Taylor, Lees; painting, Tillotson and Harrison; plumbing, J. Jackson; slating, T. Nelson and Son, Bradford; plastering, Bradley, Krischke, and Co., Bradford; heating apparatus, Barley and Clapham.

**Extension of Dundee Dead Meat Market.**—The Markets Committee of Dundee Town Council yesterday accepted a tender for the painter work of the Slaughter-Houses, the sum amounting to £71 10s. The acceptance of the following approximate tenders for the extension of the Dead Meat Market were also authorised:—Mason and bricklayer work, £1,424 19s. 7d.; blacksmith and ironfounder work, £386 10s. 6d.; carpenter and joiner work, £243 4s. 9d.; painter work, £38 13s. 8d.; plasterer work, £16; plumber work, £91 7s.; and slater work, £97—total, £2,247 15s. 6d.

**Workmen's Compensation Act: Interesting Case.**—In the Westminster County Court, on June 26th, the case of "Henley v. Young and Co." came before His Honour Judge Lumley Smith, Q.C., under the Workmen's Compensation Act. Plaintiff sought to recover seven week's pay at £1 a week. Henley is a carpenter, and, having finished the job on which he was engaged, was given notice. According to the rules of the trade he was entitled to one hour's notice for collecting his tools and one hour's pay for grinding them. During the hour allowed for collecting his tools he fell down a hole and injured his ribs. He had collected his tools. It was contended on behalf of the respondents that the accident did not occur while he was working for them. He could have collected his tools at once, drawn his money, and left the job. His Honour held that during that hour the workman was still in the service of the employers, but in this case the accident was not in the course of any act of service to the employers, and therefore there would be judgment for the respondents.

**Arbitration Proceedings** were commenced at the Middleton Hotel, Ilkley, last Thursday, in connection with a claim made against the Ilkley District Council by Messrs. Braithwaite and Co., contractors, of Leeds, for a balance of £838 which they allege to be due under a sewerage contract which they carried out at Ben Rhydding. The claim had been the subject of previous litigation, and at the instance of the Court of Appeal the president of the Bradford Surveyors' Society had appointed Mr. Charles Jackson, architect, Manchester, as sole arbitrator.—Mr. Simpson, for the claimants, in opening the case, said that the most important part of the claim was in respect to what they alleged to be rock work. A clause was inserted in the contract to the effect that the claimants should be paid extra for cutting through rock, and the point upon which the case seemed to turn was whether

the material in question was entitled to be considered as rock. Albert Braithwaite, a member of the claimant firm, gave evidence with regard to the excavations. Generally, he said, the nature of the soil they had to go through was clay and rock, the latter consisting of very hard sandstone. It was necessary to use the appliances generally employed in rock work. Cross-examined, witness denied having said to Mr. John Waugh, Bradford, who supervised the work, that certifying for rock would make no difference to him (Mr. Waugh), whilst it would be a serious matter to himself, and if he would agree to certify for it, he (witness) would see that it was to Mr. Waugh's benefit. Expert evidence was given to the effect that the boulders which had to be dealt with in the excavations should be considered as rock. The proceedings were adjourned.

## Engineering Notes.

**The East London Water Bill**, the object of which is to give the East London Water Company power to take further water from the Thames, and to spend £1,400,000 in new works, was rejected by the Select Committee of the House of Lords last Wednesday.

**Edinburgh Electric Lighting Extension.**—The Electric Lighting Committee of the Town Council have recommended the acceptance of estimates for the extension of the boiler house at Dewar Place Station, amounting to just over £2,000, and estimates for the formation of a siding at M'Donald Road Station at over £2,000.

**Southend Light Railway.**—At the beginning of last week Sir Courtenay Boyle heard the objection of the Leigh Urban District Council to the confirmation of the order for the making of about six miles of light railway in Southend and the Leigh Urban District. The Corporation of Southend were the promoters, and the Urban District Council wanted the Board of Trade to insert a clause binding the promoters to widen a road to a minimum of 23ft., and to complete the whole of the light railway within three years. The Corporation objected to widen the road for the benefit of the Urban District Council, especially as that Council could at the end of ten years take over the railway. Sir Courtenay said it was a strong thing to go into another local authority's district without their consent, but the Corporation were justified in resisting the claim of the Urban Council to pay for the widening of the road. He adjourned the case for the parties to come to some agreement.

**Frauds on Engineers.**—At the Cheshire Quarter Sessions last Wednesday, Henry Cleaver, described as a consulting engineer, was sentenced to twelve months' hard labour for obtaining one guinea by false pretences from Messrs. Stanley, Davies, and Pollard, electrical engineers, Hyde, Cheshire, and for attempting to obtain £25 from them by similar means. Cleaver advertised for tenders for an electrical installation generator's engine, boilers, &c., for Reading, Berks. One hundred and nine firms sent the usual guinea fee, which was not returned. In almost every case they received specifications, accompanied by a request from Cleaver for sums varying from £10, on receipt of which he promised to give them the contract. He asked Messrs. Stanley, Davies, and Pollard for £25, and another £25 on signing the contract. They grew suspicious, and he was arrested. It then transpired that no such works were being erected at Reading, and that Cleaver was a bankrupt and a gambler. One hundred and nine letters were found at his lodgings relating to postal orders and cheques he had received in connection with the bogus contract. Cleaver denied having acted fraudulently, and said he had worked on the scheme for fifteen years. The Judge described it as a deliberate swindle concocted by a man of great ability.



# Masters and Men.

**About Two Hundred Labourers** employed by two Aberdeen timber merchants have struck for an advance in wages from 5d. to 6d. per hour. They base their demand on the fact that the labourers employed by stevedores in discharging the cargoes are paid 6d.

**A Complaint from the Greenock Joiners' Society** was heard at a meeting of the United Trades' Council last Thursday evening. It was said that a Port-Glasgow firm, which had obtained a contract from Greenock Corporation, was employing labourers to do work which properly belonged to joiners—namely, making boxes required in connection with the electricity works. It was decided to instruct the secretary to call the attention of the town clerk to the matter.

**Building Trades Dispute.**—A specially-convened meeting of the Yorkshire Federation of Building Trades was held at Leeds last week to consider a letter received from the London Order of Bricklayers, which was dated June 23rd, and ran as follows:—"At a conference of delegates from our Yorkshire branches, held in York yesterday, I was instructed to write your association requesting them to recognise a deputation of five delegates, with a view to the settlement of the present dispute. Kindly give me due notice of time and place if your association are prepared to receive them, in order that I may acquaint the delegates." In answer to this communication the Yorkshire Federation said that they could not see how a partial conference would do any good, but were quite willing to meet them along with one representative from each union. They offered, if this conference were arranged, to withdraw the lock-out conditionally upon all the men returning to work to their old masters, whether locked-out or on strike, upon the old condition of wages, pending a settlement. The members of the Hull Master Builders' Association are still determined to carry on the fight until they win, and they complain that builders in other parts of the country do not appreciate the grip which the operatives have hitherto had upon them.

# Trade and Craft.

**CHARTERIS AND LONGLEY.**  
This firm manufacture a perfected system of wood block flooring, which stands out conspicuously from among the many other good floorings in the market because it is firm, durable, sani-

section of the flooring, which is securely bound together with the firm's special mastic composition. When wood block flooring is laid over hot-air, gas, water, or other pipes, it is a great disadvantage not to be able to get at them without disturbing the whole floor. Messrs. Charteris and Longley have recognised this fact, and have, therefore, another system of wood block flooring, called the "B" system,

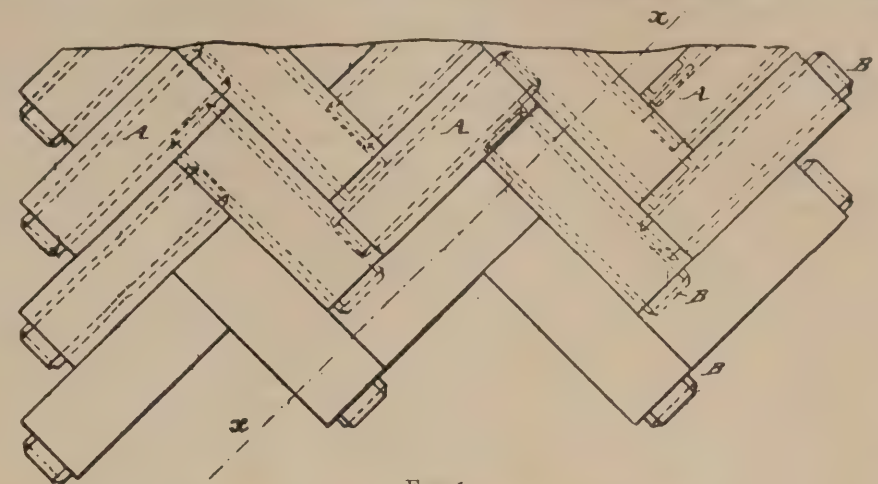


FIG. 1.

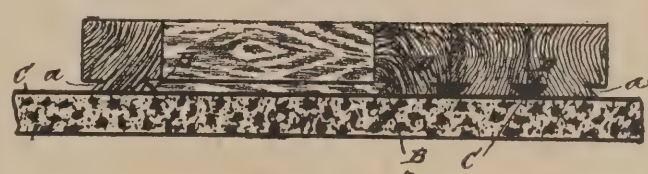


FIG. 2.

tary, noiseless, rot-proof (the timber being specially seasoned and treated before leaving their factories), and fire-resisting qualities. As will be seen from Fig. 1, each block is dovetailed and rabbeted on the bottom at A A and continued to form tongues at B B. It will be at once understood that when the blocks are laid the tongues B B enter the dovetail rabbets, and bind them together in such a way as to prevent the removal of any block without displacing the whole floor. Fig. 2 shows a

by which it is only necessary to unscrew a border and some specially long blocks can be lifted to enable easy access to whatever is beneath. Every piece of wood used by the firm is treated in the "Shapland" kilns, and this fact alone is a guarantee of its goodness. Messrs. Charteris and Longley, whose head offices are at 31 and 32, King William Street, London, E.C., have always a large stock of blocks of all sizes, woods, and patterns at hand, and can generally execute orders at three to four days' notice.

## COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
July	<b>BUILDINGS—</b>		
7	Leathwaite, Lancs.—Schoolmaster's House	Mrs. Gunson	Old King's Head Hotel, Broughton-in-Furness.
7	London, E.—Verandahs, &c., at Infirmary	St. George's-in-the-East Guardians	G. A. Wilson, Vestry Hall, Cable-street, E.C.
8	Barnstaple—Shop and Premises	Symons and Son	F. W. Pether, Architect, Barnstaple.
8	Beeston, Yorks.—House	J. H. Topham	T. A. Buttery and S. B. Birds, Architects, Morley.
8	Ecclefechan, Scotland—Re-flooring Room	Public School	D. Reid, Clerk, Ecclefechan.
8	Halifax—Foundry		W. G. Gray and Son, 23, George-street, Halifax.
8	Heywood—Office s. Workshop, &c.	Water Board	J. Diggle, Engineer, Waterworks Offices, Heywood.
8	Higher Ashe, Devon—Repairs to Farmhouse, &c.	— Preston	White and Colley, Land Agents, Wrangaton, South Brent.
8	London, W.—Strong-Room	Acton District Council	D. J. Ebbetts, 242, High-street, Acton.
8	Rye, Sussex—Sunday School, &c.	Wesleyan Church	— Moon, 3, Sloane-terrace, Rye.
8	Tilney All Saints—Chapel, &c.	Wesleyan Connection	Old Schoolroom, Tower-street, Lynn.
8	St. Albans—Alterations to Court House	County Council	U. A. Smith, 41, Parliament-street, Westminster, S.W.
8	Sandbach—Detached Villa		A. Price, Architect, Sandbach.
10	Curragh Camp, Dublin—Post Office	Board of Public Works	H. Williams, Secretary, Offices of Public Works, Dublin.
10	Preston—County Sessions Hall	Lancs. County Council	H. Littler, Architect, County Offices, Preston.
10	Aberdare—Re-slating Roof, &c., at Market	Markets and Town Hall Company	H. T. Linton, Secretary, Bank-buildings, Aberdare.
10	Belvedere, Kent—Class-Rooms	Erith School Board	Ford, Son, and Burrows, 21, Aldermanbury, E.C.
10	Birkenhead—Additions, &c., to Workhouse	Guardians	E. Kirby, 5, Cook-street, Liverpool.
10	Forres, Scotland—Façade and Alterations	Mechanics' Institute	J. Forrest, Architect, Forres.
10	Gloucester—Alterations to Ventilation	School Board	H. Medland, Architect, Gloucester.
10	Lancaster—Masonry Bridge	Streets Committee	Borough Surveyor, Market-square, Lancaster.
10	Leeds—Boiler House, &c.	Workhouse Guardians	T. Winn, 92, Albion-street, Leeds.
10	Morecambe—Six Houses	J. H. Wilsdon	Marshall Bros., Architects, Back-crescent, Morecambe.
10	Preston, Lancs.—School Alterations	Corporation	Borough Surveyor, Town Hall, Preston.
10	Salford—Additions to Sanatorium	Health Committee	H. Lord, 42, John Dalton-street, Manchester.
10	Utley, Yorks.—House		H. Smith, Architect, Compton-buildings, Keighley.
10	Bradford—Wesleyan Church		J. Morley, 269, Swan-arcade, Bradford.
11	Hoylake, Cheshire—Converting School	National Schools	H. and A. P. Fry, 18, Hackins Hey, Liverpool.
12	Barrow-in-Furness—Abattoirs	Health Committee	Borough Engineer, Town Hall, Borough-in-Furness.
12	Ringwood, Hants—Alterations, &c., to Police Station	County Council	W. J. Taylor, County Surveyor, the Castle, Winchester.
12	Cymmer, Wales—Infectious Diseases Hospital	Glyncoerwg Urban District Council	G. F. Lambert, Architect, Bridgend.
12	Fareham, Hants—Alterations, &c., to Police Station, &c.	County Council	W. J. Taylor, County Surveyor, the Castle, Winchester.
12	London, E.C.—Workshops, &c.	Borough of Shoreditch	Surveyor, Town Hall, Old-street, E.C.
13	Saxmundham, Suffolk—Works	School Board	J. Fry, Solicitor, Saxmundham.
13	Ilford—Corrugated Iron Building	School Board	C. J. Dawson, 7, Bank-buildings, Ilford.
13	Arnside, near Kendal—Enlarging Wesleyan Church		S. Shaw, Architect, Kendal.
13	Kendal—House, &c.	— Richmond	S. Shaw, Architect, Kendal.
15	Clara Vale, Ryton-on-Tyne—Seven Houses	Stella Coal Company	Colliery Office, Clara Vale, Ryton-on-Tyne.
15	Old Hill, Staffs.—Extension of Offices	Rowley Regis Urban District Council	Meredith and Pritchard, Bank-buildings, Kidderminster.
17	Whitehaven—Cometary Works	Joint Burial Committee	J. S. Brodie, Engineer, Town Hall, Whitehaven.
17	Beckenham—Electric Light Station	Urban District Council	J. A. Angell, Council Offices, Beckenham.



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—Continued.</b>			
July 17	Stamford—Workhouse ... ..	Union Guardians ... ..	J. H. Horton, 50, King-street, South Shields.
" 17	Wimbledon—Public Baths ... ..	Urban District Council ... ..	R. J. Thompson, 47, Hill-road, Wimbledon.
" 18	Lowestoft—Electric Light Station ... ..	Corporation ... ..	A. E. Fridmore, 2, Broad-street-buildings, E.C.
" 18	Dorchester and Westbury—Alterations to Passenger Station, &c. ... ..	Great Western Railway Co. ... ..	Engineer, Bristol Station.
" 18	Warrington—Electric Light Station ... ..	Electric Lighting and Sanitary Works Committee ... ..	J. Deas, Municipal Offices, Warrington.
" 20	Earlsheaton, Yorks.—Infectious Diseases Hospital ... ..	Joint Hospital Board ... ..	Holton and Fox, Architects, Westgate, Dewsbury.
" 21	Carlisle—Enlargement, &c., of Head Post Office ... ..	H.M. Commissioners of Works ... ..	H.M. Office of Works, Storey's-gate, S.W.
" 24	Dartford—Technical Schools, &c. ... ..	Urban District Council ... ..	D. F. Brow, Organising Secretary, Summerhill-rd., Dartford.
" 25	London, W.C.—Electric Light Generating Station ... ..	County Council ... ..	Architect's Department, 13, Spring-gardens, S.W.
" 27	Brighton—Alterations, &c., to Library, Museum, &c., ... ..	.....	F. J. C. May, Town Hall, Brighton.
<b>ENGINEERING—</b>			
July 8	Longridge, near Preston—Sludge Pressing Plant ... ..	Urban District Council ... ..	T. S. McCallum, 52, Corporation-street, Manchester.
" 10	Chertsey—Steam Road-Roller ... ..	Urban District Council ... ..	J. F. Stow, Surveyor, Chertsey.
" 10	Settle—Double-lift Gasholder ... ..	Gas Company ... ..	J. Wauch, Sunbridge-chambers, Bradford.
" 10	Grimsby—Electric Lighting ... ..	Corporation ... ..	M. Petree, Borough Engineer, Town Hall, Grimsby.
" 10	Tynemouth—Reservoir ... ..	Corporation ... ..	J. Mansergh, 5, Victoria-street, Westminster.
" 10	Copenhagen—Iron work for Two Viaducts ... ..	Danish Ministry of the Interior ... ..	Oberingenieur der Staatsbahnanlagen, Reventlovsgade 10, Copenhagen V.
" 11	London, S.W.—Removal of Boilers, Boiler Seatings, &c. ... ..	London County Council ... ..	Engineer's Department, County Hall, Spring-gardens, S.W.
" 11	Southampton—Electrical Plant ... ..	Corporation ... ..	R. K. Linthorn, Town Clerk, Municipal Offices, Southampton.
" 11	London, S.W.—Centrifugal Pump ... ..	County Council ... ..	Engineer's Department, County Hall, Spring-gardens, S.W.
" 11	Southport—Refuse Destructor ... ..	Corporation ... ..	R. P. Hirst, Borough Engineer, Town Hall, Southport.
" 12	Shotts, Lanarkshire—Laying Pipes ... ..	District Committee ... ..	J. and A. Leslie and Reid, 72A, George-street, Edinburgh.
" 12	Christiana—Brake Vans, Trucks ... ..	Norwegian State Rlys Administration ... ..	Commercial Department, Foreign Office, S.W.
" 12	Halifax—Tanks ... ..	Highways Committee ... ..	R. R. S. Escott, Borough Engineer, Town Hall, Halifax.
" 13	Southwold—Works of Cliff Protection ... ..	Corporation ... ..	F. Ball, Borough-Surveyor, Town Hall, Southwold.
" 13	Plymouth—Gas or Oil Engines, &c. ... ..	Corporation ... ..	J. Mansergh, 5, Victoria-street, Westminster.
" 14	Pembroke, co. Dublin—Electrical Plant ... ..	Urban District Council ... ..	R. Hammond, 64, Victoria-street, Westminster, S.W.
" 14	Rathmines, Ireland—Electrical Plant ... ..	Urban District Council ... ..	R. Hammond, 64, Victoria-street, Westminster, S.W.
" 14	Brighton—Concrete Groynes, and Sea-walling ... ..	Town Council ... ..	F. J. C. May, Borough Engineer, Town Hall, Brighton.
" 14	Penarth, near Cardiff—Heating Apparatus ... ..	School Board ... ..	Seddon and Carter, Architects, Bank-buildings, Cardiff.
" 17	Chipping Norton—Waterworks Extension ... ..	Town Council ... ..	T. Mace, Town Clerk, Chipping Norton.
" 18	Truro—Railway ... ..	Great Western Railway Co. ... ..	Engineer, Paddington Station, W.
" 18	Warrington—Electric Lighting ... ..	Corporation ... ..	Preece and Cardew, 13, Queen Anne's-gate, Westminster, S.W.
" 20	Erremont—Electrical Plant ... ..	Wallasey Urban District Council ... ..	J. H. Crowther, Engineer, Great Float, near Birkenhead.
" 20	East Dulwich—Laundry Machinery at Infirmary ... ..	St. Saviour's Union Guardians ... ..	Kirkland and Capper, 17, Victoria-street, Westminster.
" 22	Glasgow—Electric Traction Plant ... ..	Corporation ... ..	J. Young, 88, Renfrew-street, Glasgow.
" 26	Christiana—Harbour Works ... ..	Harbour Management ... ..	Commercial Department, Foreign Office, S.W.
" 31	Rio de Janeiro—Lease of Railways ... ..	Brazilian Government ... ..	Commercial Department, Foreign Office, S.W.
Aug. 9	Kingswood Hill, near Bristol—Pumping Plant ... ..	West Gloucestershire Water Co. ... ..	E. D. Martin, Engineer, The Birches, Codsall, Wolverhampton.
<b>IRON AND STEEL</b>			
July 11	Brentford—Iron Escape Staircases ... ..	Union Guardians ... ..	Clerk, Union Offices, Isleworth.
" 12	Hamilton, Scotland—Cast-iron Pipes ... ..	District Committee ... ..	J. and A. Leslie and Reid, 72A, George-street, Edinburgh.
" 12	Spitalfields—Wrought Iron Hurdle Fencing and Gates ... ..	London County Council ... ..	Parks' Department, 9, Spring-gardens, S.W.
" 12	Bromley—Wrought Iron Fencing ... ..	London County Council ... ..	Parks' Department, 9, Spring-gardens, S.W.
" 12	Hackney—Wrought Iron Fencing ... ..	London County Council ... ..	Parks' Department, 9, Spring-gardens, S.W.
<b>PAINTING</b>			
July 7	Bradford—Painting and Colour-washing ... ..	Technical College ... ..	J. Nutter, Secretary, Bradford.
" 8	Romsey—Painting Fencing, Bridges, &c. ... ..	Rural District Council ... ..	J. Je vev, District Surveyor, Market-place, Romsey.
" 8	Glass Houghton, Castelford—Painting School ... ..	School Board ... ..	C. A. Phillips, Clerk, Castle-street, Castelford.
" 10	Wilsden, near Bradford—Painting ... ..	School Board ... ..	W. Neal, 9, Wellington-street, Wilsden, near Bradford.
" 10	Whitby—Painting School ... ..	School Board ... ..	E. Gray, Clerk, Whitby.
" 11	Smethwick—Painting Gasholders, &c. ... ..	Gas Committee ... ..	B. W. Smith, Gasworks, Rabone-lane, Smethwick.
" 13	Nottingham—Painting Public Gas Lamps ... ..	Lighting Committee ... ..	City Engineer, Guildhall, Nottingham.
" 15	Bristol—Painting, Colouring, &c., Schools ... ..	School Board ... ..	W. Adams, Clerk, Board Offices, Bristol.
<b>ROADS AND CARTAGE—</b>			
July 7	Pudsey—Street Works ... ..	Urban District Council ... ..	J. Jones, Surveyor, Council Offices, Pudsey.
" 7	Hertton-le-Hole, Durham—Materials ... ..	Urban District Council ... ..	G. G. Foster, Surveyor to Council, Hertton-le-Hole, R.S.O.
" 10	Leamington—Materials ... ..	Corporation ... ..	Borough Engineer, Town Hall, Leamington.
" 10	Arnold, Notts—Road Works ... ..	Urban District Council ... ..	J. R. Swift, Front-street, Arnold.
" 10	Kennington Park—Wood Paving ... ..	London County Council ... ..	Parks Department, 9, Spring-gardens, S.W.
" 11	Aspatia, Cumberland—Ashpaving ... ..	Urban District Council ... ..	F. Richardson, Clerk, Aspatia.
" 11	London—Artificial Stone Paving and Wood Paving ... ..	County Council ... ..	Parks' Department, 9, Spring-gardens, S.W.
" 11	London, S.E.—Materials and Works ... ..	Lewisham Board of Works ... ..	Surveyor's Department, Town Hall, Catford, S.E.
" 12	London—Wood Paving Works, and Road Materials ... ..	County Council ... ..	Parks' Department, 9, Spring-gardens, S.W.
" 12	Wood Green—Road ... ..	.....	Vigers and Co., 4, Frederick's-place, Old Jewry, E.C.
" 12	Woodbridge, Suffolk—Stones and Cartage ... ..	Rural District Council ... ..	J. B. Davison, Surveyor to Council, Woodbridge.
" 14	Bexhill, Sussex—Tar Paving, &c. ... ..	Urban District Council ... ..	G. Ball, Surveyor, Town Hall, Bexhill.
" 15	London, W.—Granite, &c. ... ..	Ealing Urban District Council ... ..	C. Jones, Engineer, Public Buildings, Ealing.
" 15	Barnet—Kerbing, Hammelling, &c. ... ..	Urban District Council ... ..	W. H. Mansbridge, 40, High-street, Barnet.
" 17	Sevenoaks—Leveling, Metalling, Tar Paving, &c. ... ..	Urban District Council ... ..	J. Mann, Surveyor, Council Offices, Arzley road, Sevenoaks.
" 19	Rochester—Road Metal ... ..	Corporation ... ..	W. Banks, City Surveyor, Guildhall, Rochester.
" 25	Sudbury, Suffolk—Granite ... ..	Melford Rural District Council ... ..	W. Carver, Surveyor, Long Melford, Suffolk.
<b>SANITARY—</b>			
July 10	Saltburn-by-Sea—Cast-iron Pipe Sewer, &c. ... ..	Urban District Council ... ..	G. S. L. Bains, Surveyor to Council, Milton-street, Saltburn-by-Sea.
" 11	Willesden—Brick and Pipe Sewers, &c. ... ..	District Council ... ..	O. C. Robson, Public Offices, Kilburn, N.W.
" 11	Barnet—Pipe Sewers ... ..	South Mimms Rural District Council ... ..	W. H. Mansbridge, 40, High-street, Barnet.
" 15	Dublin—Drainage Works ... ..	Corporation ... ..	S. Hart, City Engineer, City Hall, Dublin.
" 18	Epsom—Sewerage Works ... ..	Rural District Council ... ..	Beesley, Son and Nicholls, 11, Victoria-st., Westminster.
" 18	Wandsworth, S.W.—Pipe Sewers, &c. ... ..	Board of Works ... ..	The Clerk, Offices, East Hill, Wandsworth, S.W.
Aug. 2	South Shields—Sewer Dock, &c. ... ..	Corporation ... ..	S. E. Burgess, Borough Engineer, Chapter Row, South Shields.
<b>TIMBER—</b>			
July 10	London—Oak Fencing, &c. ... ..	County Council ... ..	Parks' Department, 9, Spring Gardens, S.W.
" 11	London—Clove Pale and Rustic Oak Fencing ... ..	County Council ... ..	Parks' Department, 9, Spring Gardens, S.W.
" 12	Bromley—Oak Fencing ... ..	London County Council ... ..	Parks' Department, 9, Spring Gardens, S.W.

## COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
July 8	London, W.C.—Electric Lamp Standards and Brackets ... ..	£10, £5 ... ..	Surveyor, the Vestry of St. Martin-in-the-Fields, Town Hall, Charing Cross-road, W.C.
" 18	Tendring—Sewerage Scheme ... ..	£21 ... ..	District Council.
" 27	Plumstead—Municipal Buildings and Public Library ... ..	£100, £75, £50 ... ..	Edwin Hughes, Clerk, Vestry Hall, Maxey-road, Plumstead.
Aug. 1	Halifax—Twelve Shops ... ..	£50, £25 ... ..	Barstow and Midgley, Solicitors, 8, Harrison-road, Halifax.
Sept. 1	Otley—Isolation Hospital ... ..	£30, £15 ... ..	C. V. Newstead, Clerk, Wharfedale Union Joint Hospital Committee, Union Offices, Boroughgate, Otley.
No date.	Dunpon, Argyllshire—Court House and Police Bldgs. ... ..	£30, £20 ... ..	M. Sinclair, Clerk to the County Council, Lochgilphead.
"	Beeston—Church and Sunday Schools ... ..	.....	C. Nichols, St. John's-grove, Beeston, Notts.
"	Sydenham, S.E.—Band Stand ... ..	£31 10s., £15 15s., £7 7s. ... ..	W. Gardiner, Secretary, The Crystal Palace Company, Sydenham, S.E.



## Property and Land Sales.

**HIGHAM PARK, WALTHAMSTOW.**—The very valuable freehold building estate of nearly 40 acres, known as Higham's Farm, beautifully situated contiguous to the well-known Higham's Park Woods and Lake (one of the prettiest portions of Epping Forest), adjoining Woodford Golf Links, and seven minutes from the railway station, the whole being admirably adapted for development as a residential building estate.

**MESSRS. KEMSLEY** will **SELL** the above by **AUCTION**, in One Lot, at the Mart, on **FRIDAY, JULY 21st**, at Two.

Particulars of **E. OLIVER, Esq., Solicitor, 1, Corbet Court, E.C.**, and of the **AUCTIONEERS, 41, Bishopsgate Street Within, E.C.**, and at Woodford Green and Romford. 1

**MONDAY, JULY 10th, 1899.**—**TELSCOMBE CLIFFS** LAND SALE, between Brighton and Newhaven.—160 choice Seaside Building Sites will be sold in a marquee on the estate at Half-Past Two p.m. Payments by instalments. A special train of first-class carriages will leave Victoria at 10.5 and London Bridge at 10, calling at Clapham Junction and East Croydon. Return tickets, including luncheon, 5s. may be had of the Auctioneers.

**MESSRS. HARMAN BROS.** have been favoured with instructions from the Cavendish Land Co. Limited, to **SELL** by **AUCTION** the Third Portion of the above estate, on **MONDAY, JULY 10th**, at **HALF-PAST TWO**.

Particulars and plans may be had of Messrs. **WARD, BOWIE, and Co., Solicitors, No. 7, King-street, E.C.**; of Messrs. **HOOKER and WEBB, 4, High-street, Croydon**; of Messrs. **FAIRBROTHER and Co., 26, Queen's-road, Brighton**; of the **CAVENDISH LAND CO. LIMITED, 68, Victoria-street, Westminster**; and at the **AUCTIONEERS' Offices, 75, Aldermanbury, Guildhall, E.C.**

**WEMBLEY HILL ESTATE** (near Park and Tower).—Sixty lots of very valuable **FREEHOLD BUILDING LAND**, free from tithe and land tax, in a rapidly-increasing, convenient, and accessible district near Sudbury (L. and N. W. K.) and Wembley Park (Met. Railway) Stations. Some of the lots having frontages to Harrow-road are suitable for shops, and others with frontages to a new road, well sewered and kerbed, afford choice sites for villa residences, which are greatly in demand. The property being ripe for development offers an opportunity for the creation of ground rents. Gas and water obtainable. Purchase money by instalments, with 10 per cent. deposit.

**MR. WALTER HALL** will **SELL** the above by **AUCTION**, at the **WILLESDEN JUNCTION HOTEL**, on **MONDAY, JULY 10th**, at **SEVEN** precisely.

Particulars of Messrs. **WOODBRIDGE and SONS, Solicitors, Uxbridge**, and **7, New-square, Lincoln's Inn, W.C.**; and of the **AUCTIONEER, 38, Chancery-lane, W.C.**

SALE DAYS for the Year 1899.

Messrs.

**FAREBROTHER, ELLIS, EGERTON, BREACH, GALSWORTHY, and CO.** beg to announce that the undermentioned dates have been fixed for their **AUCTIONS** of **FREEHOLD**, **Copyhold**, and **Leasehold ESTATES**, **Reversions**, **Shares**, **Life Interests**, &c., at the **AUCTION MART, Tokenhouse-yard, E.C.**

Other appointments for intermediate Sales will also be arranged.

Thursday, July 6	Thursday, Oct. 12
Thursday, July 13	Thursday, Oct. 26
Thursday, July 20	Thursday, Nov. 16
Thursday, July 27	Thursday, Nov. 23
Thursday, Aug. 3	Thursday, Dec. 7
Thursday, Aug. 10	Thursday, Dec. 14
Thursday, Sept. 21	

Messrs. **FAREBROTHER, ELLIS, and CO.** publish in the advertisement columns of "The Times," "Standard," and "Morning Post," every Saturday a list of their forthcoming Sales by Auction. They also issue on the first of every month a schedule of properties to be let or sold, comprising landed and residential estates, farms, freehold and leasehold houses, City offices and warehouses, ground-rents, and investments generally, which will be forwarded free of charge on application.—No. 29, Fleet-street, Temple Bar, and 19, Old Broad-street, E.C.

By order of the Executors of the late owner. The valuable **FREEHOLD PROPERTY** known as "Royal Dockyard Wharf" Lower Woolwich-road, S.E., together with the Fixed Plant and Machinery and Goodwill of the old-established **TIMBER and BUILDERS' MERCHANT'S BUSINESS**, as a going concern, and the LEASE of the adjacent Waterside PREMISES, known as "Mast Pond Wharf," will be offered for **SALE** by Public **AUCTION** in One Lot by

**MESSRS. BRADSHAW, BROWN, and CO.** at the **MART, Tokenhouse-yard, E.C.**, on **TUESDAY, JULY 25th, 1899**, at One o'clock precisely.

The Freehold Property (built by the British Government) has a granite embankment to the River Thames of about 400ft.; and a frontage of about 42ft. to Lower Woolwich-road, with three cartway entrances therefrom, and comprises an area of about 2½ acres. Two granite-paved slipsways, one 235ft. long, 53ft. wide.

"Mast Pond Wharf" has a frontage to the river of about 100ft., and contains an area of about three-quarters of an acre.

The Lease has an unexpired term of about seven years, at a rental of £150 per annum.

**JOHN BARLETT, Esq., Solicitor, 26, Bush-lane, E.C.**; Auctioneers' Offices, Billiter-square Buildings, E.C.; and Millwall, E.

**CITY OF LONDON.** City Improvements.—By order of the Corporation. To Brewers, Licensed Victuallers, Restaurateurs, and others. Offering an opportunity of securing one of the finest sites for licensed premises.

In the heart of the shipping, wine, Colonial, and corn trade centres.

The valuable Free LEASE of the important corner Building Site, together with the License thereto attached, now occupied by fully-licensed premises, the Mercantile, and the adjoining property known as 126, Fenchurch-street, E.C.

Having a frontage of about 36ft. 5in. o Fenchurch-street, and about 43ft. 2in. to Fen-court, which is now being widened, and will form an important thoroughfare, with an enormous pedestrian traffic, the whole covering an area of about 1,374 square feet. A free lease for sixty-five years will be granted at the moderate ground rent of £300 per annum.

**MESSRS. DOUGLAS YOUNG and CO.** will **SELL** the above by **AUCTION**, at the Mart, E.C., on **WEDNESDAY, JULY 12th, 1899**, at ONE o'clock precisely.

Plans, particulars, and conditions of sale may be obtained of the **COMPTROLLER of the CITY ENGINEER, Guildhall, E.C.**; or of the **AUCTIONEERS, No. 51, Coleman-street, E.C.**; 313, Clapham-road, S.W.; and Ilford, E. 1

**ANSELL and MALLOWS, Architectural** Draughtsmen and Quantity Surveyors, 21, Buckingham-street, Strand, W.C.

**R. I. B. A. EXAMS. PREPARATION**, personally or by correspondence, in three, six, nine, or twelve months' courses. Architectural Lending Library. Special three months' finishing courses.—For full particulars apply to Messrs. **HOWGATE and BOND, Associates R.I.B.A., Perchard House, 70, Gower-street, W.C.** (close to the British Museum).

**ARCHITECTURAL Institute, Society of** Architects, and Civil Service Technical Examinations. Preparation by correspondence, personally, or in residence. Seventeen first places.—**MIDDLETON and CARDEN, 19, Craven-st., W.C.** 1

**MASON'S CHISEL, STEEL, ½ to 1½** octagon, 12s. to 16s. per cwt.; Chisels, 6d. lb.; Best Cast Steel for Lettering Tools, &c., from 4in., 4d. lb.—**E. DEALEY, Moore-street, Sheffield.** 4

**QUANTITY SURVEYOR wishes to SHARE** occasional use of OFFICE with an Architect; Strand or Holborn preferred; state terms, which must be low.—Box 1116, Office of BUILDERS' JOURNAL. 1

## APPOINTMENTS VACANT.

The charge for Advertisements under this heading is 1s. 6d. per insertion not exceeding four lines, and 6d. per line afterwards, prepaid. Three insertions may be had for the price of two.

**CARPENTER and JOINER.—WANTED**, as General Shop Foreman, a competent MAN to take entire charge of Carpenters and Joiners. Must be used to machinery, staircases, handrail, and good-class joiner's work.—Apply, giving full particulars of capabilities and salary required, to **FRANCIS THODAY and Co., Ltd., Cambridge.** 1

**WANTED** by a leading firm of builders in the West of England, **FIRST CLASS GENERAL FOREMAN**; One accustomed to Terra-Cotta preferred.—Write, stating salary required, to "Builders," care of Messrs. Deacons, 154, Leadenhall-street, E.C. 2

**ARCHITECT and SURVEYOR'S ASSISTANT REQUIRED.** Well up in quantities and specifications preferred.—Apply by letter only, stating age, salary and qualifications, to **H. F. G., 41, High-street, Newport, Mon.** 1

## APPOINTMENTS WANTED.

The charge for Advertisements under this heading is 1s. 6d. per insertion not exceeding four lines, and 6d. per line afterwards, prepaid. Three insertions may be had for the price of two.

**YOUNG ARCHITECT, A.R.I.B.A.,** ASSISTS in the PREPARATION of DRAWINGS, TRACINGS, &c., at his own Office. **G. SCOREE, 28, Newman-street, W.**

**QUANTITIES** prepared, specifications written, works measured, and variations adjusted by reliable London Surveyor. Over twenty years' experience. Special terms by arrangement.—"Surveyor," office of the BUILDERS' JOURNAL. 26

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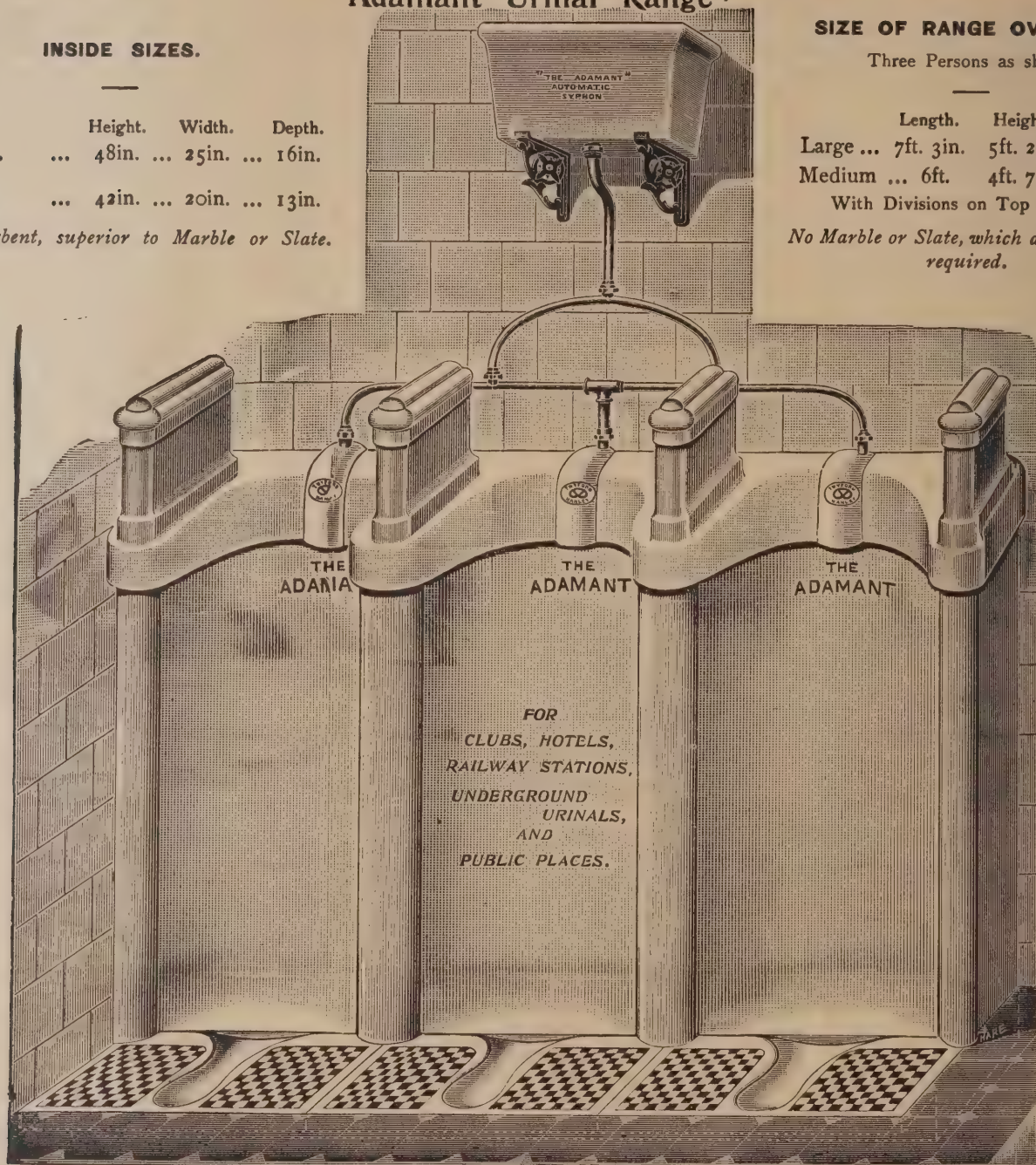
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JULY 12, 1899.

No. CCXXXI.

## An Architectural Causerie.

### Is the Amateur an Advantage to Art?

Is the amateur's increasing pre-occupation with art

and art matters an advantage or not? In considering this question, the effect of his competition with the artist must be left on one side, though that is a considerable factor since it may lessen the encouragement given to the professional artist to attempt great things, and so indirectly affect the matter, for it is the effect upon art and not upon the artist that is in question. At first sight one would say that it must be advantageous. In photography, which its practitioners claim to be more or less an allied art to painting, and which the practice of many painters appears to imitate, the work of the amateur is often better and more artistic than that of the professional; in literature, too, it is not always the man whose profession it is to write who produces the most charming and striking stories, or expresses himself most beautifully, and the amateur in art is free from many necessities which constrain and hamper the professional. For instance, the question of whether his work when finished will find a market, need never occur to him, and he may give himself with a quiet mind to producing the absolute best, as far as he is capable of so doing; and if he should wish to express his thought in a rich and expensive material, or require costly things to copy or to use as suggestion, it is easy for him to procure them since he does not have to consider whether the expense is justifiable. And while every professional man's imagination tends to become case-hardened and to run in certain grooves, the amateur's fancy, being quite unfettered by necessities and less staled by constant use, should be fresher and less conventional, so that the charm of unexpectedness might reasonably be looked for in his conceptions; and he should be the inventor, whose ideas might be taken up and fruitfully worked out by others. On the other hand, his lack of technical training is likely to lead him to attempt things which are beyond the possibilities of the material which he is employing, and to conceive of effects in one craft which can only be produced by the combination of several; and even when the imagination has not conceived such impossibilities it is often the case that his training has not been sufficiently severe to enable him

to fully express what he desires, so that his work may fail of the impressiveness which it would have if the execution did not lag behind the conception, and of the admiration which under happier circumstances would be its meed. For too much liberty sometimes renders the imagination sterile, and the craftsman who knows his craft and the material in which his designs are to be executed often finds stimulus and suggestion in the very limitations which to the amateur or the half-trained man are vexatious and hampering. When the amateur has given sufficient time and attention to any craft to

analysis to have its roots in some design made centuries ago by some unnamed craftsman, and to be merely a fresh development from one of those unnoticed impressions which the sensitive brain of the observant man is continually recording with automatic precision. And this no doubt is the reason of the curious feeling which often comes over the designer, when, having made a thing which he recognises to be good, he is beset with the impression that he has seen it before somewhere, an impression which is sometimes so strong as to make him doubt his own originality.

S. S. G.



CAWSTON CHURCH  
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NAVE ROOF OF CAWSTON CHURCH, NORFOLK. DRAWN BY J. HERVEY RUTHERFORD.

enable him to master its difficulties and gain the suggestiveness which underlies them, his work is indistinguishable from that of the professional, and in fact he becomes professional to all intents and purposes, save that he does not, or at least did not, compete in the market. The extravagances of amateurs are occasionally suggestive to the trained eye, but at this late period of the world's history it is exceedingly difficult to conceive anything which shall be at the same time new and good. Plenty of apparently new things appear, but anything which strikes one as good is generally found on

### Cawston Church, Norfolk.

THE illustration on this page is a sketch of the nave roof from the roof loft of Cawston Church, Norfolk. This roof was originally painted, but few scraps are now left to show it. The sketch was one of a number by Mr. J. Hervey Rutherford, of various subjects, which were submitted this year for the Pugin Studentship prize granted by the Royal Institute of British Architects, and were placed first by the examiners. Others of the series are illustrated in our issues for February 8th and 22nd, and further sketches will appear in future issues.



## Architects and Engineers.

THE association of architects with engineers is more necessary now than ever.

The old builders were essentially "all round" men; construction, artistic design, utility, sculpture, decorative detail—nothing escaped their eye, nothing was too large or too small, too prosaic or too poetical, for them. Such a unity of art cannot be expected now, but co-operation in the arts is indispensable, and Pugin's theory of architecture holds good for all time; we must build "ornamented construction, not constructed ornament." Our older engineers, the men who founded the great profession of civil engineering, though not aiming at the æstheticism of the Classic or Gothic builders, had yet something of their spirit; they did not separate use from beauty; in their designs they had some regard to surrounding structures. The rigid separation of professions is becoming very injurious to London; what sort of designs should we have had if it had prevailed when the two finest of the Thames bridges were built? Here are two simple effective designs both due to architects: in our day they would probably have been entrusted to engineers; would the result have been as satisfactory? The truth is that engineering should not be allowed to elbow out architecture; better far that architecture should extend its influence over engineering. The elder Rennie gave London Waterloo Bridge, a monumental structure in which he showed himself to be both architect and engineer; with nine equal elliptic arches, each of 120ft. span and Doric columns in pairs, though not strictly coupled, flanking every pier. The whole effect is exceedingly grand, and drew from Canova the remark that it was one of the three things which were worth coming to London to see, the other two being Somerset House, with which it combines, and Wren's church of St. Stephen's, Walbrook. Sir John Rennie, his son, designed London Bridge, with its five arches, also elliptic but unequal, the centre arch of 152ft. 6in. span, the two next of 140ft., and the two outer ones of 130ft.; severely simple, and with a certain business-like plainness not unsuited to "the City;" at either end a fine tower enters into the view—St. Magnus with its light lantern, cupola, and spire, on the Middlesex shore; St. Saviour's Gothic pinnacles on the Surrey side. These two great bridges may be contrasted with Blackfriars Bridge, which lies midway between them; more ornate, but not more telling, with red granite columns, capitals representing Thames waterfowl—an excellent piece of detail—and a cast-iron balustrade; at either end are immense pedestals for statuary which, of course, remain untenanted. It seems incredible that almost immediately adjoining it to the east a railway bridge of the most commonplace design has been allowed to raise a hideous network of lattice girders, and immediately beyond it another whose design is no better; the view of the bridge being quite ruined, and a fine architectural vista reduced to chaos. Surely here was a case of "how not to do it." Parliament and the Corporation of London must take the blame for so shameful an injury to London's river; the architects and engineers, if left to themselves, could have struck out something better than this. It certainly exemplifies the evil effects of treating use and beauty as two separate and even hostile influences; no vast collections in museums, no "Science and Art Department," can atone for the public injury inflicted by this ridiculous fiasco, to which Europe presents no parallel.

J. C. P.

## On Reflection.

### "Overloading" Quantities.

SOME rather queer proceedings were brought to light in the course of an action decided last week at Liverpool. The Tenth Board of Guardians sought to recover from Messrs. C. O. Ellison and Son, architects, of Liverpool, the sum of £1,563 for alleged professional negligence. The case occupied the attention of Mr. Pollock, Q.C., the official referee, for five days, but the main facts may be briefly stated. Messrs. Ellison were employed by the Board of Guardians to carry out a design they had submitted in competition for the extension of the infirmary buildings. Colonel Ellison, the principal partner in the firm, in accordance with his usual practice, made out his own quantities, and on the basis of these quantities tenders were invited, and that of Messrs. Kelly Bros. for £34,909 was accepted. The quantities, it was alleged, were "overloaded" to the extent of £1,065, so that the Guardians had to pay that sum in excess of what they would have paid had the quantities been properly taken out. Moreover in the carrying out of the work cheaper methods of construction were adopted; instead of the glazed brickwork mentioned in the quantities which was to be employed for lining corridors, kitchens, and sculleries, the defendants allowed the contractors to use to a great extent salt-glazed bricks and plastering; yet no deduction was made in the certificates, the Guardians being charged with the full amount. In a second contract between the Guardians and Messrs. Kelly to build three additional pavilions for the infirmary, it was alleged that certain brickwork mentioned in the bills of quantities was not carried out, although paid for. The figures of the clerk of works showing that the quantities were overloaded by £1,065 were not disputed by the defence, and the official referee, holding that such overloading constituted gross negligence, gave judgment for the plaintiffs for £1,000 and costs, their counsel having intimated that his clients would be satisfied with that amount.

### An Explanation and a Moral.

MR. ELLISON'S explanation of his method of taking out quantities was that he left a margin for contingencies, taking the measurements more fully than was absolutely necessary, because from long experience he found it in the interests of his clients to do so. If quantities were taken out net, the builders, he said, to cover their risk, generally put on a price varying from 5 to 10 per cent.; but if builders knew there was a margin in the quantities they would put the price very much lower. The defence quite failed to prove any such custom in the profession, and it is difficult to see how such a plan can be defended. In the present case the tender of the builder's was admittedly £1,065 more than it would have been had the quantities been properly taken out; we do not wonder therefore that the official referee refused to admit that such an arrangement could be other than inimical to the interests of the client. It is only fair to Mr. Ellison to say that no charge was made against him of any fraudulent intention in the matter. But it is pretty obvious that, if quantities are to be subject

to a fictitious inflation to cover contingencies the door is opened for all manner of shady transactions; an unscrupulous man—and no profession is free from such—might be inclined to increase the quantities in order to increase his own commission, or to enter into a dishonest collusion with the builder for the sharing of profits. Were the profession generally to act according to Colonel Ellison's theories, the architect would be almost inevitably an object of suspicion to those who employed him. In the course of the action comment was made on the position occupied by the clerk of works, Mr. Hallard, who seems to have been appointed not by the architect, but by the guardians; it was suggested that the gentleman acted as a sort of detective to watch the architect and the builder. We cannot see in the evidence much ground for such a suggestion; Mr. Hallard's relation with the architect and the guardians were certainly somewhat unusual, but he seems to have acted with perfect fairness and propriety. Our point is, however, that if architects generally were to condescend to such questionable practices as those admitted by Messrs. Ellison, there might grow up a demand on the part of clients, especially of those responsible for public buildings, that the clerk of works should be independent of and to a certain extent the overseer of the architect. Such a state of affairs would be intolerable to any self-respecting man; the architect must be, like Caesar's wife, above suspicion.

### Prometheus Unbound.

"I CANNOT be fettered by an official position," said Mr. Walter Crane the other day in reply to an interviewer. We are not in least surprised to hear it; we always thought Mr. Crane was that sort of man, and were therefore neither surprised nor disappointed to learn that he had "behaved as such," and resigned his position as principal of the Royal College of Art. When Mr. Crane accepted the position, not without reluctance, he fondly hoped to effect some much-needed reforms. He hardly gauged, apparently, the strength of the forces that make against progress at South Kensington. He had theories about the functions of a national art school, which must have seemed to the authorities quite revolutionary. He actually wanted to introduce some element of practical utility into the studies; if he had his way the students would be trained to become decorative artists, not merely drawing masters. One step in this direction he has succeeded in taking by the establishment of a class for stained glass work. His brief tenure of office therefore has not been altogether barren of result in the direction of reform, and although it would no doubt take several centuries for the South Kensington authorities fully to assimilate his ideas, there is no knowing what progress might be made if only a succession of reforming principals could be assured. Mr. Crane has no doubt effected a stirring of the dry bones, and it is to be hoped his successors will see to it that the faint signs of a new spirit are not allowed to flicker out again. Mr. Crane's resignation is, no doubt, a loss to the students—though he has not altogether severed his connection with the school, nor ceased to be interested in its work—but to the world of Art at large it is undoubtedly a gain, as it allows Mr. Crane, now that he is freed from the irksome restraint of official harness, to devote more time to those literary and artistic labours in which his genius has free scope.



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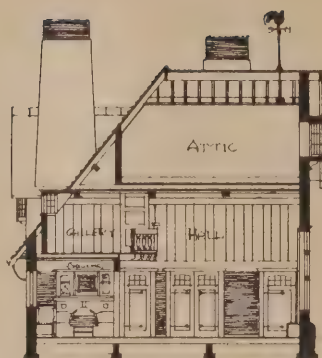
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DESIGN FOR A COUNTRY GENTLE-  
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Scale 1:2245 10 15 20 Feet

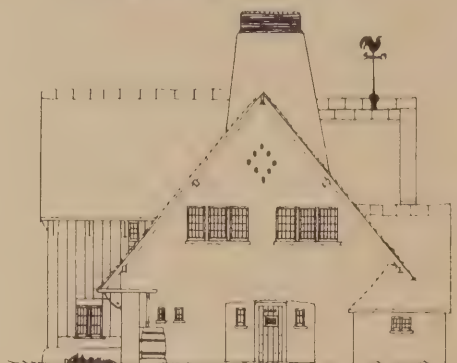
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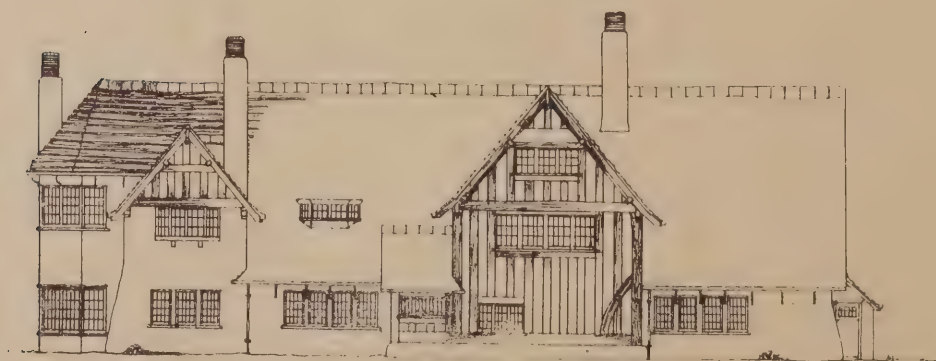
ELEVATION TO W.



BACK ENTRANCE.



GARDEN FRONT.



ENTRANCE FRONT.

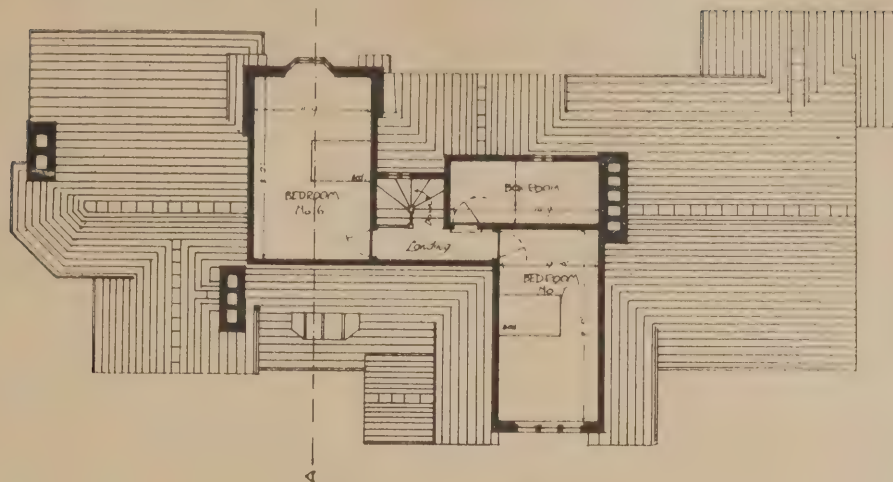


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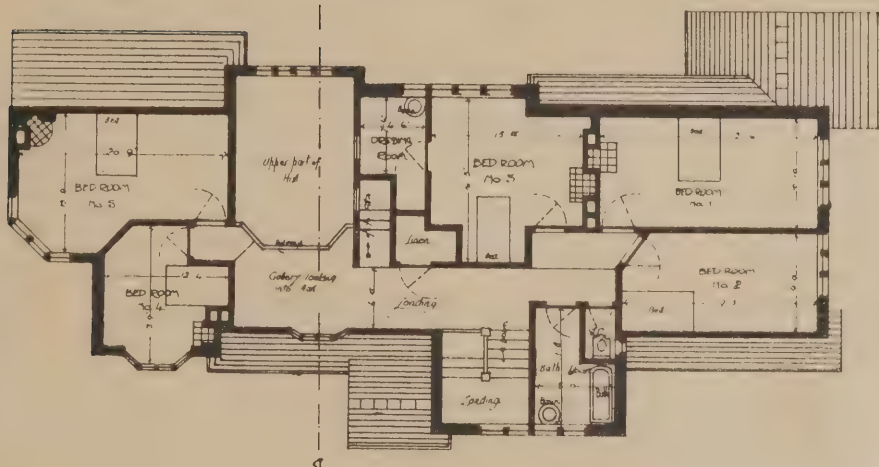
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PLAN OF FIRST FLOOR.



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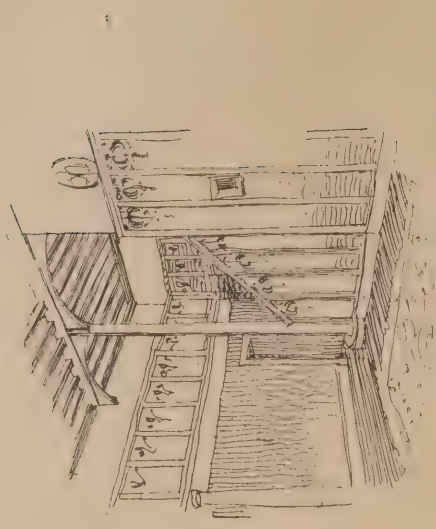


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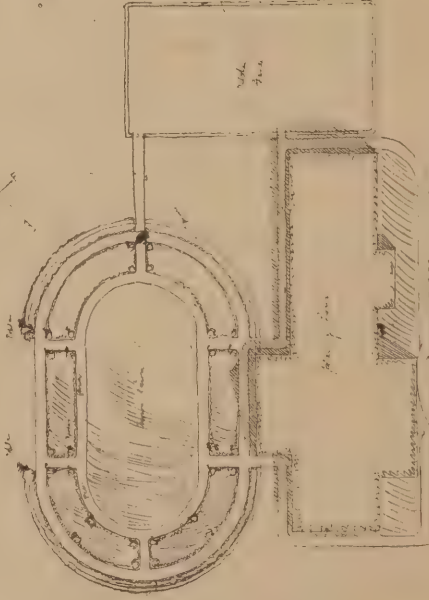
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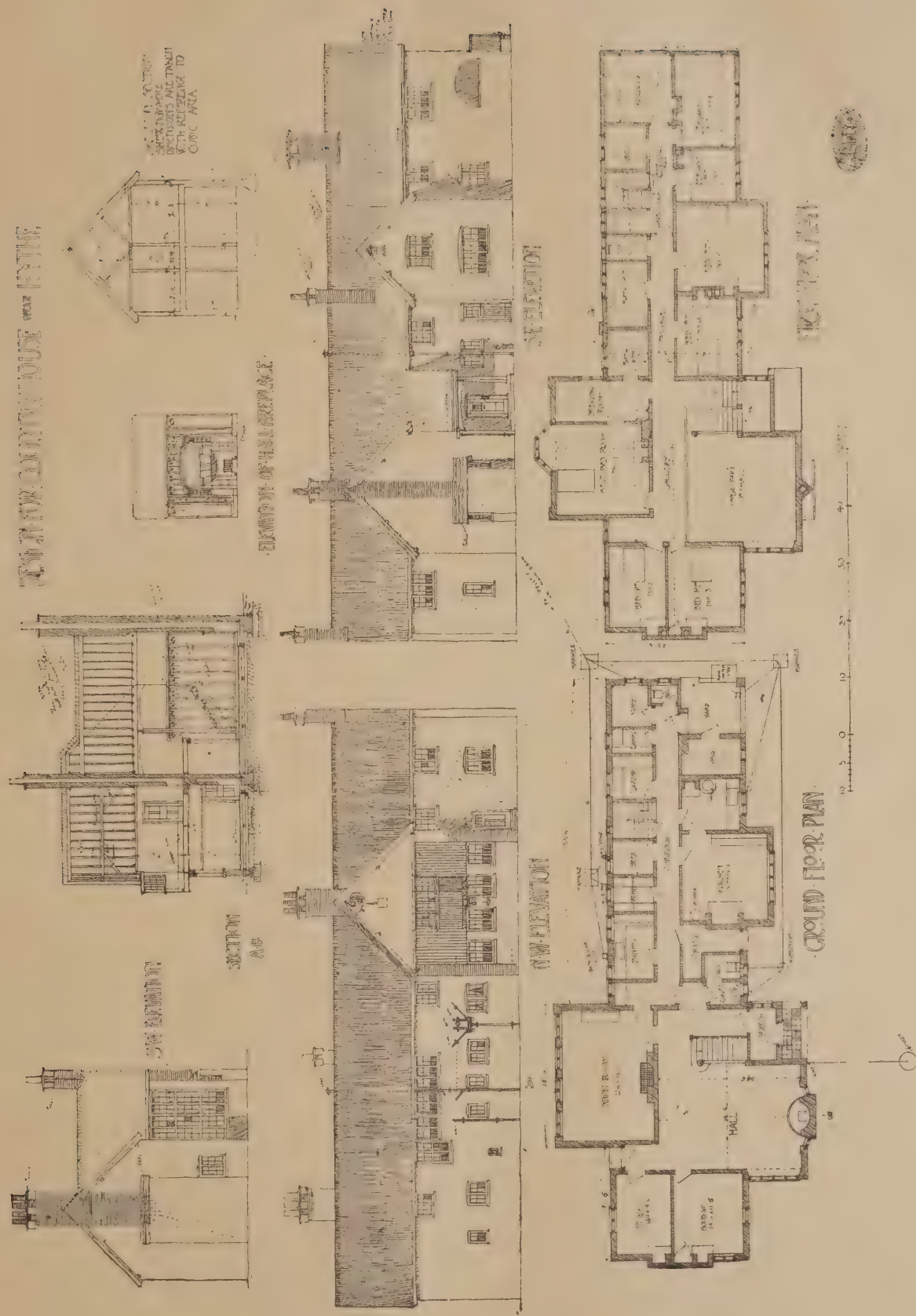


PART OF GARDEN, ETC.

DESIGN FOR COUNTRY HOUSE NEAR HYTHE









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THE SECOND PREMIATED DESIGN. BY HARRY PERCY SHARPE.

## "BUILDERS' JOURNAL" COMPETITION.

### THE DESIGNS REVIEWED.

By EDWARD S. PRIOR.

ONE HUNDRED AND THIRTY-FOUR drawings were brought before me, and I have been asked to make a general report upon this "architectural output," as well as to select what appeared most likely to meet the special demand for which this competition was instituted. The immediate observation must be upon the number of competitors who would seem in feeling or attainment unfitted to put upon paper the idea of a common-sense house. Some seventy drawings, about half of those competing, had immediately to be set on one side; yet, if put upon the site and required to build, instead of to design, one cannot believe that so many would have failed to create something possible. One must, presumably, lay it at the door of the highly artificial conditions of modern architecture that here some seventy professing architects have been found spending each a week of his time in elaborately recording absurd or impossible "designs" for what is a commonplace necessity of life—a simple home to be lived in.

The particular conditions indicated for the guidance of this competition no doubt set a problem of some difficulty, but there was no excuse in them for sending in plans that must cost £10,000; for putting in drawing-rooms and morning-rooms that were not asked for; for arranging great conservatories and aquariums; for magnificent and costly decorations; extravagances, which were most often accompanied by impossible arrangements, ignorant constructions, and general proofs of incapacity to "design." Yet not a few of these seventy, who had immediately to be set aside, were neat draughtsmen, who had expended themselves on many sheets, stretched and framed; upon printings of titles that must have taken many days; upon perspectives of elaborate perversity. Whereas one sheet of plans and elevations with pencil writing was all that was needed to express the idea of the competition—and the idea was the only thing in question! One may say that practically in no case has the perspective been of service in recommending the competitor—in many cases it has emphasised the vulgarity of his conceptions that lay dormant in the elevation; or has thrown a doubt upon the plan by the technical deceit of its picturesque representation.

The given conditions of this house-building made an interesting study; there were to be met special difficulties of plan, of aspect, and of cost. There was asked as to plan, that there should be a "sitting-room hall," two storeys in height, and this in a "long, narrow," and therefore, at the cost, low house made a difficulty, for the required number of bedrooms could not be got directly over the ground floor,

which the accommodation prescribed, and the cost strictly limited. Extravagant ground-floors and passage halls were necessarily ruled out as not attempting to solve the problem; but there were devices of value in putting a best bedroom suite on the ground, or in making the servants' bedrooms come among the offices. Since, however, these seemed to need a special adaptation of habits, which it would be unsafe to assume, preference has been given to the idea of taking some of the bedrooms into an attic, as long as this was managed to enhance and not disturb the desired effect of a "long, narrow" house.

Secondly, as to aspect, it was asked that the principal rooms should look north-west, thus reversing the best arrangement. But since a good aspect is a quality more valuable to a house than any prospect, it has been judged that light and sun must be provided for the sitting rooms as well as this north-west view. The arrangements have therefore been preferred which set the boudoir and study to the south-west and the offices to the north-east, where the drainage could go with least expense; and a twisted ground-plan to secure at once all these advantages has been taken as an eccentricity justified by its practical success.

Thirdly, the cost has been stated as wished for between £1,500 and £2,000. No competitor has sent in a plan that could on any possibility of good building have been completed in the neighbourhood of Hythe for such a sum. It is stated by many that they could build what they propose for 6d. a cubic foot. This is an assertion of such practical ignorance, or insincerity, that as arguing ill for the future practice of the competitor, it has been judged to rule him out. The price of building in the south-east has risen some twenty per cent. in the last three years, so that a country house there can now scarcely be built for 9d. a cubic

foot, and for this price it must be planned and constructed with the knowledge of a practical economist. The condition of cost has therefore been taken to imply the absence in this house of all costly extravagance, the ruling out of all expensive "features," and the provision of simply ordinary good building and ordinary house-fittings. But it is not good building to use deal as external timber work, and solid oak would be found very costly—not cheaper than brick, as some competitors seem to assert. Nor can thatch be assumed to be less costly than tiles. The drawings have, therefore, been judged as they show a practical knowledge of the economical use of their materials. And since for this house the lowest price that could be suggested is £2,500, any plans that come within 10 per cent. of that figure, at 9d. a cubic foot, have been taken as reasonable.

Besides the above three governing conditions there were given suggestions by the employer as to the sort of house he would like—that it should be "long and narrow," of "oak and thatch," with any or every "kind of angle and window," and fourthly, with an individuality in its design which should distinguish it. Such suggestions as these are of great value to the architect, since out of such material the artist in building creates his art. But such instructions must be taken with the common-sense view of the employment of an architect—that he is valuable to his employer, because he has a taste trained to deal with such suggestions as the above, and within the limits of that taste produces an individual creation. Many of the competitors, instead of this sane view, have read in these instructions a free invitation to torture building into "effect" and introduce the "bits of design" that magazines illustrate. Indeed, many of the specifications read as if they were the fashionable puffs of some fashionable architect, where, as ground-bait for clients, "cosy," "quaint," and "mediaeval," jostle one another in every sentence.

One competitor drops into poetry, but adds that he will pay strict "business attention to every detail, if selected!" Such literary expressions have been taken as harmless effervescence, but any signs of "cosiness" or "quaintness" or "mediaevalism," if detected in any plan, have ruled its author out.

Judged upon the above principles of criticism, I have placed the drawings with the mottoes "Yew," "Eros," and "Alfo" as best meeting the conditions. There are faults in all three, but they are such as could be remedied without prejudicing the main ideas. The first has cleverly managed the angle or twisted plan, and the provision of extra bedrooms in a tower, though there are some defects and superfluities in arrangement. A common-sense and workman-like use of oak and thatch distinguishes his construction, and his house could be built for about £2,500. So too could that of Eros, who makes a successful use of timber and tile



THE SECOND PREMIATED DESIGN. BY HARRY PERCY SHARPE.



and gives a compact plan though somewhat marred by the fashionable "nookiness." Alfio, out of thatch and timber, shows a successful idea, but his plan needs overhauling, and as drawn it would cost £2,750. Its suggestions of internal detail are happy. [The design of "Yew" was published in our last week's issue; those of "Eros" and "Alfio" are given in the present number.—Ed.]

The design of "Quex" would be still more costly, but the notion of his plan is good, and his elevations could be much improved by simpler treatment. "Caractacus" shows a sensible oak construction used for a simple and pleasant exterior, but inside his boudoir is all "nooks" and some have strayed into the kitchen, rendering that necessary apartment unusable. "Torso" and "Martello" both have sent attractive and sensible ideas, which might easily have been placed first, if they had been more worked out to reduce their cost. "Pippa" has failed in not making his hall sufficiently a sitting-room. "Thislixum," "Ogee," and "Try" were other designs of interest selected from a class of some twenty-five, which included, besides the above, "Christian," "Quercus," "Barbara," "Gordon," "Simplex," "Thatch I," "Cypress," "Long and Low," "Build," "Red Roof," "Heather," "Black Spot," "Habitable," and

sandfaced bricks and small round oak base and polished oak floor, quaint low-raftered ceiling and low settle, carrying the eye along to the cosy corner, with its stone fireplace and beaten copper hood, is cheerfully and well lighted from four-light windows. The plain wall on the right would form capital space for exhibiting pictures. On proceeding further into the hall, you get a quaint old English effect, with the oak timbers and plaster above the red brick dado and plain architraves giving a substantial and old world air to the hall. Above is the gallery, really forming part of the bedroom corridor, and so situated that it would make a capital music gallery should the occasion arise, and yet it throws a considerable addition into the hall. The hall is well and cheerfully lighted from both ends, and is so planned that tea or breakfast could easily be taken in the ingle nook.

THE DINING ROOM is a well proportioned room, 22ft. 11in. by 16ft. 6in., conveniently placed in relation to the kitchens, and in the event of a large gathering could be used in conjunction with hall and boudoir by throwing open the double folding doors, thus opening up the delightful vista to 56ft. 6in. I would propose eventually to panel dining-room up to a height of 6ft. in dark oak, with plaster frieze and a very small plaster cornice, but the panelling

THE LADY'S BOUDOIR is a quaint room with octagonal end. A pretty little fireplace could be formed on one side of octagon with white marble sides and copper hood.

THE GARDEN is reached from the hall under a spacious verandah, floored with quarries, which would make a delightful lounge in the evening.

THE BEDROOM PLAN is reached by a wide staircase of oak, well lighted by half landing, and the bedrooms open out on to a wide, straight corridor, the end being balustraded to form gallery to hall, the ceiling to be low with exposed joists.

A DRESSING-ROOM is provided in connection with bedroom No. 3, and a wooden hinged window opens into upper part of hall, which would be useful and quaint.

BEDROOMS NOS. 4 AND 5 are *en suite*, and No. 4 would be convenient as a child's room, as it would be under close supervision of anyone in No. 5. No. 5 is a cheerful, airy room for an invalid, and a nurse could occupy No. 4.

THE ATTIC is reached by a small stair off landing, which is shut off with a door.

MORTAR to be one part freshly burnt grey-stone lime from Bredon to three parts clean sharp sand.

SLEEPER walls where necessary.

DAMP COURSE to all walls of slate in cement. Build stout hoop-iron where required at level of first floor and at all plates.

POINT WALLS OF LARDER, w.c., coals, and whitewash same.

FARGE AND CORE ALL FLUES with cow dung. 20-gallon boiler in kitchen. Sink of glazed stoneware with wood drainer. 9in. by 3in. air bricks under all boarded floors. All window cills to have lead drip.

UNDERGROUND CISTERN for rain water, under coals, lined with cement, and to have overflow connected to drains.

WOODWORK.—All constructional timbers, except those exposed to view and wrought, to be of spruce.

Joiners' work, except where otherwise specified, best red deal.

All rafters, studs, and joists 16in. centre.

Dining-room and hall 5½in. by 3in. red deal on sleeper walls.

All joists showing in hall and dining-room, &c., to be 5in. by 4in. red deal, wrought with jack plane only, and to be morticed into beams where necessary. Other joists 7in. by 2½in. spruce, and cross-bridging where possible. All beams, where necessary, either 9in. by 6in. or 9in. by 9in. deal, jack planed.

Staircase and gallery in hall, and all internal and external half-timbering, to be of oak. Oak newels to staircase. Roof to be formed of wall plate 4½in. by 3in. red deal; purlins, 7in. by 4in.; gutter board, 1in.; flashings, ½in.; valleys, 11in. by 2½in.; ceiling joists, 3in. by 2½in.; rafters, 4in. by 2in.; notched and spiked to wall plate.

Upper floors, 6in. by 1in. red deal; lower, where not otherwise stated, to be 4in. by 1in. red deal.

Windows in general to be formed of 5½in. by 3in. frames; 3in. oak cill to have projecting lead; cill under 2in.; sashes to open outwards.

The whole work to be finished in a tradesmanlike manner from ½in. details and full-size drawings.

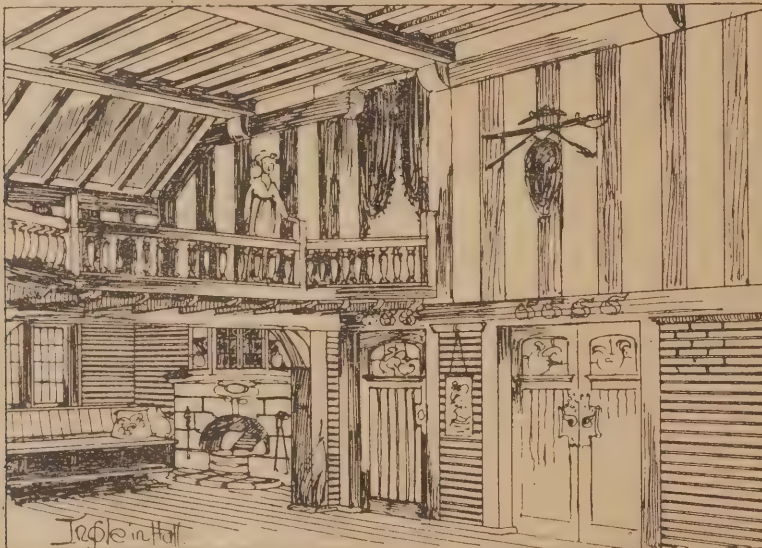
### THE THIRD PREMIATED DESIGN.

The following is the description and specification accompanying the plans submitted by the winner of the third premium, Mr. William Mitchell ("Alfio").—

These drawings have been prepared with due regard to the conditions of competition. It has not been thought advisable to make too many corners, &c., such as ingles to the fireplaces, and a lavish amount of oriel windows, because with the accommodation given in the conditions, one can only arrange the rooms in a most comfortable manner; also with the idea of having the elevational construction as simple as possible, so that in cubing up the contents it may come within the limit of £2,000.

The various rooms, hall, dining-room, study, boudoir, have been arranged on plan with respect to their aspect.

The hall has been planned as a means of



THE SECOND PREMIATED DESIGN. BY HARRY PERCY SHARPE.

"Casement." These last, though all with merits, were judged upon some point or other to have strayed too widely from the common-sense of the conditions. Another batch of some forty were considered as not quite reaching the level of the above, and, finally, some seventy seemed convicted of some patent extravagance, which might have occurred to their authors as such.

### THE SECOND PREMIATED DESIGN.

The following is the description and specification accompanying the plans submitted by the winner of the second premium, Mr. Harry Percy Sharpe ("Eros").—

The drawings show a quiet design based on the old half-timber houses of the mediæval times, and, in accordance with requirements, is kept as low as possible, the overhanging eaves in most cases coming down to bedroom floor level. It is proposed to treat the exterior in stucco all over, with wood timbering of oak dressed with oil and left to gather a natural colour from atmospheric effects. All exposed brickwork to be built of 2in. sand-faced bricks, with ½in. joints built Old English bond. The roofing is shown on the drawing as tiles, but thatch would suit the design equally well. A sundial is shown on the south-west elevation.

THE PLAN.—On entering through the cosy porch, which is provided with a seat and could be used as a shelter from the morning sun, and, looking to the left, a very pretty and cosy effect would impress you.

THE HALL, with its rich red dado of 2in.

could be left out for the present, and dado and base moulds fixed, and the dado filled in with strained canvas. There is a cosy ingle which could be successfully treated with a beam and substantial wood fireplace and old Dutch tiles, the fireplace itself being constructed with an exposed brick arch. The ceiling to have exposed joints as in the hall.

THE KITCHENS are arranged in a handy yet private position with respect to the rest of the house. Instead of providing a scullery and kitchen I have provided a best kitchen and a rough kitchen. The best kitchen could be used as a cheerful breakfast-room as it has a south-east aspect, and in the evening could be used as a servants' sitting-room. The rough kitchen has a cool aspect and has a quarry floor and is provided with a sink and copper. Both kitchens are provided with a range. The back door is so arranged that a view of anyone there is obtained from either kitchen.

THE LARDER is very cool, as it is lighted from north-east and has a quarry floor and quarry settle.

THE COALS can be got under cover from back porch which is paved with 2in. quarries in cement.

THE CHINA PANTRY is provided with sink and quarry floor, and is conveniently situated with regard to dining-room and kitchens.

A CLOAKROOM AND LAVATORY with quarry floor is arranged under the stairs near the front entrance.

THE STUDY has a cheerful aspect and is quietly situated; it is entered off the hall.



communicating with other rooms; but, at the same time, the fireplace end of hall is free from any of this crossing, also being protected from the draught.

The stair and lavatories have been placed in a convenient position for the entrance and the rooms on ground floor.

Thatch has been chosen as the roof covering, seeing that it is cheaper, and gives a more picturesque effect to the elevations; the roofs are kept simple to avoid the necessity of lead valleys, &c.

WALLS.—The walls are rough casted, so that the bricks need not be specially coloured. The number of bedrooms in the conditions is in excess of the accommodation on ground floor, so that in order to provide five good bedrooms and three servants' bedrooms on first floor it has been found necessary to make a covered yard, and build over the coal-place, which is all included in the cubing up. At the same time this yard would be found a convenience in wet weather. Note that the coal-place would only be about 5ft., the wood being stalked in the remaining 4ft.

GARDEN AND APPROACH.—The garden and laying out of the grounds is not included in the £2,000.

NOTE ON ESTIMATE.—The estimate is based at a very low price, being 6d. per cube, so that the details would be carried out in the simplest form. The woodwork would all be deal, and the stonework would only be used for sills, and these would only be 3in. thick. In the cubing the dimensions have been taken from end to end, and every projection with height taken from the bottom of foundations to half-way up the roof. This includes the hall where there is only one floor.

WALLS OVER ONE ANOTHER.—All the walls will be brick, being nearly always built from ground right up to roof.

#### Notes on the Materials to be Used.

DIGGING, ETC.—The ground would be excavated for trenches, drains, etc., also the 6in. of surface of ground would be removed from the site of house to a place directed by the architect.

CONCRETOR.—The concrete for trenches would be composed of one part of Portland cement to seven parts ballast and broken stone or brick as directed.

A similar layer 6in. deep would be placed under all the wood floors.

A layer 6in. thick would be placed under paved or tiled floors.

DRAINAGE.—The drains would be laid to comply with local by-laws, and be tested by water when completed. The drains would be of the best tested stoneware socketted pipes, laid to even and regular falls, with manholes for inspection with cast iron sealed cover. Fresh air inlet and vents taken up to ridge of roof. If the drains are to be connected with a main drain there would be an inspection chamber with special trap, fresh air inlet, &c.

All pipes except w.c. pipes will discharge into open gullies and be trapped off from the main drain.

CONCRETE BED.—Portland cement concrete bed to all soil drains.

DOWN PIPES.—R.W.P. at entrance 3in. C.I. with head in lead; 1in. lead R.W.P. from oriel above dining-room; R.W.P. from end gable to water tank.

EAVES GUTTER.—Half round eaves gutter, with maleable iron brackets fixed to rafters.

#### Brickwork.

The bricks would be hard, well burnt, with a metallic ringing sound when struck. Fair surface or a good colour are unnecessary.

ARCHES.—Rough arches in cement over all openings for doors and windows.

SLEEPERS AND FENDERS.—Half-brick sleeper walls honeycomb and one brick fender walls or ground floor.

BUILT IN CEMENT.—All the piers (small) and half-brick walls.

FLUES.—The flues as shown with withes 1½in. outer 9in.

DAMP COURSE.—D.C. of slates in cement at an approved level.

FAIR FACE AND WHITEN.—The internal walls of w.c. (servants'), scullery, and larder,

wine and beer stores, lamps, are to be fair faced brickwork with struck joints, twice limewhited.

AIR BRICKS.—To ventilate under floors provide and fix 9in. by 3in. terra-cotta air bricks (approved pattern), and form channels through wall for same.

SCULLERY SINK, &c.—A 36in. Twyford's No. 651 B. stoneware sink, white glazed outside and inside, with 2in. lead waste to same, with 3in. brass grating and core piece soldered in.

STOVES.—In all the rooms but dining-room and hall the stoves would be stock pattern. Dining-room and drawing-room would have a simple dog grate. The chimney pieces and tiles would be designed.

PAVING.—All the offices and corridor of servants' part would be paved in tiles in cement.

YARD would be asphalted and laid to fall towards gully.

#### Thatcher.

STRAW.—The roofs to be finished thickness of 9in. with thatching of good hard, stiff rye straw, grown on poor land.

VERGES.—Fair verges, valleys, and hips.

LACING.—Wood lacing for thatched roofing, about 15in., wide securely penned in.

#### Mason and Slate-Mason.

STONE STEPS.—All outside steps except main entrance to be 3in. thick.

STONE WINDOW CILLS.—Will be 6in. by 3in., weathered and throated grooved for weather bar.

SLATE SHELVEING.—Fit up larder with 1in. slate shelves as shown, supported upon half brick bearers—ditto in beer and wine cellar.

#### Carpenter and Joiner.

DISTANCE APART.—No joists should be further apart than 1ft., unless roof rafters which are 18in. apart.

SLEEPERS.—4in. by 3in. deal.

WALL PLATES.—4½in. by 3in.

GROUND FLOOR JOISTS.—Would be 4½in. by 2½in.

FIRST FLOOR.—9in. by 2in. with herring bone strutting.

ROOF.—Rafters' ties 4in. by 2in., and 18in. apart; trusses 4in. by 2in.; Ridge 9in. by 1½in.; Wall Plates 4½in. by 3in.

EAVES.—The ends of rafters carried over walls with 3in. by 2in. tilting fillet running along ends.

GABLES.—Short purlin's projecting 1ft. 6in. with 1½ boarding under and supporting thatch.

FLOORING.—1in. yellow batten flooring, with mitred ends to fireplaces.

SKIRTING.—6in. by 1in. skirting to all rooms.

FRONT DOOR.—Frame, 4½in. by 3½in. Door, 7ft. by 3ft. 6in. by 2½in. double rails and styles, the centre panel of 1½in. material, part of top tube glazed with lead lights.

GARDEN ENTRANCE.—2in. 3-panel door, upper panel with lead lights.

INSIDE DOORS.—Four panelled, moulded. Copper letter plate and electric bell push.

FLOOR FOR BOX-ROOM AND CISTERN.—A floor to be provided in cistern room and box room.

WINDOWS.—Casement windows, posts and head rebated 4½in. by 3in.; sashes 2in.; copper fixings, &c., with scribing mould to brickwork. Parts fixed and parts to open on hinges.

BUTLER'S PANTRY.—To be fitted with shelves and sink and cupboards and all complete.

PICTURE RAIL.—1½in. by ¾in. moulded picture rail in dining-room, study, boudoir.

STAIRCASE AND HALL FINISHING.—The staircase will have 1½ft. treads by 1ft. risers, with 1in. cut strings fixed on the one side, against 2in. moulded panelling between stair and entrance; and other side against 4½in. wall between stair and hall. This wall plastered on both sides, with 7in. by 1in. carved mahogany French polished coping, with fillets under to correspond with fillets forming panelling in wall.

WALL PANELS.—Panelling in hall is made of plaster with grounds fixed to wall at intervals, and fillets 2½in. by ¾in. nailed to grounds, and with coping moulding to panelling 4in. by 3in.

POSTS.—Outside post to porch 10in. by 10in. square.

Post in hall going to ceiling 10in. by 10in. square, and carrying purling 7in. by 6in. with 3in. ribbed pieces.

GALLERY.—Floor joists are carried through with 9in. by 3in. trimmer on face supported by 6in. by 6in. posts. Gallery front 2in. panelling with mahogany top.

WEATHER BOARDING on N.W. elevation is composed of 1½in. boards, the form being 6in. wide, and the back boards 9in. Run vertically, with grooves at each joint to prevent capillary attraction.

CORNICES.—Plain cornice in plaster.

#### Plumber.

CISTERN AND SAFE.—800-gallon stout wrought-iron galvanised rivetted cistern, with stay-bars, overflow, &c.

WATER SERVICE, BATHS, LAVATORY.

HOT-WATER SYSTEM.—Tested cylinder.

GLAZING.—The reception-rooms ½in. best plate glass, the others sheet.

PAINTER AND PAPERHANGER.

#### The Cost.

Cubic contents 79,911 cubic feet, at 6d. per cubic foot = £1,997 15s. 6d.

ERRATA.—In our article in last week's issue the design by "Pippa," mentioned in the list of highly commended designs as the work of Mr. W. L. Dowton, was not by that gentleman alone, but in conjunction with Mr. Alick Horsnell, of Chelmsford. Also the authors of the design under the motto "Christian," in the list of commended designs, are Messrs. R. Wynn Owen and Frank I. M. Owen.

## IN A SAXON VILLAGE.

By F. H. CHEETHAM.

THE little village of Schönfels is situated on either side of the great highroad midway between Zwickau and Reichenbach, in the south-west corner of the kingdom of Saxony. The word "picturesque" best describes our feeling concerning Schönfels. That word, I am aware, may mean anything or nothing. It is vague and indefinite, and is too often used to describe a class of buildings that are totally devoid of any architectural merit and wholly unsatisfactory. Yet such buildings are often pleasing to the eye. And so our Saxon village is picturesque, though there is not a house, or a building of any sort, in it that has any architectural pretension; yet the aspect of the village is eminently pleasing, and at nearly every step we take we are face to face with self-painted pictures which are a source of never-failing delight.

This part of Saxony is thickly populated, and very go-ahead. Busy manufacturing towns are dotted all over the land, yet between these centres of industry the yellow cornfields wave, and the dark pine forests whisper, under a blue and smiling sky. It has a strange beauty of its own, has this undulating Saxon land; a beauty that grows upon you, that impresses itself upon your imagination, and gives birth to a thousand fancies that one cannot see with the natural eye. And it is in the midst of this beauty that Schönfels lies. The houses climb up the hills on each side of the road, which here fringes the margin of a large sheet of water into which the little brook expands in the centre of the village. Crowning the summit of the hill, round whose base the road here winds, stands the old castle, a prominent object in the landscape for many miles around, and seeming to keep a silent but sleepless watch over the little community. Superstition is still rife, and the castle is looked upon with a superstitious awe by many of the villagers, who believe that a dread fate overhangs the old building in consequence of all the evil that has been perpetrated there in times past.

Julian Hawthorne wrote, twenty years ago, that the cottages in German villages were "mostly two-storied boxes smeared with stucco





THE VILLAGE OF SCHÖNFELS, SAXONY.

and gabled with red tiles. They are not real cottages," he continued, "but only small, inconvenient houses. They have a temporary artificial look, conveying the idea that they have been made somewhere else and set down in their present situation quite by accident, to be tried in a new place to-morrow. German toy villages," he concludes, "are more accurate copies of the reality than our years of discretion would have supposed." This description will well serve for our Saxon village. The lack of the home instinct in the people makes the possession of a garden a superfluity, and very few of the houses here possess one. You enter, generally, straight from the road, and the houses are mostly "two-storied boxes smeared with stucco." The walls are strongly built, and the upper storey is usually constructed in timber, and the roof tiled. This "half-timber work" has little of the beauty of that in many of our old country houses in England. It is severely constructional, superfluous uprights being rarely, if ever, used. The spaces are, therefore, wide and either filled in with plaster, or with bricks on edge showing a large face of about eleven inches by five and a half, and of a pink colour. Often, however, the upper part of the house is slated, the slates being hung in a variety of fanciful patterns, and sometimes highly touched up with paint, especially in the gable ends. Or, again, the whole face of the upper storey is boarded with rough boards entirely innocent of the painter's brush. The appearance of this naked boarding is, however, eminently pleasing to the eye, though we cannot help wondering how long such work will last. The older houses in the village all follow this pattern—a pattern to which the term "picturesque" is peculiarly applicable. "A picturesque house," someone has said, "is one which, though meant for use, is practically inconvenient to the verge of uselessness." These houses do seem, to us English at any rate, very inconvenient, though to a Saxon, who wants little else than a place to sleep in, they may be everything that can be desired. The Saxon villager, and not the villager only, but the dweller in the town, knows not modern comforts. He is content to live as his fathers lived, except that perhaps he rides a bicycle, and concerns himself little about sunshine in his house and still less about ventilation. He

will sit in apparent comfort on a July day in a room with closed windows and door, and with a large stove performing its duty in the corner. Everything in his house is dark. Dark wall-papers, painted ceilings, dark and massive furniture, dark heavy window curtains. A certain oppressiveness pervades his dwelling, and we come to attach an altogether new meaning to the dying words of Goethe, "Light, more light!" Light, that is indeed what the Saxon wants in his house. Not that he objects to the light, indeed he lives in the summer months much out of doors, but simply that he has never thought of taking the sunlight into his house. In one house in our village, an English-born housewife has introduced the sun along with certain English ideas into the furnishing and decoration of her rooms. She has got rid of the native oppressiveness, and the natives themselves, though feeling strange at first in such surroundings, acknowledge that rooms so furnished are pleasant to live in.

The more recent houses, however, erected in Schönfels, are built wholly in brick. The brickwork is generally left to be covered at some future time with stucco, but may stand many years before the coat of plaster is applied. In the meanwhile, the appearance of such buildings is far from being pleasant, as the bricks used are of a common quality, roughly set, and with wide open joints. These houses seem to be eternally crying out for someone to come and hide their ill features with a veil of stucco. They are the first sign of the new spirit in Schönfels, but already the village has taken a further step into the nineteenth century, for already there has arisen a modern Renaissance villa in yellow brick and stone, which has quite the appearance of having been imported direct from the nearest town. It is convenient, no doubt; it is roomy and perhaps more healthy than the old square boxes with their red roofs, but it is not picturesque, and we cannot help but regret that it has found its way here. Alas! it is but the forerunner of others, for no new houses will be erected in Schönfels on the old pattern. It will henceforth be honest, nineteenth century building, and the village, as the town, lies doomed in the eyes of the artist. For you cannot but be profoundly conscious that these people have no regard for the past as far as their buildings

are concerned. The new is always admired more than the old, although it may have nothing to recommend it but its newness.

The church at Schönfels is a plain stuccoed structure, with a characteristic German tower. It might not be far from the truth to say that as a building it is positively ugly. It has, at any rate, no pretension to architectural beauty. It is in a shockingly neglected condition within and without, yet, notwithstanding this, or it may be by reason of it, there is something pleasing about the general appearance of the building, which, unlike the two-storied boxes, seems to have a natural connection with the spot on which it stands. Yellow, dirty, and possessing nothing of the beauty of holiness, there is nevertheless a charm of neglected Nature hanging over it, which makes us almost faint hope that the efforts that we hear are being made to build a new house of God will be unsuccessful. It occupies the summit of a gentle hill, down whose southern slope the churchyard falls, and whence a glorious view is obtained over miles of cornland to the great pine forest beyond. There is a strange fascination about this neglected churchyard. As the evening shadows fall the little company of dark cypress trees stand out like so many black sentinels around the old building now growing dark against the western sky. It is a romantic spot which has vividly impressed itself on our memory. But our peaceful evening thoughts are likely to be rudely disturbed when we come in the light of God's sun to look at the house that men have maintained to His honour. We are bound to admit that the people do Him little honour here, at any rate outwardly. Inside the church has an equally neglected appearance. It is filled with stiff backed wooden pews and galleries, all painted, at some distant time, white and gold, but now shockingly dirty. Damp—the place is never heated—and dust are left to do their work. The altar and its precincts call loudly for the free use of the broom and pail, and over all lies a heavy, depressing air in no way calculated to help in the joyfulness of worship. The pulpit is part of the reredos. A large opening high up over the altar is approached by a flight of wooden steps from behind, and from here the pastor addresses his flock. A portrait of Luther adorns the front of the gallery, on



which is carved the date 1730, which was evidently the year that these galleries and pews were put in. When the church itself was erected I was not able to find out. Over the doorway in the tower is the date 1627, with two shields of arms much defaced and the name Margarita von Wissenbach. Close to the churchyard gate is a small square building, bearing the date 1771, which is worthy of notice. It is the burial place of a neighbouring family, and has a gracefully carved slated roof surmounted by two wrought iron finials of pleasing design.

On the hill opposite that on which the church is situated, and rising high above it, is the old castle of Schönfels, which keeps within itself even to this day, we are told, the spirit of the evil that has been wrought there in the days that are gone by. We can picture to ourselves the robber barons descending on the helpless merchants who passed along the road beneath. My imagination will not allow me to ask whether the road then existed; I prefer to believe it did without questioning. You are shown at the base of the round tower the dungeon into which the prisoner was thrown while awaiting the arrival of the ransom that was to set him at liberty; but anything like a true history of this castle I have not been able to discover. To the Saxon the past is a "long time ago." Dates are needless luxuries. Not that with some searching they are not to be found, but when holidaying there is sometimes a certain attractiveness in vague stories that allow full play to our imagination, and permit us to believe just as much as we wish to believe. Under such a spell we cease to seek for "information," and take things as they are. And so I find myself believing all kinds of impossible stories about the old schloss at Schönfels. Without any pretensions to architecture, its patchy yellow stuccoed walls and red roofs give the castle a picturesque appearance, harmonising very completely with its surroundings. It seems to have grown out of the hill top, and to be as closely rooted there as are the trees that surround it. For miles around it can be seen overtopping the waving cornlands, and from far it seems always to be welcoming us back once more to the village; for in spite of its evil name, we cannot help but entertain a kindly feeling towards the old castle. What would Schönfels be without it? A climb up its round tower, which rises straight from the round in the inner grass-grown court, reveals



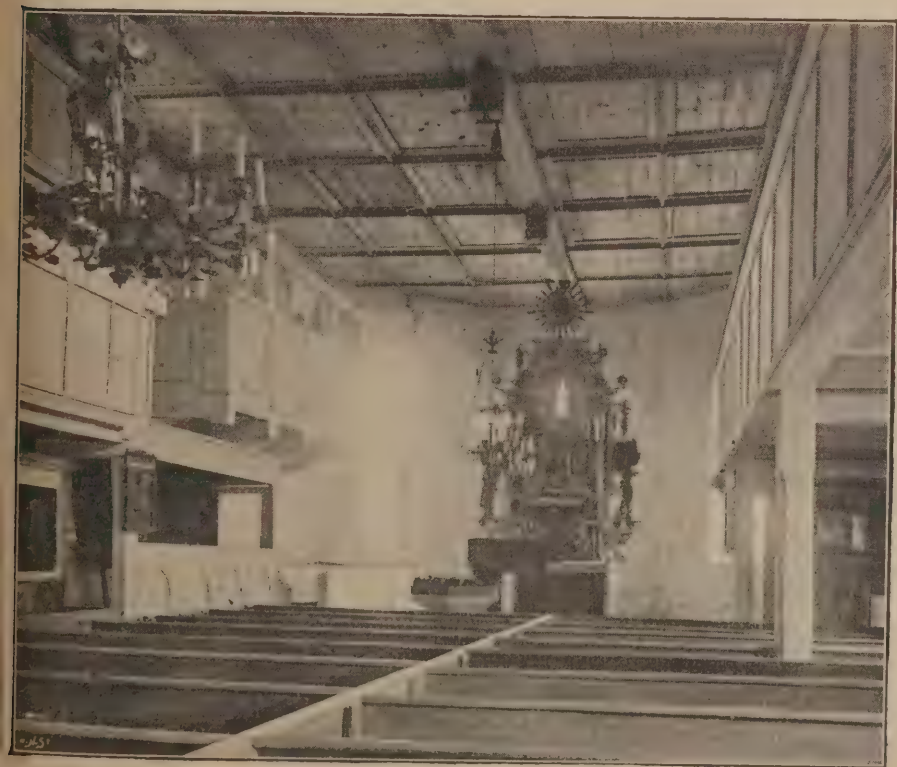
THE CHURCH, SCHÖNFELS.

a wonderful panorama of the country round. The rooms are deserted and bare except for dust and a few old pieces of furniture, which for some reason have not been taken away. The chapel presents a melancholy appearance of neglect. It is very small, but contains a wooden gallery, the front of which is decorated with grotesquely crude paintings. An elaborately carved pulpit strikes one with its hideousness of design and colour. Dust is over all. The castle has belonged since 1750 to the Von Römer family. At present they reside at Steinpleis, near Werdau. Before this date it belonged to the Von Deskau family. A book in the chapel bears the name of Adelaide von Deskau.

Picturesque! Yes, there is no other word to describe it; the old castle is picturesque, whether viewed from within the grass-grown court with its wooden galleries, or from afar over the yellow fields. And not least picturesque is the old forester who makes his home here, and to whose kindness we owe the privilege of seeing the interior.

It is not yet the nineteenth century at Schönfels, and it is sometimes hard to realize that you are here in the immediate vicinity of many big and growing manufacturing towns—Werdau, Zwickau, Reichenbach, Neumark, Mylau, Netzschkau. Yet Schönfels itself is as romantic and beautiful a village as one could desire. But a change seems bound to come sooner or later. Everywhere the new Germany is fast pushing out the old, and closed in between so many great centres of industry, the aspect of the country is bound to undergo a change. I suppose it is inevitable, yet from an artist's point of view it is regrettable. In all the towns round about the old picturesque buildings are disappearing to make way for modern Renaissance structures, possibly more healthy and convenient, but far less interesting. In themselves many of these new buildings, at any rate in the towns, are not unpleasing, but their presence will not compensate us for what we have lost. In Zwickau, in Reichenbach, in Mylau, in Plauen, the old buildings are fast disappearing. Soon all will be painfully new. But the change is more to be lamented in the country than in the towns. Things seem to be going ahead in this part of Saxony, and it may be safely predicted that Schönfels will grow in size, and with its growth will lose much of the delightful old-world appearance that is its to-day.

**Royal Exchange Decorations.**—The latest addition to the Gallery of Historic Panels in the South Ambulatory of the Royal Exchange was unveiled last week. The panel represents Queen Elizabeth being received by the then Lord Mayor, Sir Thomas Gresham, at the opening of the first Royal Exchange. It is the work of Mr. Ernest Crofts, R.A., and shows the Queen seated on a white charger, the details of the picture being excellently worked out, even to the study of an attendant strewing herbs in her Majesty's path. Mr. G. Greville H. Palmer presented the fresco to the Gresham Committee, on behalf of the Mercers' Company.



INTERIOR OF THE CHURCH, SCHÖNFELS.



## REGISTRATION OF ARCHITECTS.

## DISCUSSION AT SHEFFIELD.

A MEETING was held on Friday, June 30th, at the Cutler's Hall, Sheffield, to consider the question of the "Statutory Registration of the Profession." The subject was introduced by Mr. Ellis Marsland, whose paper was fully reported in our last week's issue. In opening the proceedings, the chairman, Mr. T. Walter L. Emden, president of the Society of Architects, said that he and his colleagues were there, not in any way in opposition to other societies, nor with any desire to place themselves in the fore front of the battle which necessarily must be fought some day, in regard to the question of the registration of architects. He was very anxious that the Royal Institute of British Architects should take the matter up. They had several times passed resolutions on the subject, but so far they had done nothing more, and there were not a few members of the profession who felt that the time for passing pious resolutions had gone. The doctors, the surgeons, the dentists, the lawyers, almost everybody connected with a profession had the rule of compulsory examination in force, and it seemed absurd that the men who had so much control over the pockets and the health of the public should be placed in such a position that anyone could enter their profession. Anyone could to-morrow place a brass plate over his door announcing himself as architect and surveyor without any special education at all—the oilman, the coal merchant, or anyone could do this. He mentioned the oilman and coalman because they had instances of these two doing something of that kind. To his mind the necessity for registration must be apparent to everybody, and all they wanted was that the subject should be pressed forward and the profession placed on a better footing as early as possible. It was no use saying that they had an examination twice each year, because the examination was not compulsory, and did nothing to protect those in the profession. The whole thing lay in a nutshell. Was it or was it not necessary that those who wished to be members of the oldest profession in the world should have a compulsory examination before they could start in practice? He thought every sensible man would say it was necessary, and would also say that there should be a system of registration. There was such a system in every other civilised country in the world, and it seemed to him that England—the first country in the world—was very much behind hand in this matter.

Mr. Ellis Marsland, hon. secretary of the Society, then read his paper on "The Statutory Registration of the Profession," after which Mr. F. Vallance moved "That this meeting cordially approves the principle of the statutory examination and registration of architects, and is of opinion that it is desirable in the interest of the public and the architectural profession to promote a Bill in Parliament for the attainment of this object." He remarked that it was quite true as the chairman had said that almost anyone—a builder's foreman, a clerk of the works, or any other person could put up a brass plate and practice as an architect. They wanted to put an end to this, and to stop it they were proposing a Bill for the Registration of Architects. It was all very well for leading members of the profession, men at the top of the tree, to be indifferent on the matter, but he thought it was the business of all connected with the profession, including those at the head of the profession, to do what they could to improve the profession, and to protect those who were coming into the profession from the evils which they were suffering from to-day. It was also important that the public should be protected from these unqualified practitioners because it was necessary that their buildings, both domestic and public, should be artistic and healthy, and carried out on the most scientific principles. The position taken up by the Royal Institute up to the present time was against Registration. He knew the view held by some members of the

Royal Institute was that shortly the letters F.R.I.B.A. or A.R.I.B.A. would be looked upon by the general public in the same way as the letters M.R.C.P. or M.R.C.S. or L.R.C.P. are looked upon in the medical profession. But he could not go that length. He could understand this position being taken up if the examination were compulsory, and if no one could practice who had not passed the examination. But without such a compulsory examination how could the hopes of those members be realised when they knew full well that there were hundreds of men practising as architects, and who would continue to practise, who could never hope to get admission to the Institute. If they obtained a Bill this condition of affairs could and would be altered in the future, and their profession would be raised to a higher standard; to the level of the medical and legal professions.

Mr. J. R. Wigfull having seconded the resolution, Mr. A. F. Watson complained of the short notice given of that meeting, and expressed the belief that there would have been a much larger attendance if longer notice had been given.

The Chairman regretted that Mr. Watson thought the notice too short. The subject had, however, been before architects generally since 1881, and the profession, therefore, had had plenty of opportunity for considering it. In Leeds, last year, the same notice was given, and not only had they a large attendance, but the resolution in favour of registration was carried unanimously.

Mr. Bryden said he had been in practice in the provinces for twenty-five years, and no one had been punished more than he had for want of registration. The resolution had his cordial support, and he would do all he could to help forward the proposal to get the matter through Parliament.

Mr. Fenton said although the time had been too short to call the members of the Sheffield Society together, he believed the majority of Sheffield architects were strongly in favour of registration in some form or other, without committing them to any particular details. Of course, they were affiliated to the Royal Institute, and many of their members were members of the Royal Institute, and therefore they would not desire to go in opposition to the Institute. At the same time, he felt that if the Institute would take the matter up it would be a good thing for the profession generally.

Mr. J. Smith thought Mr. Fenton had voiced the general opinion of the members of the Sheffield Society of Architects and Surveyors, so far as that opinion had been expressed in reference to statutory examination and the registration of architects. But he was afraid, if the resolution were put to the members of the Sheffield Society in its present form, there would not be an unanimous vote upon it. He did not think the members generally would support the latter part of the resolution—that part committing them to a Bill. While he should be sorry to discourage that Society or any body of architects from seeking to realise in any wise and practicable way their wishes in regard to registration, he did not personally think that the promotion of a Bill at this juncture would be a wise thing. There were a great many of the leaders of the profession that were not with them in this proposal, and to say the least of it the Royal Institute was rather apathetic on the subject. To attempt to promote a Bill with this state of feeling in the profession he contended would be unwise; the Bill would be doomed to failure, and, moreover, the Legislature would most likely be prejudiced against any Bill which might be submitted in the future when a greater proportion of the members of the profession were converted to the idea. He suggested an alteration of the resolution approving of the principle of statutory examination and registration, and expressing their view in favour of every wise and practicable effort being made to realise their opinion.

Mr. G. S. Haslam approved of the resolution as a whole. He gathered from the opinions expressed by some of their friends present that if the great Institute were to express its willingness to go in for the Bill they

would follow their lead like a flock of sheep. While he could not say that he agreed with every detail of the Bill that was suggested for presentation to Parliament, he could foresee that no Bill would suit everybody, and they must take the Bill that would be most acceptable to the profession generally.

Mr. J. B. Mitchell Withers thought several matters wanted more fully explaining before they should be asked to vote for the Bill referred to. He should like to know what kind of examination articulated pupils would be expected to pass.

The President appreciated the fact that it was not wise to rush forward too impetuously for legislation, but this matter had been before the architects of the kingdom in the shape of a Bill for something like twelve years, and it did seem to him that that was a reasonable time. He wished to make it clear that the Society of Architects did not want them to pledge themselves to this particular Bill. It was not the Bill of the Society, and it would most probably require amendment; but they wanted an expression of opinion in favour of legislation on the subject. There was, he believed, the oldest profession on earth, and it was necessary that they should have this examination to protect themselves, and that they should have registration in order that the public might know who had the right to practice in the profession. The examination that the Institute now had did not prevent and never could prevent men coming into the profession who had no right to be in it. A few figures, he thought, would show the necessity for legislation on the subject. The Royal Institute had a membership of something like 1660, and the Society of Architects something like 600. In the profession were between 20,000 and 25,000 men practising. How many of these had no right to practise at all, and how many had little or no knowledge of the business? They were told that the time was not opportune. For thirty years the medical profession tried to pass their Bill. It was not the large societies that eventually got the Bill passed; it was not the leading men. They opposed it, and yet all admitted to-day that it was of the greatest advantage to the medical profession.

Mr. Buck thought the first thing to be done should be to win over the Royal Institute.

Mr. Vallance, in reply to the Chairman, said he preferred to have the resolution stand as it did rather than alter it as suggested by Mr. Smith.

Mr. Smith then moved to omit the words of the resolution after the word "architects," and to substitute, "and is in favour of every wise and practicable effort being made to realise this registration." He was strongly of opinion that there must be far more unanimity on the subject of legislation in the profession before there would be any chance of a Bill becoming law.

Mr. Mitchell Withers seconded the amendment, and Mr. A. F. Watson supported.

The President said that out of something like forty letters of apology he had received thirty-three spoke absolutely in favour of the resolution. Mr. Gibbs wrote: "In respect to statutory registration, my views are somewhat modified from what they were in the year 1886, and I am disposed to support the policy of the R.I.B.A. on the subject." That was all very well, but up to the present the R.I.B.A. had done nothing but pass resolutions.

Mr. Marsland Ellis, replying on the discussion, contended that the time for passing resolutions had gone by and the time for action had arrived. As the Chairman had already said, the Society of Architects were not pledged to the Bill now before them, but they said that there must be legislation in some form or other.

The President then put the amendment to the meeting, and it was supported by four gentlemen, fifteen voting against. On the resolution being put it was carried by seven votes to three against.

[We shall publish next week the opinions on this subject of a number of leading architects, specially contributed to the BUILDERS' JOURNAL and ARCHITECTURAL RECORD.]



# LEAMINGTON FREE LIBRARY AND TECHNICAL SCHOOL.

## NOTES ON THE COMPETITION.

BY OUR SPECIAL COMMISSIONER.

YET another unsatisfactory competition must be recorded, for, in spite of the Town Council of Leamington employing the most experienced specialist they could find (Mr. E. R. Robson, F.S.A., architect to the Education Department), inviting a selected list of architects, and having careful instructions drawn up, they have yet, in their wisdom, thrown over the assessor's and their own Building Committee's reports, and chosen a design which a local paper characterises as a "rank outsider."

The proposed site for this building is an admirable one, though somewhat awkward in shape; it is two or three minutes' walk from the heart of the town, adjoining the Manor House Hotel and Pump Room Gardens.

Briefly, the instructions required a Science and Art School and Library, the whole as a public building to form one well-massed group. The fund for the completion of the building exclusive of fittings, was stated to be about £12,000, and competitors were therefore

been the subject of much adverse criticism, and "rough-cast" is no doubt an unusual material for a public building in England. In a clean town like Leamington, surrounded as the building would be by masses of umbrageous foliage, we think a white or cream-coloured building would look very charming, relieved as it is by a red brick base and dressings, a deep cornice, and red Italian tiled roof. Interest is concentrated on the central feature, a stone dome, with octagonal drum and seated figures on the angles. The entrance to the Free Library is treated with attached rusticated columns, and pediment, and the elevation shows some well drawn sculpture and ornament. The perspective, however, is not so happy, as it lacks vigour and definition, and by no means conveys the ultimate colour effect. The plans may be grouped under two heads, those arranged in a rectangular form, and those following the frontage lines of the site, taking the shape of an obtuse-angled L. Thumb-nail sketches of the ground and first floor plans of the rival designs are reproduced, and will enable our readers to judge their merits for themselves. With reference to plan A, we may add that the physical laboratory is placed in the basement (to be free from vibration), as are also the carpenters' shop with wood store, and, approached by a separate stair case, the cookery and laundry, coals, heating, &c. On the second floor is the caretaker's suite of rooms, connected with an entrance in the basement by a separate stair.

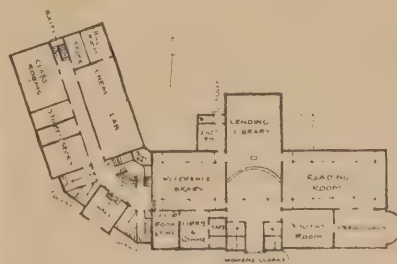
As regards plan H, the assessor, no doubt wisely, considered that the general scheme was unsuitable for an open site, as well as being far more costly than the Council stipulated for. The defects that mar the library are many, and cannot be overcome without entirely altering the plan; for instance the reference library is 600ft. super. larger than required. It is in a central position, with a sloping ceiling 10ft. 6in. high to the wall plate, a quite inadequate height for so large a room, and unfortunately this cannot be raised without destroying the light and ventilation of the surrounding rooms. The librarian's and committee rooms are badly placed, and neither adjoins the reference library, nor the safe room for valuable books, as it should do. The Technical School rooms appear to be well arranged on the first-floor plan, but there are some important defects that no doubt influenced the assessor in his decision. For instance, it is not advisable to light the antique and modelling rooms with windows towards the east and skylights on the north; vertical, as well as inclined, lights are essential in a studio.

As a matter of organisation, we much prefer one central entrance with a porter's box to supervise the hall. This is done in plan A, and enables the porter or caretaker to be easily accessible to answer inquiries;—such a man frequently supplies drawing materials and stationery, a great convenience to the students. Plan H, with the separate entrances on east and west for "boys" and "girls," precluded the possibility of this supervision;—the girls moreover have to walk the whole length of the corridor (140ft.) to gain the secretary's inquiry office. The basement provides for carpenter's shop, heating and coals, as well as caretaker's living rooms and unpacking room. The elevations are well drawn and treated in a free Renaissance manner in brick and stone, the lecture hall on the front elevation being covered with a hipped roof at a higher level. A gable is carried up as a central feature with flanking semi-circular stone gables, the tympani of which are filled with carving. These gables are repeated on the four elevations. The east and west angles of the north elevation terminate in low octagonal turrets in the upper part of which are arranged the lavatories and w.c.'s for boys and girls. The cubic contents appear to be somewhat under-estimated and the author refrains from giving an estimate. The Council appear to imagine that such a building could be erected for 6d. per foot, but from actual recent experience we are convinced that at least 9d. per foot cube must be allowed, making a total of £18,000 odd.

Plan C also takes the form of a hollow cube

on the first floor, and is the most compact and economical of all the schemes. The library is on the western side of the square, with entrance on the south, whilst part of the Technical School is placed on the eastern side, with entrance and staircase in centre. On the first floor the art rooms are all towards the north, the lecture room is near the staircase, and the Technical and Science Schools are well laid out. The preparation room appears too small, and one stair but 5ft. wide is surely insufficient for all the students that might assemble on this floor. The elevations are very simply and pleasingly treated, on the ground floor in brick, and above in "rough cast," relieved with flat brick pilasters and gables. The whole external character is, however, too domestic in feeling.

Plan D is somewhat similar to A in outline, but with the library entrance on the angle and the library on the west, away from the town. The reading and magazine rooms, lending library, and youths' room are on the ground floor, and reference library, book store and librarian on first floor. The Science School is on the ground floor and the Art School above, while the caretaker is centrally placed on the second floor. The woodwork shop, cookery, and laundry are in the basement, and a noticeable defect is that these two rooms are approached by the same staircase. The elevations are broadly treated in brick and stone in the Georgian manner and illustrated by a



GROUND FL. PLAN



FIRST FL. PLAN

PLAN "A."

beautiful set of drawings and boldly washed perspectives. The ground floor windows, though charming in elevation, are too small for the large rooms they light.

The authorship of plan E is very evident from the delightfully drawn elevations. The block plan is square, but without any central well, and consists of ground, first, and second floors. The carpenters' shop on the ground floor appears ill lit and badly placed next the physical laboratory in spite of the hollow wall between them. The approach to the lending library is not as direct as it should be, and the plan generally lacks simplicity. The reference library is on the first floor. The class-rooms are somewhat scattered, and not arranged in pairs as required, but the external treatment is unquestionably the best and most original of all the designs sent in, and we hope to see the charming pencil perspectives in next year's Academy.

Plan B strikes one as covering a large area. It follows the lines of the site and consists of two floors only. The entrance to the schools is on the angle and that to the library is also similarly placed to Plan A. The librarian's room is admirably situated for purposes of supervision, but was perhaps considered too public. The cloak-rooms seem unnecessarily large, and though the Art and Science Schools would be thoroughly workable, the great length of

required to plan in the most compact and economical manner possible. In the words of the assessor, "the exterior should indicate the internal uses rather by good proportion, good outlines and suitable character, than by ornament or decoration." A schedule of accommodation was appended with the required area of the rooms, so that all appeared perfectly straightforward, the only difficulties being the small amount allowed and the irregular shape of the site. Nine sets of plans were submitted, and Mr. Robson placed them as follows, the Building Committee unanimously endorsing his recommendation:—(1) Plan A., Mr. J. E. Newberry, 47, Victoria Street, Westminster; (2) Plan C. Messrs. F. H. Greenaway and J. A. Smith, 21, Queen Anne's Gate, Westminster; honourably mentioning Plan D, Messrs. Brewell and Baily, Nottingham, and Plan E, Messrs. Malloes and Grocock, Bedford. Notwithstanding this weight of expert opinion, the Town Council, by a majority of nearly two to one, negated the report and placed Plan H first, by Mr. J. Mitchell Bottomley, of Middlesborough and Leeds. Plan A was changed to second place, and C, D, and E were honourably mentioned.

We have had the opportunity of examining the designs and emphatically uphold Mr. Robson's award. Plan A has undoubtedly the best library, a thoroughly well-planned Art School entirely lit from the north and an economical and workable Technical School. The external treatment of this design has



corridors is decidedly extravagant. The elevations are interesting and original and the perspectives boldly drawn in ink.

Plan I is square in form and somewhat similar to Plan H, though with a far better library. Six class-rooms are similarly arranged on the ground floor and the remainder of the school is placed upstairs. Externally, the building is treated in brick and stone, with a tower over the central entrance.

Plan F is somewhat elaborate externally, with flanking turrets to the central library entrance. The block plan is rectangular, though somewhat ragged in outline. The basement consists of the Technical and Science Schools, with the library on the ground floor, and the Art School and three class-rooms above.

The remaining plan, G, is weak and puerile, illustrated by perspectives that give one the impression of an enormous building. The back view might be a block of flats with its range of six stories one above the other!

To sum up, it appears to us that the Council have not only made a serious mistake in overriding the assessor's award, but have also acted most unfairly to the profession. They should have accepted the design recommended by Mr. Robson, than whom no one has more experience or is better able to judge school planning. If modifications were required, it is to be assumed that the author could have satisfied the Council. Failing this course the very least the Council can do is to award the first and second premiums as Mr. Robson advises, and then, if they must, let them give the work to whomsoever they will.

## THE LATE MR. BANISTER FLETCHER.

BY the death of Mr. Banister Fletcher, F.R.I.B.A., which occurred last Wednesday, the profession of Architecture has sustained a severe loss. Not only by reason of the works he has carried out, but by the books he has written, and the instruction he has given to successive generations of young architects, he has exercised an influence scarcely equalled by any architect of this generation. Born in 1833, Mr. Banister Fletcher was educated privately, and commenced practice as an architect and surveyor when he was only twenty years old. During his lengthy professional career he has erected chapels, schools, factories, warehouses, and almost innumerable suburban villas. One of his latest buildings was the new King's College at Wimbledon, which was opened last Thursday, and is illustrated on page 348. He also had an extensive practice as a consulting architect and surveyor, and his services were often in request as arbitrator and umpire.

But it is as *Professor Banister Fletcher* that he will be most generally remembered, and it is beyond doubt that in this capacity some of the best work of his life was done. In 1890 he was elected Professor of Architecture and Building Construction at King's College, but he had for some time previously been an occasional lecturer at that Institution. He has also for some years past been one of the lecturers appointed by the Carpenter's Company to deliver the lectures annually given in the Carpenter's Hall on matters connected with the building trades. Mr. Fletcher has published a number of text-books, some of which have gone through several editions, and are regarded as standard works on the subjects with which they deal; his works include "Dilapidations," "Light and Air," "Valuations and Compensations," "Arbitrations," and a handbook to the London Building Act, 1894; he has also written, in conjunction with his son, Mr. Banister F. Fletcher, an important work on the "History of Architecture."

Mr. Fletcher became an Associate of the Royal Institute of British Architects in 1860 and a Fellow in 1876. He was also a member of the Architectural Association and of the Society of Architects. In spite of the heavy

demands upon his time and energy which his professional position involved, Mr. Fletcher found time to act as chairman of the Trades Training School Committee of the Carpenters' Company, as a member of the City of London Corporation, and as Colonel of the Tower Hamlets Volunteer Rifles. He also sat in the Parliament of 1895 as Liberal member for the Chippenham Division of Wiltshire.

As an architect, Professor Fletcher might have been described as "an all-round man;" he united, as few men have done, a high degree of artistic taste with unrivalled technical skill. Nor was his knowledge merely theoretical; he could himself, it is said, rival the most skilled artisan in building a brick wall, wiping a plumber's joint, or dressing a door. This combination of practical, business-like qualities, with a touch of idealism and artistic sentiment, fitted him in a singular degree for the position he held with so much credit and usefulness of guide and adviser to the rising generation of architects and surveyors.

A hard worker all his life, Professor Fletcher died in harness; on the day before his death



THE LATE PROFESSOR BANISTER FLETCHER.

he was sketching out in his bedroom the plans for a large building about to be erected. The funeral service was held on Monday at St. Mary's Church, Kilburn, and the interment took place at the Hampstead Cemetery.

**The Antiquities from St. Michael, Bassishaw,** found during the excavations, will be added to the Guildhall Museum.

**Architectural Society's Dinner.**—The annual dinner of the Lincolnshire and Notts Architectural and Archaeological Society was held last Thursday.

**Dundee Institute of Architecture Competitions.**—The competitions of the Dundee Institute of Architecture for 1899-1900, particulars of which we gave in our issue for June 14, are limited to residents in Dundee and the neighbourhood.

**The Tudor Hotel,** situated near the Princess's Theatre, Oxford Street, W., was opened last week. The entrance hall is utilised as a lounge, with rich lined marble walls and pillars, old carved oak appointments, and luxuriously-upholstered easy chair, settees, &c., while on the upper floors are range after range of handsomely furnished bed-rooms, all representing the highest degree of modern comfort. The dining-room is designed with a rich, warm scheme of colour and decoration and contains substantial furniture. The drawing and reception rooms are also furnished and embellished in a refined manner. Empire mirrors, old French ormolu clocks, candelabra, and other elegant furniture in the antique style, and luxurious carpets make the rooms as cheerful as they are cosy. Altogether there are some 200 rooms in the hotel.

## Correspondence.

### CEMENT COVERING FOR BRICK WALLS.

To the Editor of THE BUILDERS' JOURNAL.

MANSFIELD.

DEAR SIR.—I am greatly interested in your valuable journal, and find in it a vast fund of practical and useful information. Your answers to enquiries are, as a rule, up-to-date, but I must take exception to one which appears in a reply on cement covering for brick walls in your issue dated June 14th. I don't think H. E. can be a practical plasterer or he would not use terms such as "compo," "sand," "lightly scored," which are unknown in the trade; moreover, the reply to J. M. S., and many more readers of your valuable journal, is very misleading. In the first instance he advises rough rendered about  $\frac{3}{4}$  in. thick. This thickness, I might mention, is an average one, specified by most architects for three-coat work when finished. Then, again, the proportion of H. E.'s "compo" gauged four or five to one is most absurd, as cement or sand gauged this strength is no stronger than well burnt lime, mixed with a correct proportion of sand, and its damp-resisting qualities are practically nil. Finally, a trowelled face resists damp better than a floated face, the latter one being recommended by H. E.—Thanking you in anticipation,

ANGLICE.

### REGISTRATION OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.

CLAPHAM.

SIR,—Mr. Middleton, in your issue of June 28th, makes reply to my suggestions, but very unsatisfactory to my mind. He first contends that because the members of the R.I.B.A. have already to pay a fee and are registered as it were in their list they should be exempt from another payment. But the R.I.B.A. is an ordinary society and should claim no more favour than the Society of Architects; its members pay their fee not for registration, but for their diploma and the social standing it confers. Then with reference to examinations, he says, "training is more essential than cram." Certainly, but I would ask: Would those apprenticed to architects who would be registered under the Bill obtain that training? I think not, for Mr. Middleton surely knows the way in which apprentices to architects are often allowed to go without any instruction from their chief, and some would even be incapable of giving it. So there is not always advantage in apprenticeship. A candidate should not be forced to pay a fee probably for no advantage; besides, a man may gain just as good training under a builder as he could under an architect; I do not mean on the artistic, but on the practical side of his profession, for there should be no attempt to examine a man in Art, except so far as a general knowledge of the history of art, and a slight knowledge of archaeology. Mr. Middleton says: "Architects certainly ought to be able to manage their own business." They ought, but he must never forget that architects have the supervision of and interference with other people's businesses, and the other people would wish to have some means of seeing that the architects are capable. For this reason I suggested the additions to the Council, for by the Bill architects would gain much in power over the pockets and work of others. With regard to the keeping of the register, I still contend that the arrangement of names under towns should be embodied in the register, for the Bill goes into the question of keeping it alphabetically, and it would be just as well to embody my proposal also. I had not forgotten, as Mr. Butler suggested, that matters of this kind were dealt with in committee, but I made the suggestions with the idea that the framers of the Bill might see fit to introduce amendments in committee on some of these matters.—Yours, &c., H. D.



## Under Discussion.

### DEFECTS IN PLUMBING.

A meeting of the People's Palace Architectural Society, was held on Saturday, June 11th, Mr. Albert Grenville in the chair. An interesting paper was read by Mr. S. Rosenheim, entitled, "Some Defects in Plumbing and House Drainage." The author, in his opening remarks, said that when drains were laid on concrete, with interceptor, soil pipe outside, and ventilated, under the supervision of a sanitary inspector, the drainage is considered perfect, but this is not always the case, as sometimes serious defects occur in the detail. He then explained how joints should be made and protected, illustrating his remarks with lantern slides. He then passed on to the sizes of pipes, explaining that a small pipe gave a better flow and had a more cleansing effect than larger ones, showing some interesting slides illustrating how pipes had become silted, or clogged, by not having had a sufficient force of water running through them. Ventilators received considerable attention, the author explaining some defects, and showing several slides of bad cases. With regard to bath and sink wastes he said that it was sometimes the idea with people that because the pipes from wastes are not in direct communication with the drain they would not require trapping, but were they to see the inside of the pipes caused by the soapy water and the like, they would soon change their opinions. Scullery sinks are the cause of a great deal of trouble unless they are properly fitted. Greasy water is often run down them, and when it reaches the old water in the trap the grease is congealed and in time will clog the drain. A remedy for this is to have a grease trap fitted over theully which can be removed and cleaned periodically. At the conclusion a brisk discussion ensued, and some practical questions were answered by the author. A hearty vote of thanks was accorded Mr. Rosenheim for his able paper.

### LINCOLNSHIRE ANTIQUITIES.

The annual assembly of the Architectural and Archaeological Society of Lincoln and Notts after a lapse of thirty years, being again held Gainsborough. The first excursion took place at Wednesday, the route lying altogether in Lincolnshire. The churches to which chief attention was paid were those at Blyton, Wighton, Scotter, Scotton, Northorpe, Kirtton, Waddingham, Blyborough and Corringham. Luncheon was taken at Kirtton Lindsey, and at Gainsborough, after which the members paid a visit to the Parish Church. In the evening the annual dinner of the Society was held, and was followed by a public meeting in the Marshall Memorial Institute, when the Rev. Mr. Cave, Vicar of Blyborough, read a paper on "The Romans in Lincolnshire." He said that Lindum Colonia (Lincoln) was founded in 70 A.D., on the same site as a pre-existent British village. From Lincoln came one of the three British bishops who attended the Council of Arles in 313 A.D., which brought them face to face with the question of the introduction of Christianity into Britain. The Newport gate in Lincoln was a wonderful fragment of architecture left by men who seemed to have built for eternity, and from Lincoln ran the great Roman road, Ermine Street, straight as an arrow's flight, for forty miles to its destination at Winteringham, the ferry across the Humber. Referring to the mental attainments of the Romans he would present pre-eminence in science, with regard to the fine arts we had only to take a modern florin or shilling, and compare it with a Greek or Roman coin, to see that we had small claim to artistic ability in respect. When Macaulay's New Zealandeller came to stand on a broken arch of old Bridge to sketch the ruins of St. Peter's, that traveller might well exclaim that nineteenth century Englishmen were, in any rate, but a puny race after all.

Mr. Cave here passed round two bronze coins, one Roman, the other present-day English, in which he pointed out the vast artistic superiority of the Britannia on the older coin.—The Rev. Canon Moor, vicar of Gainsborough, followed with a paper dealing with the progress of Christianity after the departure of the Romans. The county of Lincoln was rich in pre-Norman ecclesiastical remains, and, as was natural in such an exposed county, in pre-Conquest towers. These Romanesque church towers were largely intended as strongholds against marauders. Without a sense of increased security the solidity of the Anglo-Saxon and Norman styles would never have yielded so completely to the grace and lightness of those that followed. He agreed that there was a close connection between the square towers of Lincolnshire and the round towers of Ireland—in purpose and in the time of erection. The different shape was, doubtless, due to local reasons, and the abundance or lack of large stones for angular mason work. At the latest he would assign the towers at Barton, and perhaps Broughton, to the time of Edward the Confessor.

## Keystones.

**Horndon-on-the-Hill Church, Essex,** a quaint, picturesque building of the thirteenth century, is to be restored, provided funds are forthcoming.

**Workhouse Extension at Yarmouth** was the subject of a Local Government Inquiry recently. The extension needed is the erection of a new laundry.

**Mr. E. Jenkin Williams, M.S.A.,** Architect and Surveyor, has removed his offices from 14, High Street, to the new premises recently erected at 31 and 32, High Street, Cardiff.

**New Sunday Schools at Barrow** are being erected in the parish of St. John, in place of the old buildings. The buildings are being erected by Mr. Brown, builder, and are estimated to cost £1,500.

**The Practice of the late Mr. George Fleetwood, Surveyor,** of 3, New Court, Carey Street, Lincoln's Inn, will be continued at the same address by his son, Mr. George S. Fleetwood, in conjunction with Mr. W. Eversden, under the name of Fleetwood, Son, and Eversden.

**Proposed Statue to St. Bernard.**—It is proposed to erect a statue to St. Bernard de Menthon near the institutions which he founded at the passes of the Alps in the tenth century, for the benefit of pilgrims journeying to Rome. The keepers of the hospices are Augustinian Monks, whose primary work is to rescue, with the aid of large dogs, travellers who are in danger of perishing from snow and cold. The places, which can afford shelter to about 300 persons, are visited every year by many British tourists, who are gratuitously entertained, and to these, especially, an appeal for funds is made. Those desiring to contribute are requested to send their donations, however small, to the Superior, Hospice of the Great St. Bernard, Canton of Valais, Switzerland.

**Pictures for Government Offices.**—The Cabinet Room at the Foreign Office has just been enriched by two interesting historical paintings—one of Spencer Perceval, by G. F. Joseph, A.R.A., and the other of the Earl of Bath, which is attributed to Sir Joshua Reynolds. The Cabinet Room adjoins the beautiful reception-room in which were hung not long since the full-length oil paintings of William IV. and Queen Adelaide, which were unearthed in an old curiosity shop in London by Viscount Esher, the Secretary to the Office of Works. There have also been placed in the official residence of the Chancellor of the Exchequer in Downing Street four interesting portraits—Sir Francis Burdett, by T. Phillips, R.A., William Windham, by Sir T. Lawrence, R.A., Richard Cobden, by Fagnani, and Henry Pelham, by W. Hoare, R.A.

## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### CABMEN'S SHELTERS.

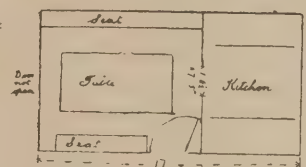
To the Editor of THE BUILDERS' JOURNAL.

CARDIFF.

DEAR SIR,—Could you let me know where I may obtain designs for "Cabmen's Shelters."—Yours faithfully,

W. B. E.

Appended is a sketch plan and elevation of the exceedingly picturesque "Shelter" at the



CABMEN'S SHELTER IN NORTHUMBERLAND AVENUE, S.W.

junction of Northumberland Avenue and the Thames Embankment. All others about London are similar. G. A. T. M.

### TYPEWRITERS FOR SURVEYORS.

To the Editor of THE BUILDERS' JOURNAL.

DUNDEE.

SIR,—Can any of your readers state from experience the best make of typewriter for use in a surveyor's office for typing schedules of quantities, and duplicating to, say, ten copies? EXPEDITION.

If any of our readers who use a typewriter for this work care to relate their experience for the benefit of our correspondent, we shall be pleased to publish it. Our idea is that any of the standard machines where the writing is visible would be suitable for such work; the "Bar-lock," we believe, has a special arrangement for tabular work.

### BOOKS FOR BUILDING CONSTRUCTION STUDENTS.

To the Editor of THE BUILDERS' JOURNAL.

PRESTON.

DEAR SIR,—I intend to go in for the Honours stage of the Science and Art Examination in building construction next year.

Will you kindly tell me through your valuable journal which book or books you consider are the best for my purpose. Kindly name price and publisher and oblige.—Yours truly,

X.

"Building Construction," vol. III. (Longmans), 21s.; "Specification" (Talbot Newspaper Company), 5s.; Middleton's "Stresses and Thrusts" (Batsford); Hamlin's "History of Architecture" (published in America, but can be obtained from B. T. Batsford, 94, High Holborn, W.C.), 9s.; Seddon's "Builder's Work" (Longmans), 16s. G. A. T. M.



## Bricks and Mortar.

July 12th, 1899.

"I know what it is to live in a cottage with a leak floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### The Parks Committee Dissatisfied.

It will be remembered that the London County Council decided to retain on the new recreation ground at Bromley-by-Bow the old Tudor house, familiarly known as Rutty's house. The Parks Committee are evidently not in favour of this decision, as they intend to make a further effort to effect its removal. They say that having again visited the building they are still of opinion that it should be removed. They think that any member of the Council who inspected the house would find it impossible to vote for its preservation. The area of land, including the site of the house, is less than  $1\frac{1}{2}$  acres, and they consider it undesirable that such a small space in a thickly crowded district should be restricted by allowing any house to remain upon it. The house is in such a dilapidated state, they say, that to restore it would practically mean rebuilding it, and most of its historic interest would be lost. If the building is retained for the purpose of being used as a public library such structural alterations will have to be made that few, if any, of the interior fittings will remain. In these circumstances it seems that the best thing to do is to follow their advice, as if restoring the house practically means rebuilding, very much of the sentimental interest in it will be destroyed as completely as if it was demolished.

### The Trust and Increased Cost.

At the recent meeting of the National Trust for Places of Historic Interest, the Bishop of London drew attention to a case in which the interposition of the Trust had led to increased cost in the restoration of a church. It appears that St. Mary, Stratford-le-Bow, a church dating from the fourteenth century, and one of the few old buildings of real architectural merit in East London, had fallen into a very bad state of repair, and a new rector found opportunity to affect a much needed improvement. Plans for its restoration were prepared, but they did not meet with the approval of the Trust or the Society for the Protection of Ancient Buildings. The Bishop of Stepney, who was actively promoting the work, courteously accepted the suggestions of these bodies, and placed representatives on the committee. One consequence was that the expenditure ran up to nearly £5,000, and there still remains £1,800 to be raised. As can easily be believed there was great difficulty in raising the money in such a district. Of course, the action of the authorities in accepting these alterations was quite the right way of dealing with such an important matter, and these Societies will, we trust, bear most of the extra expense, for if they do not it will not be encouraging to others to seek their aid or allow of their interference.

### New Birmingham Art Gallery.

THE Birmingham City Council at their meeting on the 4th inst., decided to engage the services of an architect to assist them with sketches and plans, and act as assessor on the final plans in the event of competition for the proposed new art gallery and municipal offices. The present art gallery is found to be too small for the adequate display of pictures, necessitating the assembling together of works, which, in such association, kill each other, and instead of providing means of education to the student, are really a source of confusion. It is proposed to utilise the Edmund Street site, recently acquired, by erecting a new picture gallery on the other side of Edmund Street, and maintaining the present gallery as an industrial museum. The proposed new gallery must necessarily have a top-light and be on an upper floor, and it is therefore proposed that the ground floor and basement which will then be placed at disposal should be utilised for the Health Department and the Water Department, for whose requirements additional accommodation is imperatively necessary. This would free the offices now occupied by the Health Department for the extension of the Public Works Committee's quarters. The General Purposes Committee have now been authorised to go to an architect and obtain a sketch plan of a building to cover about 17,500 square feet out of the total area of the site and providing for an Art gallery and offices for the Health Committee and Water Committee. They will come before the Council with a mature proposal, and take instructions as to by what process a final architect should be chosen. It is in contemplation to consult Mr. Aston Webb, architect of the Victoria Courts, who was stated to be prepared to assist them with sketch plans, and to act as assessor on the final plans in the event of competition, Mr. Webb himself being precluded by the pressure of his other professional engagements from submitting more than preliminary plans.

### Art Classes in Birmingham.

THE Birmingham School of Art Committee contemplate opening, at the Vittoria Street Branch School, afternoon classes in drawing, modelling in clay and wax, and modelled design. The classes would be mainly for those engaged in the jewellery and kindred trades, and would be held on three afternoons a week during the school year, at least from the second Monday in September until the beginning of May, each class lasting for two hours. The class fee proposed is 7s. 6d. per term of fifteen weeks, i.e., 15s. the school year, subject to a deduction of 2s. 6d. when paid in advance for the whole school year. All classes will be open to students of both sexes. On the Continent day classes for young work-people have already been established with excellent results. In Paris, for instance, apprentices are allowed to attend day classes in connection with Chambre Syndicate de la Bijouterie, Joaillerie, Orfèvrerie; in this case no deduction is made from the apprentice's wages, and the fee is, as a rule, paid by the employer, and in Germany some industries are allowed two afternoons a week free from any fee for attendance at technical classes. We hope that the committee will secure the requisite number of fifty students to make this scheme possible.

### The National Portrait Gallery.

THE forty-second annual report of the trustees of the National Portrait Gallery has just been issued. The trustees desire to record their great regret that, owing to failing health, Mr. Leslie Stephen, who was appointed a trustee in 1896 in place of the late Mr. W. E. Gladstone, has been compelled to resign his seat on the Board. The treasury has appointed Lord Balcarras, M.P., to fill the vacancy caused by Mr. Leslie Stephen's resignation. Among the donations acknowledged is a portrait of the late William Eden Nesfield (1833-88), who is described as "the eminent architect, whose influence has been so great in the development of Architecture in England," taken in Rome in 1859 by M. Jacob Edouard E. Brandon, presented by Mr. John Hebb.

This is the original of the lithographed portrait published in the July number of the *Architectural Review* for 1898; it is in the original black oak frame, from a design by Mr. Nesfield, and has a characteristic inscription at the back in his handwriting. A portrait of Mr. Robert Mylne, F.R.S. (1734-1811), architect to the New River Company, and the designer of old Blackfriars Bridge, is included in the list of portraits purchased.

### Institute of British Decorators.

At a meeting of the General Council of the Incorporated Institute of British Decorators held at the registered office of the Institute, Painters' Hall, Little Trinity Lane, E.C., on Thursday, June 29th. It was resolved, "That this meeting desires to express its unanimous regret that the decorative treatment of the interior of St. Paul's Cathedral, so far as it has been carried out, has paid too little respect to the Architecture, and tends to disturb the structural effect, to the expression of which it should be the function of coloured decoration to contribute." Some seventy applications for new membership were brought before the Council at this meeting, and about fifty of the applicants were elected fellows, and a few were elected associates of the Institute. Amongst the members accepted by the Council were Messrs. John Jackson and Edward Francis Jackson, of the firm of George Jackson and Son, of 49, Rathbone Place, W.; Mr. Samuel Alon, of the firm of Hampton and Sons, Pall Mall, East; Mr. Ernest Ruscoe, of the firm of Clark and Mannoch; Mr. Charles Albert Hindley, of the firm of Hindley and Wilkinson, Ltd., of 70, Welbeck Street, W.; Messrs Whitehead, Bros., of Wimbledon; Mr. Thomas Kershaw Bonnar, of the firm of Bonnar and Son, of Edinburgh; Mr. H. Liley, of Radnor Place, and others. Mr. Wilfred Nicholson of the Painters' Company, was elected an honorary member. Applications were also received from New Zealand and Bombay, and from various parts of England, Scotland, and Ireland. About 300 decorators have now joined the Institute.

### Architectural Association of Ireland.

THE annual excursion and dinner of this Association took place on Saturday, July 1st. These excursions are arranged for the purpose of studying and sketching both old and modern work, it was decided this year to visit Chester, so as to afford members an opportunity of becoming more closely acquainted with the half-timber style of buildings for which that city is world-famed. The party, numbering thirty, left Dublin on Friday night. Saturday morning was devoted to the Cathedral, where the members were welcomed by the Dean, who kindly drew their attention to the chief points of interest in the building. The cloisters and the beautiful carved woodwork in the choir were greatly admired; but the interior of the Cathedral has suffered somewhat from injudicious restoration. After lunch the party made a tour of the city under the guidance of Mr. Minshall, of the firm of Douglas and Minshall, the well-known Chester architects. This gentleman spared neither time nor trouble in his efforts to assist the visitors. The annual dinner was held in the evening at the Green Dragon Hotel, the President, Mr. George Sheridan, A.R.I.B.A., in the chair.

### Fireproofing Building Material.

In connection with the discussion that has for some time past been going on as to the best method of rendering building material proof against fire, Fire Chief Swenie, of Chicago, a man of wide experience in this line of observation, says it makes little difference whether the house is built of steel girders or not; the danger in such houses as the Andrews home, for instance, is from the great quantity of oiled and varnished woods in the interior, and the rugs and inflammable draperies, the fact being that fire is liable, of course, to start in the basement of any house and the accumulated gases cause an explosion that will burst out the windows and set fire to everything inflammable inside. Furthermore while chemically treated wood is often fire

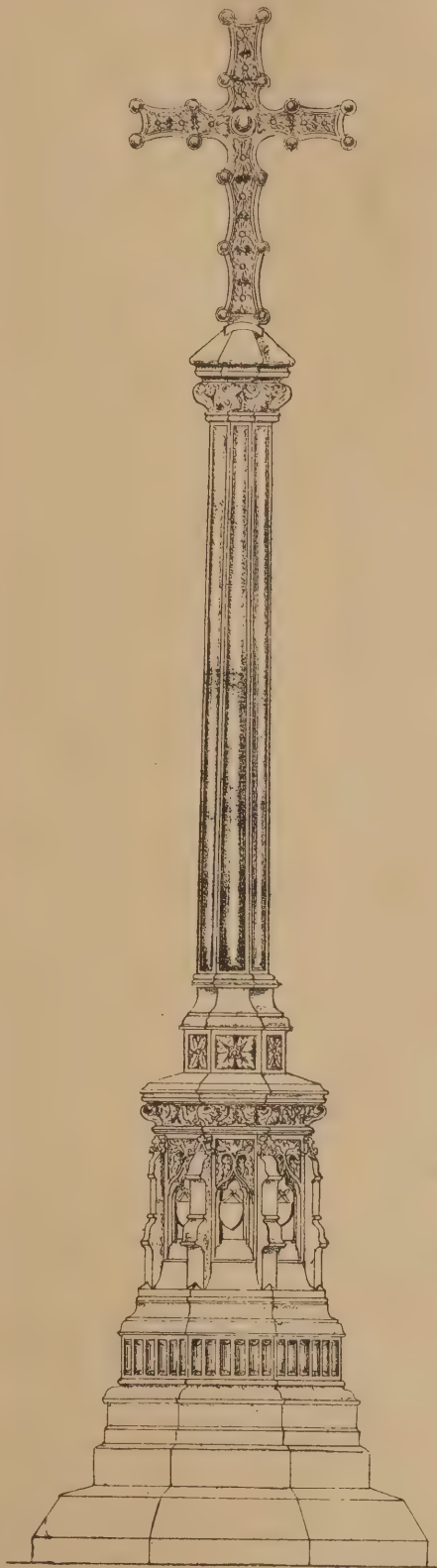


proof at first, the trouble is that the fireproof quality is not permanent—oxidation goes on all the time, and after a while the preparation loses its effect, the most that it can do being to retard combustion. Mr. Swenie emphatically declares that preparations of this sort are of no value in dwelling house interiors, and that the chemicals cannot be used on woods that are intended to be polished.

**An Archaeological Outing.** SOME fifty members of the Archæological Society had a pleasant excursion to the Sedgemoor churches last Saturday week. The party first proceeded in breaks from Bridgewater to Chedzoy, where the fine old church dedicated to St. Mary was inspected, Lieut.-Col. Bramble explaining the chief points of interest. The many curiously-carved quaint oak bench ends were especially pointed out, whilst the very finely-worked altar frontals, made from an ancient cope discovered under the pulpit during the restoration of the church and a fifteenth century brass, were much admired. The church is of Gothic structure, and is architecturally beautiful. On a buttress on the south side of the church is a sandstone, on which scythes were sharpened by the rebels previous to the battle of Sedgemoor. The tower is a fine one, and there are also several dedication crosses in good condition. The company then drove past the site of the battle of Sedgemoor to the fine old church of St. Mary, Weston Zoyland, where Colonel Bramble pointed out there were the typical Somerset waggon roof and the compass roof side by side. The carved oak benches and the beautiful tower which this church possesses were also explained. It was in this church that hundreds of the rebels were imprisoned after the Sedgemoor fight, and the curious charges for food, &c., for the use of those confined are set forth in an ancient book belonging to the church. Another couple of miles drive brought the archæologists to the Church of the Holy Cross, Middlezoy, which is an exceedingly interesting edifice. It has a splendid oak Jacobean pulpit of 1606, a beautifully carved oak wood screen (early fourteenth century work), a font of the same date, a hagioscope, and a small window, about the use of which archæologists differ. The tracery in the chancel window of this church is generally considered to be the finest of any church in Somerset.

**Wesley's Chapel.** FRIDAY was a busy day at Wesley's Chapel, City Road, London, which was then reopened after having been completely restored and decorated at a cost of nearly £4,000. The decoration of the chapel had never been completed, although its scheme was known. In addition to the old preaching house, Wesley's home and death-place needed attention, for it was closed and practically uninhabitable, and new accommodation was required for those attending the Conference and other large gatherings held at the chapel. Five memorial stones were laid on Friday in celebration of the restoration of the chapel, the opening of new buildings, the dedication of Wesley's House. In the afternoon a bust of the late Rev. Dr. Wm. Fiddian Moulton was unveiled. At a cost of £2,450 new buildings have been erected near the chapel, containing reception-rooms, retiring-rooms, and cloak-rooms; £1,057 has been spent on internal decoration; the front has been pointed down and cleaned, and the portico, with its six medallions bearing the dove and olive branch, has been cleansed at an outlay of £246; and £200 has gone in incidental expenses. The chief work has been the internal decoration of the chapel, which has been carried out with taste and feeling by Messrs. Gordon, Lowther, and Gunton. The dominant note is simplicity, white and gold being the only colours employed. The domed ceiling is pure white until the centre-piece is reached, from which is suspended a graceful electric chandelier. At the corners are raised cherubim and rayons, which have been gilded, and stand out delicately against the white background. The wall tint is a faint green with relief in gold.

**The "Burke" Memorial.** THE measured drawing illustrated on this page is of the cenotaph, erected by public subscription, in Glasnevin Cemetery, Dublin, in memory of the late Mr. Burke, Permanent Secretary for Ireland. It is considered to be one of the most beautiful designs for a memorial of the dead, in existence in any of the cemeteries in the United Kingdom, and was designed by a Dublin



THE BURKE MEMORIAL, GLASNEVIN CEMETERY, DUBLIN. MEASURED AND DRAWN BY T. W. AYDON.

architect, Mr. Drury. The plan throughout is octagonal, except the cross, which is square. The materials used in its construction are blue and white Irish limestone, tastefully arranged in courses, so as to give the most pleasing effect in colour; the central or main

shaft is of polished dark grey granite. Mr. T. W. Aydon's drawing shows how perfectly proportionated a piece of monumental Architecture this memorial is. The monument deserves a better site to stand upon, for at present it is somewhat difficult to find, being placed in rather an obscure position; to the right from the main entrance to cemetery.

**German and Flemish Painters.** AT the Manchester Art Museum, Ancoats, last week, Mr. T. Collins, the curator, delivered an address on "German and Flemish Painters." He said Albrecht Dürer and Hans Holbein were the bright expositors of the German Renaissance, and gave in their fullest strength and directness the general trend of the national mind. They embodied the accumulated influences of all that was implied by the revival of learning. Italian artists lost themselves in the myths and sensualities of pagan Rome and Greece. The artists of the Low Countries went forward interpreting the new era in their own strong, realistic way. The brothers Van Eyck, of Bruges fame, with their subtle colouring, infinite patience in detail, combined with technical excellence, carried Flemish art to its highest level. The death of Memling deprived Bruges of its last real representative. His works were noted for the peculiar purity of their colour, and the piety and simplicity of his religious subjects. The famous blacksmith Matsys, of Antwerp, was the founder of the Netherlands school of painters. His work was a combination of the old and new styles; it embraced and excelled the colouring of the Van Eycks, the purity of feeling of Memling, and the elaboration of Rubens. Ruskin had described Rubens as "a wealthy, worthy, kind-hearted and courtly-phrased animal, without any soul." In the bold conceptions of his pictures, the daring schemes of colour, he approached Veronese, and in the drawing of mere outward form he was unrivalled. Teniers was a most prolific painter; he seemed to have viewed life with the eyes of a serio-comic artist. As a delineator of the lighter side of human social life he had no equal.

**Old Sauchie Manse House.** THIS old roofless ruin adjoining the estate office at Sauchieburn is being put in a state of preservation, for it had become dangerous owing to ivy, which had become so strong that it had penetrated through every nook and crevice of the building, filling up the vents and bulging out the walls. When the building was originally erected it had occupied two sides of a square, with the door in the angle, and consisted of an entrance hall, with the main stair leading up to the first floor. The rest of the ground floor was arched over, and the light penetrated the vaults from slits in the external walls. Over the vaults were placed the living rooms, and over these the bedrooms. Turrets with fine moulded corbelling are placed on each of the corners of the north elevation, while in the centre of the east wall a bow window, carried on similar corbelling, contained the turnpike stair which led to the bedrooms. Another turret had at one time existed on the south-west corner of the entrance hall, but this had been removed at some previous alteration. The kitchen and offices of the old mansion have been incorporated into the present estate office, but the kitchen fireplace still remains, and is large enough to have roasted an ox whole at one time. In carrying out the work of preservation it was found necessary to tie the walls of the entrance hall together with malleable iron tie-rods. Parts of the walls which had fallen down, and other parts which had become loose, had to be taken down and rebuilt. The whole of the walls outside and inside were pinned and pointed with Portland cement. The accumulations of many years had to be removed from the top of the vaults, which were levelled up and covered with concrete to preserve the arches. The work is now nearing completion, and shows a very fine specimen of the domestic architecture of the latter end of the sixteenth century.



## Professional Practice.

**Beeston.**—Memorial stones of a new Wesleyan Mission Chapel were laid last week at Beeston. The building is to occupy a site on Queen's Road, immediately in front of the present school chapel, and is designed to accommodate a congregation of over 400, the dimensions being 52ft. by 43ft. across the transepts, and 34ft. across the nave. The chapel is designed in the Gothic style, and will have a traceried window in the front gable, flanked by a porch on one side, containing stairs to the gallery, and on the other side by a square tower terminating with a spire running to the height of 62ft. The roof will be partially open, with arched work under the timbers and pitch-pine ceiling. The glazing is to be of Cathedral glass with ornamental leaded lights, and the internal fittings will be of pitch-pine. The chapel will have two vestries, for the minister and choir, and a recessed arch behind the communion table will form a small chancel, on one side of which the organ chamber will be situated. The architect is Mr. John Wills, F.S.Sc., of Derby and London, and the contractor is Mr. W. Edwards, of Derby.

**Coatbridge.**—The fine new church of St. Augustine, erected by the Roman Catholic congregation, Langloan, Coatbridge, was opened recently. The building is in the Early

builders were received, the amounts at which they were willing to carry out the work varied from £6,225, the highest, to £4,071, the lowest, at which sum Messrs. Kerridge and Shaw offered to complete it. Mr. Alderman Paxman generously offered the sum of £2,000, which he subsequently increased to £2,500, in view of the reduced estimate, making the tower, the construction of which at one time seemed doubtful, a possibility. The Committee recommended the Council to accept the tender of £2,965 12s. of the contractors of the main building, Messrs. Kerridge and Shaw. With regard to the hall and main staircase, a project had been gone into for an ornamental marble hall with columns and staircase, at a cost of about £5,000, under a suggestion which had reached the Committee that it might be carried out by the munificence of a private donor. This led to the omission from the contract of certain parts of the needful work for this part of the building as reported in November, 1898, by the architect, Mr. John Belcher, F.R.I.B.A., who then stated that, as these expectations had not been fulfilled, it would be necessary to deal with this matter in a short time, and make the requisite provision. Having considered the matter, the Committee recommended the Council to accept the lowest tender, that of Messrs. Farmer and Brindley, of London, of £1,086 10s., for constructing the main staircase in marble and supporting and fixing four marble columns for the staircase. The fourteen columns for the hall in Bath

Ernest E. Ellis, of Market Street, Exmouth, is the architect.

**Hanley.**—The foundation stone of a new church of the recently-constituted parish for St. Jude, Hanley, was laid last week. The new church will consist of a nave with aisles on either side, a chancel with organ chamber and vestry on the north side, and a morning chapel on the south side. The nave will be 80ft. long, 30ft. wide, and 35ft. high to the eaves, and 53ft. to the ridge. It will be separated from the aisles by five arches of stone and brick on either side, springing from stone piers. At the west end of the south aisle will be the baptistery. The chancel will be a continuation of the nave without break. The building will be of red brick with stone dressings to the windows and doors. The roof will be tiled. A small spire, containing an exhaust ventilator, will break the length of the ridge at the junction of the nave and chancel. The church will be seated for 800 worshippers, and the cost of the building is estimated at £7,000. The site, which cost £1,050, is situated at the corners of Beresford Street, Seaford Street, and Victoria Road. Messrs. Scrivenor and Sons are the architects.

**Leeds.**—The Leeds School Board have just erected buildings in Blenheim Walk, Leeds, for the purpose of a home and schools blind and deaf children, and these were opened last Wednesday. Covering an area of 1200 square yards, and designed in the Gothic style, the building has an impressive appearance. It is three storeys in height, faced with pressed bricks with sand-stone dressings, the central entrance being of Morley stone. Each department is separate and distinct for teaching purposes, and easy of approach to the domestic department. Five staircases from the ground floor lead to the separate departments, and in addition there are exit corridors, and a staircase from each department to the playgrounds. Accommodation is provided for 108 boarders (59 blind and 49 deaf children), and 100 day scholars (30 blind and 70 deaf); the blind children are all to be taught on the ground floor, and the deaf children on the floor above. The central entrance and staircase divide the educational part of the building from the domestic part. To the right is the blind assembly hall 59ft. by 29ft., with seven class-rooms, each 20ft. by 15ft., a workroom about the same size, and four music rooms. To the left is a waiting room, superintendent and matron's room, committee-room, and dining hall, with cooking kitchen, scullery, pantries, servants' kitchen, &c. All these are on a commodious scale. The first floor is very similar in arrangement, and has an assembly hall, eight class-rooms, a sewing-room 26ft. by 20ft., blind boys' dormitory, bath-rooms, and lavatories. The whole of the second floor is set apart for boarders and staff. All the staircases are of stone, and the main corridors and the floors over the boiler-house, landings, and apparatus-rooms are fireproof. Every apartment is well lighted from wide areas, and there is a complete installation of electricity. A special feature is the arrangement for heating and ventilating, which has been carried out by Mr. Key, of Glasgow, on the "Plenum" system. Fresh air is driven in by means of two fans worked by a Bellis engine, the air having first passed through a screen of cocoanut coil to deprive it of smuts and other impurities. In cold weather the air is first heated to a mechanical nicety by means of hot water pipes, and the atmosphere of any and every apartment can be renewed at least a dozen times in the hour. Mr. W. S. Braithwaite has been the architect, and the brick, stone, and joiner's work has been carried out by Mr. J. H. Wood. The total expenditure has been close upon £30,000.

**London, S.W.**—King's College School new buildings at Wimbledon were opened last week by the Duke of Cambridge. The new buildings consist on the ground floor of six new class-rooms, each 24ft. by 17ft., and 12ft. high. These are connected with the old school buildings by a wide corridor. On the upper floor is the great



ADDITIONS TO KING'S COLLEGE SCHOOL, WIMBLEDON. THE LATE BANISTER FLETCHER AND BANISTER F. FLETCHER, ARCHITECTS.

Decorated style, with nave and aisle, chancel and chapels on either side. The nave is divided into seven bays. There are the usual recesses for confessionals and a baptistery. The west gable has a fine large rose window, richly traceried. The entrance is through deeply-recessed arches and there is a niche containing a statue of the patron saint of the church. There is a gallery for the choir and organ in a transept off the south aisle. The internal length of the church is 128ft., the width being 60ft., and the height 60ft. The church accommodates about 1000 persons, and has cost about £10,000. Messrs. Pugin and Pugin, of London, were the architects.

**Colchester.**—The Victoria Tower in the New Town Hall at Colchester was the subject of a special report by the Committee at the meeting of the Town Council last Wednesday. This structure, from the parapet to the summit, comes under the category of ornamental work, and had, therefore, to be provided by private munificence, and not from the rates. When, in November last, the tenders from the

stone were tendered for by Messrs. Kerridge and Shaw for £94 10s., which the Committee recommended should be accepted. An anonymous donor had offered £250 towards the cost of this work. The report was adopted. It was also announced at the meeting that Mr. W. Nocton had offered a gift for the decoration of the new Town Hall, while Mr. Arthur Ager had promised to present a pair of standard lamps for placing at the front entrance, at a cost of £85, a cheque for which amount had already been received. Mr. Dennis Jeffery had also offered a clock suitable for the Moot Hall or one of the principal rooms in the building.

**Exmouth.**—A very large building, composed principally of iron, wood, and glass, is to be erected at Exmouth for horticultural purposes. The structure will be over a quarter of a mile in length, and of an ornamental character, with a dome in the centre nearly 80ft. high, and towers at intervals about 45ft. high. The width of the building in the centre will be 44ft., and at the narrowest part 26ft., and will be heated with hot water. Mr.

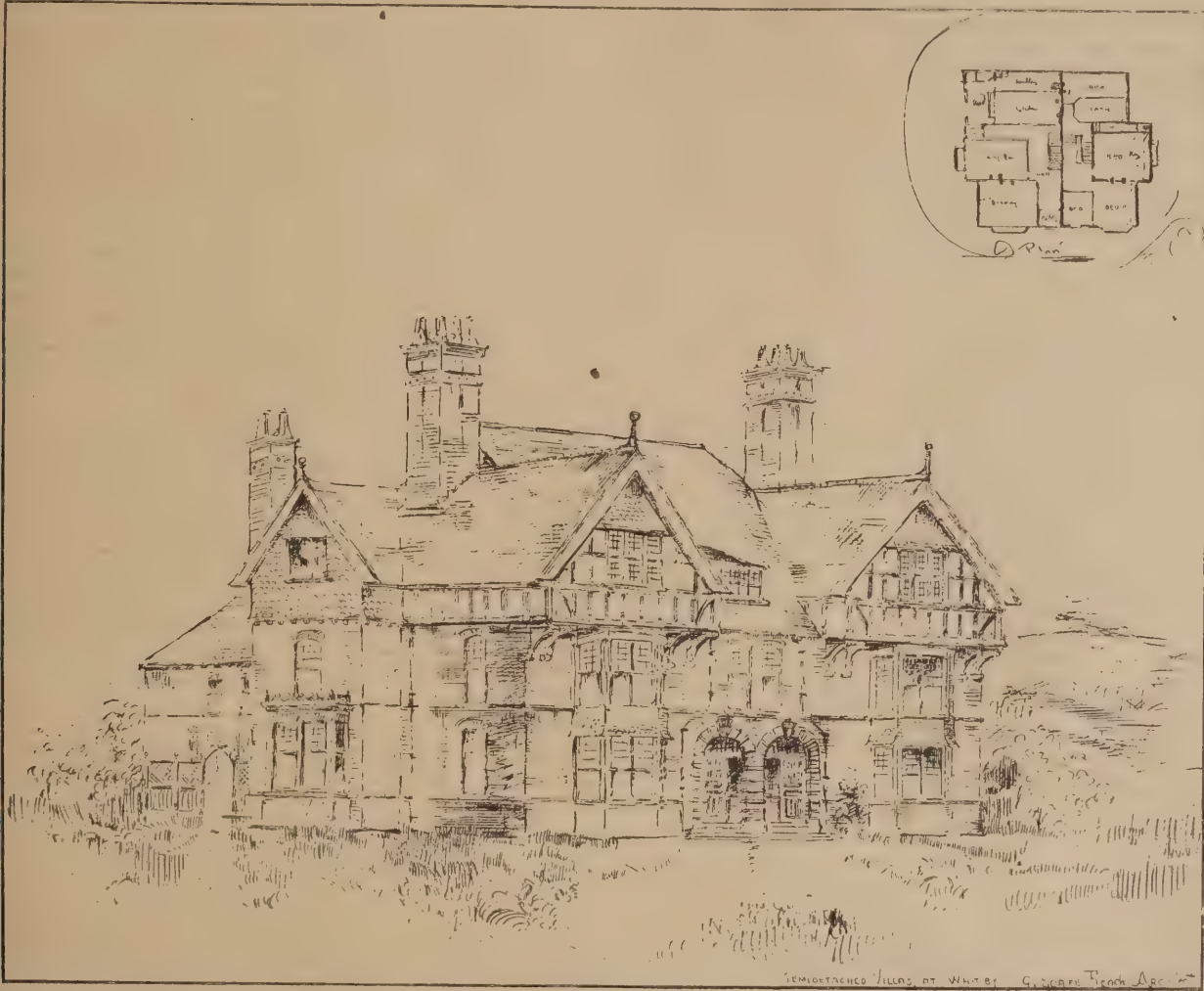


all, which is 84ft. by 42ft., and is very lofty. It is covered with a decorative open timber roof of queen-post type. The walls of the hall are of red brick, and the roof is stained a dark colour. It is intended to place a gallery across the entrance end of the hall. The exterior of the building is faced with red bricks. The mullioned and mullioned windows are executed in Corsham Down stone. Messrs. Flint Brothers, of Kennington, did the stone work and carving. The architects were the late Professor Banister Fletcher, F.R.I.B.A., and Mr. Banister F. Fletcher, A.R.I.B.A.

**London, N.W.**—The competition for new baths and warehouses at St. Pancras was limited to six competitors, who were Messrs. Arnor and Pinches, Spalding and Cross, Rensson and Son, R. Stephen Ayling, F. J. Smith, and T. W. Aldwinckle. Each competitor received an honorarium of £50. The site with which the competitors had to deal is awkward in shape and limited in area for the

**Loughborough.**—Foundation stones of a new Wesleyan Chapel at Loughborough were laid last week. The site has a frontage of 62½ft. in Ashby Road, with a depth of 100ft., the area being 690yds. The dimensions of the school chapel will be 68ft. extreme length and 33½ft. in breadth, 52ft. across class-room to transepts. The material for outside walls is brick, and the style of Architecture modern Gothic. There will be no galleries, but seating accommodation is to be provided for 260 adults. There will be six spacious class-rooms and one vestry. Adjoining the site 604 square yards of land have been purchased, with a view to reserving the same for a new chapel, the cost of the land amounting to £280. The minister's house will have a frontage to the site on Radmoor Lane of 36ft., and to the side street of 68ft. 9in., the area being 250yds., and is to be erected of brick, in keeping with the contiguous school chapel. The dimensions of the minister's house are to be 34ft. in length and 32ft. in breadth, and it will

view of the stage and proscenium is obtained. The style of decoration is Oriental throughout, with a profusion of brightly gilt and coloured artistic designs in plastic. The grand circle has seating accommodation for over 200 people. Behind the stalls, and separated from them by an upholstered barrier, is the pit, which has a waiting room in connection with it. The seating here consists of upholstered forms. The balcony, which is above the grand circle, is commodious, and contains similar seating arrangements to the pit. Behind it is the gallery. There are lavatories and other conveniences all over the house, and the exits are well arranged; the theatre will hold, roughly, about 2,500 persons, and this number can be cleared out in the remarkably short space of one and a half minutes. The stage, which is very conveniently arranged, measures 56ft. by 35ft. The auditorium is 80ft. by 54ft. wide, and the height of the building from the floor of the auditorium to the top of the dome is 80ft.



PAIR OF SEMI-DETACHED VILLAS AT WHITBY. G. SCAIFE FRENCH, ARCHITECT.

amount of accommodation they were asked to provide. It has frontages to roads on three sides, the Prince of Wales Road on the south and being the shortest frontage, while the other two frontages in Willes Road and Afton Road are long. The accommodation required is two swimming baths for men, each 50ft. by 35ft., a first-class women's swimming bath 75ft. by 20ft., and a second-class women's swimming bath, 50ft. by 20ft., a large number of shower baths, and a complete washhouse and laundry. The first-class men's swimming bath is also to be used as a public hall. £10,000 is the sum to which the cost has to be limited. Mr. T. W. Aldwinckle's designs, which have been selected, show the men's entrances in Prince of Wales Road, giving a separate entrance to each class. The women's entrance and washhouse entrance are in Afton Road. The first-class men's shower baths are in the basement, and the women's shower baths are on the first floor.

have three floors and basement. The various apartments will be spacious and lofty. The total outlay on the minister's house will be £1,025, including £125 cost of the site, whilst the school chapel will incur an expenditure of £1,600, inclusive of £345 for site. Messrs. Barrowcliffe and Allcock are the architects, and the contract for the work has been let to Mr. W. F. Harding, whilst the necessary brickwork is in the hands of Messrs. William Moss and Sons.

**Newport, Mon.**—The new Empire Palace of Varieties was opened last week. The building is a thoroughly up-to-date music-hall, and has been erected at a cost of about £20,000. The work has been done according to the designs of Mr. Frank Matcham. One good feature in the design is the provision of sufficient accommodation, not only in the house itself, but in the entrance halls. This is obtained by a liberal provision of crush rooms. From the crush room an excellent

The utmost care has been taken to make the building fireproof, the stage and dressing-rooms being separated from the auditorium by a fireproof curtain and iron doors.

**Whitby.**—The pair of semi-detached villas illustrated on this page have just been completed. They are built in Argyle Road, Whitby, near the sea, for Messrs. J. Rennison, of Darlington, and T. W. Rennison, of Whitby. The buildings are faced with pressed bricks, moulded strong courses, stone dressings, &c., and the gables are framed in heavy pitch pine, and cemented. The principal rooms and staircases are elaborately finished in pitch pine. Mr. Palpaman has executed the mason and bricklayers' work, Mr. J. Porritt the joiner work, Messrs. Smithson and Taylor the plastering, and Mr. Rennison the plumbing work. Mr. G. S. French, of West Terrace, Whitby, is the architect, and the work was carried out under his supervision.



## THE R.I.B.A. EXAMINATIONS.

The following candidates at the June, 1899, Examinations of the Royal Institute of British Architects have passed:—

### Preliminary.

S. J. W. Adkins, Hastings; R. J. Archibald, Middlesbrough; T. M. Arthur, Airdrie, N.B.; R. A. Barber, Reigate; A. J. Barclay, Montrose; W. J. R. Barker, Manchester; H. C. Bartholomew, Eastbourne; T. A. Beavan, Cardiff; F. R. Berry, Lincoln; C. T. Bevis, Southsea; H. J. Bonwick, London; G. A. Boswell, Wolverhampton; F. E. Bowdler, Shrewsbury; H. M. Bowes, London; H. P. Briggs, London; F. H. Bromhead, Tipton, Staffs.; C. F. Callow, St. Leonards-on-Sea; V. Calvert, Bradford; W. N. Castelloe, London; R. P. Chamberlain, Leicester; C. B. Cleveland, Cambridge; W. B. Colthurst, Taunton; R. O. Constant, Eastbourne; G. H. Crane, London; B. E. Crockett, London; H. G. Culver, London; W. R. Davison, London; D. W. Day, Leicester; H. Dawson, Sheffield; W. J. Delbridge, London; Miss C. M. Dale, Buxton; A. P. Dowglass, Reigate; E. H. Edleston, Manchester; J. A. G. Elliot, Edinburgh; E. M. Ellis, London; T. C. Evans, Hanley; N. B. Fairweather, London; J. W. Farmer, London; W. H. Garwood, Norwich; J. J. Glendinning, Halifax; L. M. Gotch, Kettering; E. T. Goff, Lowestoft; H. J. Gravenor, London; C. I. Greenhow, Newcastle; E. G. H. Gunn, London; H. Hall, Hastings; T. W. Hamilton, Greenock; J. L. Hampson, Bolton; T. G. L. Hanks, Reading; E. L. Haynes, St. Albans; J. H. Hargreaves, Manchester; F. W. Hayward, Taunton; A. W. Heath, Eastbourne; James Henry, London; J. B. Hector, Aberdeen; P. T. Hildesley, London; B. C. Hill, Bristol; H. Hill, South Shields; Miss F. F. Hobson, Belfast; A. F. Holden, Chesterfield; W. F. C. Holden, Cambridge; G. O. Howship, London; C. J. S. Holcombe, London; R. J. Hughes, Llanfairfechan; F. J. Humphrey, Worthing; C. W. Hitchcox, Newport, Mon.; O. Ingham, Elland, Yorks.; R. W. Ingleby, Sunderland; T. W. Jacobs, Cardiff; G. H. Jackson, Bournemouth; J. M. Jenkinson, Sheffield; E. N. Johnson, Newport, Mon.; R. Johnston, Swindon; L. Judge, London; E. M. Joseph, London; E. R. Kennedy, Belfast; L. Kesteven, London; F. Lansdown, Lincoln; M. C. M. Leggett, Reading; T. S. Lello, Sheffield; L. Long, London; R. Longden, Burslem; C. G. McDowell, Dublin; J. N. K. McKilliam, London; A. D. MacLaren, Manchester; S. Maddock, Frodsham, Cheshire; W. P. Major, Somerset; A. J. Marshall, Windsor; R. P. Marshall, Sheffield; J. I. Massey, Bolton; J. G. P. Meaden, London; F. Meakin, Derby; H. E. Moore, Redcar, Yorks.; J. A. Millar, Glasgow; H. S. Morris, London; E. J. Mundell, Poole, Dorset; J. Myers, London; N. T. Myers, Watford; W. R. Osborne, Swindon; F. Osler, Halifax; J. Owen, Blaenau Festiniog, Wales; W. B. Oxley, Leicester; C. E. L. Parkinson, Chelmsford; A. G. Parker, Worcester; C. T. S. Paul, Bristol; C. H. Perkins, Wokingham; P. C. Pilling, Bolton; Alan Potter, London; Miss B. Potts, Banbury; J. C. Procter, York; J. W. Ramsbottom, Stockport; K. H. Read, Reading; F. S. Reynolds, Birmingham; H. J. Richardson, St. Leonards-on-Sea; H. P. Roberts, Cardiff; A. Round, Birmingham; W. S. Rumsby, Bournemouth; G. S. Salomons, Manchester; F. Sanderson, Guisbrough; J. M. Sheppard, London; A. W. Sherwood, London; G. D. B. Shepherd, London; C. F. Skipper, London; C. H. Smith, London; A. Smithers, London; E. G. W. Souster, Northampton; J. A. Speir, Cardiff; H. Spencer, Notts.; W. R. Spurr, Batley; F. A. Sprules, London; E. Stockwell, Leeds; R. H. Stone, London; M. J. Styles, Rugby; F. Sutton, Reading; W. H. Swann, Nottingham; J. R. Sykes, Brighton; T. J. Tatham, London; J. H. Taylor, London; C. J. Thompson, London; C. Thorp, Manchester; F. J. Toop, Lincoln; J. N. R. Vining, London; T. W. Watkins, Ramsgate; J. Wilcock, Shipley, Yorks.; J. E. Wilkinson, South Shields; F. Willey, York; S. G. N. Willson, London; W. H. B. Wright,

Lincoln; C. S. Yates, London; Thos. Young, S. Shields; L. S. Youngman, Bournemouth.

### Intermediate.

C. L. Fleming-Williams, London; L. G. Detmar, London; Douglas Wood, Hull; J. W. Grove, Reigate; H. W. Cubitt, Lowestoft; S. J. Halse, London; I. M. Kent, Norwich; L. L. Bright, Nottingham; A. E. Robertson, London; T. H. Gibbs, London; H. D. Simpson, Edinburgh; E. B. Norris, Birmingham; W. M. Dean, Gravesend; P. J. Haywood, London; H. B. Mackenzie, Cardiff; M. Stillman, Cheltenham; R. R. Gall, London; H. A. Rowbotham, Denbigh; C. E. Monro, Glasgow; H. W. Hobbiss, Birmingham; S. R. Oakes, Manchester; W. St. Leger Crowley, Cardiff; P. A. Hinchliffe, Barnsley; W. J. Davies, London; A. M. Peart, Newcastle, Staffs.; M. A. Slater, Peterborough; F. C. Wrigley, London; R. T. Grove, London.

### Final.

R. T. Barker, London; H. T. Bromley, London; H. H. Dunstall, London; H. E. Gilford, Nottingham; Charles Hale, Kettering; John Hunt, London; G. E. Kendall, London; T. G. Lucas, Hitchin; H. A. Neubronner, London; W. G. Ross, London; W. M. Settle, London; T. Sharpe, Kendal; H. F. Traylen, Leicester; T. H. H. Vowles, Oldham; P. J. Warman, London.

## Keystones.

**The City Orthopedic Hospital was Re-opened** last Wednesday, after having been rebuilt. The hospital authorities are appealing to the public for £10,000, to clear off their debts.

**The New Promenade at Bowling Park, Bradford**, was formally opened last week, by Mr. C. Crabtree, Chairman of the Parks Committee of the Bradford City Council. The promenade has been laid at a cost of £250, and is 200 yards long and about 16 yards wide.

**The Foundation-stone of a New Church** in connection with St. Augustine's Mission, Lillie Road, Fulham, was laid last week by the Marquess of Lorne. The portion of the church now to be built includes the nave, aisles, and baptistery, and will cost £7,000, of which about £5,000 has already been raised.

**A New Mission Hall at Keighley** was opened last week which has cost about £2,650 to erect. Only the upper storey is at present fit for tenancy. This includes a commodious mission hall and two classrooms, divided from the hall by a movable partition, and giving a total seating capacity of about 600. Below there will be a room for Band of Hope meetings, an infants' school, a room for young women, and the ragged school.

**Discovery of a new Raphael.**—At an exhibition of sacred art at Como recently, a canvas representing the "Massacre of the Innocents" attracted the attention of many experts, who attributed it to Raphael. The picture was heavily coated with varnish, and some of the surface had to be scratched away so that the signature could be examined. This shows the date of 1510, which would put the work ten years before the painter's death. The proprietor is Dr. Biondi, of Parma, who can trace the picture back, historically speaking, near the painter's lifetime.

**Art at the Paris Exhibition of 1900** will be well represented. There will be a retrospective view of French painting and sculpture that will be practically a summary of the salons from 1800 to 1890. The Palaces of Fine Arts now being built in the Champs Elysées, where the works will be exhibited, are in themselves remarkable; the main palace will be one of the most beautiful buildings in Paris, and, like the columns of the adjacent Alexander III. bridge, will be decorated by groups and single statues by eminent sculptors. The honour of the idea of erecting permanent buildings is due to M. Picard, the Commissioner-General, who determined that the Exhibition should give an immense impulsion to decorative art.

**The Houses Occupied by Lord Chatterbox and William Pitt** at Bath have had memorials affixed to them by the Bath Town Council, and Lord Rosebery has been asked to unveil them.

**The New Central Hospital for Liscard** is being erected from public subscriptions in memorial to the Queen's Diamond Jubilee. The foundation-stone was laid last week on site in Liscard Road, on the north side of Central Park.

**Munificent Donations to Norwich.**—Late Miss Letitia Gannon has bequeathed £2,340 to build a wing of the Jenny Holme Infirmary, to be named after her, and she also given £500 to Norwich Cathedral in aid of the restoration. The entire fabric of the cathedral is now completely restored inside and out, and the scaffolding is already erected to save the cloister, which is one of the most beautiful in the country.

**The New Godley Bridge, Halifax**, corner stone of which was laid by Alderman Gankroger last week, is estimated to cost about £6,000. The new bridge will admit of a roadway underneath 40ft. wide, and the span will be sufficiently lofty to permit of tramcars passing underneath. The width of the new erection will be 50ft. at the base and 40ft. at the top. Messrs. J. Charnock and Sons are the contractors for the masonry, their tender amounting to £2,979 1s. 8d., and Messrs. Pierson and Co., London, are supplying the girders, their contract amounting to £3,089 18s. 9d.

**Shiloh Calvinistic Methodist Church, Aberystwith**, has just been reopened after restoration, the erection of a new schoolroom and manse on the vacant piece of land attached to the chapel. The chapel and other buildings are now lit by the electric light, and are also fitted up with improved heating apparatus. The contract for the building of the schoolroom and manse has been executed by Messrs. Owen Brothers, and the contract for the renovation of the chapel by Mr. Richard Jones, of Cambrian Street, Aberystwith. The cost of these improvements has been about £1,000.

**Science and Art Department.**—In consequence of the retirement, which took place last week, of Major-General Sir John F. D. D. Nelson from the Secretaryship of the Science and Art Department, after forty years in public service, the Duke of Devonshire, President of the Council, has made the following appointments:—Sir George W. Kekewich, the present Secretary of the Education Department, to be also Secretary of the Science and Art Department; Captain W. de Abney to be the Principal Assistant Secretary of the Science and Art Department; Mr. Tucker to be the Principal Assistant Secretary of the Education Department.

**The Alhambra, Blackpool**, has just been formally opened. The foundation stone of the place of amusement was laid on December 18, 1897. The building, which has cost about £400,000, occupies a commanding position on the Central Beach, and is built upon the site of the old Prince of Wales's Theatre, and market and baths. Though in an incomplete state, the Alhambra opened for Whit-week, with the exception of the ball-room, which is closed again, and since then workmen have been busy putting the finishing touches to it. With the exception of that part fronting Bankney Street, the elevation is of attractive design. The main entrances are on the front, that to the ball-room being especially fine, and of marble of all shades having been used in its construction, both here and in all parts of the structure. The variety theatre, which holds over 3,000, is situated at the extreme end of the block, and is excellently appointed, the stage being visible from all parts of the house. The circus is at the other end, and here, too, the decorations are of a most sumptuous character. The circus will comfortably accommodate 2,500. The space between the variety theatre and the circus is taken up by entrances and a handsome marble staircase which leads to the ball-room. There are also a restaurant and open-air balconies. Artistic accommodation is well seen to, and the electrical plant, &c., is in the spacious cellars.



**New Vagrant Wards at Malton.**—The Malton Board of Guardians intend to apply for permission to borrow nearly £500, additional required in the construction of the new grant wards at the workhouse. The total to be borrowed for the purpose is about £2,400.

**The Building of the Chancel of Llan-the Church,** together with the restoration of the old building, is being carried out by Messrs. Charles Davies and Co., contractors, at estimated cost of £1,000. Mr. W. Williams, Brecon, is the architect.

**The Colossal Statue of Oliver Cromwell,** which is to be erected in the garden of Westminster Hall, it is stated, will be unveiled by Lord Rosebery, the private donor of Thorny-tiff's bronze effigy of the illustrious Englishman, but it will scarcely be possible to perform the ceremony before Parliament rises for prorogation.

**The Chelsea Hospital for Women** will be opened to in-patients from the middle of July to the end of September, in order to permit of enlargement and modernising of the operating Theatre, installation of a hot-water pipe and the electric light, and of some other matters. These improvements will cost nearly £3,000.

**New Buildings at South Kensington Museum.**—In reply to a question of Sir M. Montagu, in the House of Commons last day, as to the advisability of making arrangements for the erection of a public clock some prominent part of the exterior of the Museum buildings at South Kensington, especially in view of the fact that there was such clock westward from Hyde Park near within the four-mile radius, Mr. Montagu-Douglas said the matter should receive attention.

## New Companies.

**Thomas Rees and Co. (Cardiff), Limited.**—This company was registered on June 22nd. Mr. H. Atkins, Limited, 23, Bouverie Street, Cardiff, with a capital of £2,000 in £1 shares, to carry on the business of auctioneers, surveyors, architects, land and estate owners and agents, &c. The first directors—to number less than three nor more than seven—are to be appointed by the subscribers. Qualification. Remuneration as fixed by the company.

**Thomas Gibb and Sons, Limited.**—This company was registered recently with a capital of £60,000 in £5 shares (7000 five per preference), to acquire the quarries and works now carried on by Thomas Gibb and Sons, quarrymasters and brickmakers, in Inverclyde, Bishopbriggs, and elsewhere. The first signatories are Miss Gibb and Messrs. R. Gibb, W. Gibb, G. Neilson, C. N. J. Jack, A. O. Walker, and J. Mason.

**Johnson and Wright, Limited.**—This company was registered on June 19th. Messrs. Waterlow and Sons, Limited, London Wall, with a capital of £25,000 in £10 shares, to acquire the business carried on at 23A, Gold Street, and Woolmonger Street, Northampton, and elsewhere, as Johnson and Wright, and to carry on the business of furnishing and general ironmongers, hardwaremen, builders' merchants, &c. The first directors—to number not less than three nor more than five—are to be appointed by T. L. Wright. Remuneration as fixed by the company.

**West Newquay Syndicate, Limited.**—This company was registered on June 19th, Vincent and Vincent, 20, Budge Row, E.C., with a capital of £15,000 in £5 shares, to acquire an agreement with J. Ennor, jun., N. E. Ennor, and A. Wilson, to acquire the Pentire Estate, and to carry on the business of surveyors, planters, farmers, &c. The first directors—to number not less than three nor more than seven—are A. Wilson, N. E. Ennor, J. Ennor, jun., E. Bare, and R.

Vincent. Qualification, £300. Remuneration as fixed by the company. Registered office, 20, Budge Row, E.C.

### Sea Serpent Syndicate, Ltd.

This company was registered on June 19, by Messrs. Marris and Brownjohn, 1, Quality Court, Chancery Lane, W.C., with a capital of £5,000 in £1 shares, to adopt an agreement with W. Stenning, and to carry on the business of builders, electricians, mechanical and electrical engineers, &c. The first directors—to number not less than three nor more than five—are C. E. Braun, W. H. Pullin, J. S. Flanagan, and W. Stenning (managing director). Remuneration of W. Stenning, 10 per cent. of the net profits; others 5 per cent. of the net profits, divisible. Registered office: Moorgate Station Chambers, E.C.

### James Smith and Sons (Norwood), Ltd.

This company was registered on June 16th, by Mason and Co., 18, John Street, Bedford Row, with a capital of £100,000 in £1 shares, to acquire the business carried on at Junction Works, South Norwood, and Woodfield Lane, Ashstead, Surrey, as James Smith and Sons, and at Station Yard Brickworks, Grange Road Station, Sussex, as Smith Brothers, and to carry on the business of builders, contractors, decorators, merchants, importers of and dealers in sand, stone, lime, timber, iron, and building materials, surveyors, electrical and mechanical engineers, suppliers of gas and electricity, &c. The signatories (each one share) are: Messrs. John Smith, James Smith, G. Smith, A. Smith, H. Smith, J. A. Soper, and R. C. Mason. The number of directors is to be not less than three nor more than six. The first are John Smith, G. Smith, A. Smith, H. Smith, and James Smith. Qualifications, twenty shares. Remuneration of James Smith, £150; others, £520 each per annum.

## CURRENT PRICES.

FORAGE.			
Hay, best ... ..	per load	£ s. d.	£ s. d.
Straw, best ... ..	do.	3 0 0	4 0 0
Straw, inferior ... ..	do.	3 0 0	4 15 0
Straw, inferior ... ..	do.	3 0 0	5 0 0
Straw, inferior ... ..	per cwt.	1 6 3	1 6 6
Straw, inferior ... ..	per load	1 4 0	1 16 0
OILS AND PAINTS.			
Castor, French ... ..	per cwt.	1 5 1	—
Castor, English ... ..	per cwt.	1 3 3	—
Coppos ... ..	per ton	2 0 0	—
Lard ... ..	per cwt.	1 8 3	1 9 0
Linseed ... ..	per cwt.	1 1 0	—
Neatfoot ... ..	per gal.	0 2 6	0 4 0
Petroleum, American ... ..	per gal.	0 0 5 7/8	—
Do., Russian ... ..	per gal.	0 0 5 1/8	—
Pitch ... ..	per barrel	0 8 0	0 8 6
Tallow, Town ... ..	per barrel	1 5 0	1 7 3
Tar, Stockholm ... ..	per barrel	1 6 6	—
Turpentine ... ..	per cwt.	1 10 6	1 10 9
Glue ... ..	per cwt.	1 14 0	2 18 6
Lead, white, ground, carbonate per cwt.	—	0 19 0	—
Do. red ... ..	per cwt.	0 17 0	—
Soda crystals ... ..	per ton	2 15 0	—
Shellac, orange ... ..	per cwt.	3 6 6	—
Do. sticklac ... ..	do.	2 2 6	2 15 0
Pumice stone, ... ..	do.	0 8 9	—
METALS.			
Copper, sheet, strong ... ..	per ton	88 0 0	—
Iron, bar, Staffs, in London ... ..	do.	8 0 0	0 0 0
Do. Galvanised Corrugated sheet ... ..	do.	12 15 0	13 0 0
Lead, pig, Spanish ... ..	do.	14 5 0	14 7 6
Do. English common brands ... ..	do.	14 10 0	—
Do. sheet, English, 6lb. per sq. ft. and upwards ... ..	do.	16 10 0	—
Do. pipe ... ..	do.	17 5 0	—
Nails, cut clasp, 3in. to 6in. ... ..	do.	9 0 0	10 0 0
Do. floor brads ... ..	do.	8 15 0	9 15 0
Tim, Foreign ... ..	do.	127 0 0	127 10 0
Do. English ingots ... ..	do.	130 0 0	—
Zinc, sheets, English ... ..	do.	27 10 0	23 10 0
Do. Vellie Montaigne ... ..	do.	31 0 0	—
Do. Spelter ... ..	do.	25 15 0	26 2 6
TIMBER.			
Soft Woods.			
Fir, Dantzic and Memel ... ..	per load.	3 0 0	4 0 0
Pine, Quebec Yellow ... ..	do.	4 7 6	6 5 0
Laths, log, Dantzic ... ..	per fath.	4 10 0	5 10 0
Do. Petersburg ... ..	do.	4 0 0	6 10 0
Do. Archangel 2nd & 1st per P. Std. ... ..	do.	9 0 0	18 10 0
Do. do. 4th & 3rd. ... ..	do.	12 0 0	12 5 0
Do. do. unsorted ... ..	do.	7 5 0	8 5 0
Do. Riga ... ..	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow ... ..	do.	10 0 0	14 15 0
Do. do. 2nd ... ..	do.	10 10 0	12 0 0
Do. do. Unsorted ... ..	do.	10 0 0	10 15 0
Do. do. White ... ..	do.	7 15 0	9 15 0
Do. Swedish ... ..	per P. Std.	8 0 0	16 10 0
Do. White Sea ... ..	do.	12 5 0	—
Do. Quebec Pine, 1st ... ..	do.	18 0 0	19 0 0
Do. do. 2nd ... ..	do.	12 0 0	14 15 0
Do. do. 3rd & 4th ... ..	do.	7 15 0	9 15 0
Do. Canadian Spruce, 1st ... ..	do.	9 0 0	10 5 0
Do. do. 3rd & 2nd ... ..	do.	6 5 0	7 15 0
Do. New Brunswick ... ..	do.	7 5 0	8 0 0
Battens, all kinds ... ..	do.	0 0 0	8 12 6
Flooring Boards, 1 in. prepared, 1st ... ..			
Do. 2nd ... ..	per square	0 6 6	0 10 3
Do. 3rd & 4th ... ..	do.	0 8 9	0 9 3
Do. 3rd & 4th ... ..	do.	0 7 9	0 8 9

### HARD WOODS.

		£ s. d.	£ s. d.
Ash, Quebec ... ..	per load	8 17 6	4 10 0
Birch, Quebec ... ..	do.	8 12 6	3 17 6
Box, Turkey ... ..	per ton	7 0 0	15 0 0
Cedar, in, Cuba ... ..	per ft. sup.	0 0 4	0 0 4
Do. Honduras ... ..	do.	0 0 4	—
Do. Tobasco ... ..	do.	0 0 5 3/82	—
Elm, Quebec ... ..	per load	4 12 6	5 10 0
Mahogany, Average Price			
for Cargo, Honduras ... ..	per ft. sup.	0 0 4 7/8	—
Do. African ... ..	do.	0 0 5	—
Do. St. Domingo ... ..	do.	0 0 4 23/32	23/32
Do. Tobasco ... ..	do.	0 0 5 3/16	—
Oak, Dantzic and Memel ... ..	per load	3 5 0	3 5 0
Do. Quebec ... ..	do.	4 12 6	5 0 0
Teak, Rangoon, planks ... ..	do.	8 15 0	13 15 0
Wainscot, Riga (Bauk) ... ..	do.	8 15 0	5 15 0
Do. Odessa Crown ... ..	do.	8 15 0	5 15 0
Walnut, American ... ..	per cub. ft.	0 2 6	0 4 2

## COMING EVENTS.

**Wednesday, July 12.**  
CENTRAL SCHOOL OF ARTS AND CRAFTS.—Exhibition of Students' Work. 12 to 8.30 p.m.  
NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—A general meeting will be held at Furness Abbey Hotel at 11 a.m., and an excursion will take place in the afternoon to Millom; start at 1.25 p.m.  
**Thursday, July 13.**  
NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—Excursion to BARTON; start at 9.20 a.m.  
CENTRAL SCHOOL OF ARTS AND CRAFTS.—Exhibition of Students' Work. 12 to 8.30 p.m.  
**Friday, July 14.**  
NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—Excursion to Keswick; start at 8.55 a.m.  
CENTRAL SCHOOL OF ARTS AND CRAFTS.—Exhibition of Students' Work. 12 to 8.30 p.m.  
**Saturday, July 15.**  
ARCHITECTURAL ASSOCIATION.—Fourth summer visit to Graemes Dyke, near Harrow Weald (Mr. R. Norman Shaw, R.A., architect). Train leaves Euston at 2.30 p.m.  
CENTRAL SCHOOL OF ARTS AND CRAFTS.—Exhibition of Students' Work. 12 to 8.30 p.m.

## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

**BANSTEAD HEATH (Surrey).**—For the rebuilding of the "Bricklayers' Arms," Banstead, for Messrs. Geo. Moore and Sons, Swan Brewery, Leatherhead. Mr. Reginald White, architect, Savoy House, London; and Epsom:—

F. J. Shopland ... .. £2,223 0  
J. Murray ... .. 1,375 14  
Harris ... .. 1,185 0  
H. Skilton ... .. 1,140 0  
W. A. Bennett ... .. £1,135 9  
J. Cropley, Leatherhead ... .. 1,110 0  
\* Accepted.

**BRISTOL.**—For the erection of a mission church, Chesels, Bedminster. Messrs. P. Munro and Son, architects, St. Stephen's Chambers, Baldwin-street, Bristol:—  
Cowlin and Son ... .. £2,070  
W. G. Bindon ... .. 1,907  
A. J. Beaven ... .. 1,830  
E. Walters, 3, Richmond-road, Montpelier, Bristol\* ... .. 1,768  
\* Accepted.

**DONINGTON.**—Accepted for additions to Komani House, for W. Stapleton Royce, Esq., of Cape Town. Edward A. Jolly, architect, Donington:—  
Frank Pattison, Ruxington ... .. £235 12 2

**GOSBERTON (Spalding).**—Accepted for new stables at "Holme Lea," for T. Russell Casswell, Esq. Mr. Edward A. Jolly, architect, Donington:—  
Thomas H. Cade, Boston ... .. £269

**LONDON.**—For re-making internal roads, paths, &c., at the South-Western Hospital, for the Metropolitan Asylums Board. Mr. J. B. Norrington, Surveyor:—  
Road-making. Asphalt. T. Adams ... .. £3,492 0 0  
R. Ballard, Ltd. ... .. 2,920 0 0  
F. Smith ... .. 2,750 0 0  
Bentham and Co., Telford ... .. 2,578 0 0  
French Asphalt Co. ... .. 3,611 19 6  
Limmer Asphalt Paving Co., Ltd. ... .. 2,845 10 0  
Val de Travers Asphalt Paving Co., Ltd., Hamilton House, Bishopsgate Street Without, E.C. ... .. 2,553 9 0

The estimate of the surveyor was:—  
Road-making ... .. £2,620  
Asphalting ... .. 2,530  
\* Accepted.

**LONDON.**—For fitting up kitchen department at the North-Eastern Hospital, for the Metropolitan Asylums Board. Messrs. A. and C. Harston, architects:—  
Jeakes and Co. ... .. £1,985 0  
Burn Bros. ... .. 1,383 0  
Benham and Sons, Limited ... .. 1,353 0  
J. and F. May ... .. 1,250 0  
Moorwood, Sons and Co., Limited ... .. 1,171 10  
Kite and Co., 132, Euston-road, N.W.\* ... .. 1,050 0  
\* Accepted. [Architect's estimate, £1,000.]

**LONDON.**—For the erection of artisans' dwellings, St. George's-road, Southwark, for the Trustees of Hayle's Estate. Mr. Waring and Nicholson, architects, 38, Parliament-street, Westminster, S.W.:—  
Higgs and Hill ... .. £12,989  
Martin Wells & Co. ... .. 12,250  
Holliday and Green-wood ... .. 11,747  
C. Ansell ... .. 11,234  
Wm. Smith ... .. 10,813

**LONDON, N.**—For the erection of six shops in Philip Lane, Tottenham, for D. Burnett, Esq. Mr. E. Howard, architect:—  
W. Hawley, Tottenham (accepted) ... .. £2,150

**LONDON, W.C.**—For the erection of shops and flats at Shattisbury-avenue, W.C., for the Shattisbury Avenue Freehold Land Syndicate, Ltd. Mr. Robert J. Worley, architect:—  
Mark Patrick ... .. £41,343  
Burman and Sons ... .. 38,985  
Patman and Fotheringham ... .. 39,974  
J. Groves and Son ... .. 37,876  
Foster and Dicksee ... .. 36,988  
Howell J. Williams ... .. 36,969  
Lawrence and Sons ... .. 36,819  
Thos. Boyce ... .. 35,632  
Perry and Co. ... .. 35,593



**LONDON.**—For the erection of stabling, Ship Lane, Kennington, for Mr. Wm. Gardner. Messrs. Waring and Nicholson, architects, 38, Parliament Street, Westminster, S.W. :—

W. West ... £582 Edwards and Medway.. £367  
W. Wallis ... 567  
**MANSFIELD.**—For additions, etc., to co-operative stores, East Kirkby. Mr. Lawrence Bright, Architect, 9, St. Peter's Church-walk, Nottingham :—  
Dennet and Ingle ... £2,430 Bains ... £2,184  
H. Vickers ... 2,412 Wm. Rixley ... 2,169  
Heath and Son ... 2,260 J. Oscroft, Nottingham\* 2,100  
T. R. Sharley ... 2,206 \*Accepted.

**PINXTON (Derby).**—For the water supply works for the Blackwell Rural District Council. Mr. H. Walker, C.E., Newcastle Chambers, Nottingham :—

Sands and Son ... £2,217 0 0 Lane and Son ... £1,724 15 0  
F. Holmes ... 1,938 18 3 J. F. Price ... 1,706 16 0  
J. H. Vickers, Ltd. ... 1,910 0 0 H. Gillet ... 1,684 1 6  
Hibbert and Jepson ... 1,825 0 0 W. Barnes ... 1,670 19 0  
J. Tomlinson ... 1,806 0 0 Jenkins and Son ... 1,669 12 10  
Batchelor and Snowden ... 1,751 13 0 Cope and Raynor ... 1,589 11 0  
H. Sharrow, Radford-road, Nottingham\* 1,560 0 0  
\*Accepted.

**WIMBLEDON.**—For the proposed erection of new wing and alterations to the "Dog and Fox" Hotel, Wimbledon, for T. Mackness. Mr. Charles Flack, architect :—

Howell J. Williams ... £6,309 Beer and Gash ... £6,111  
Patman and Potheringham ... 6,161 Antill ... 5,995  
Castle ... 5,947

## CONTRACTS OPEN.

### BECKENHAM URBAN DISTRICT COUNCIL.

#### ELECTRIC LIGHT STATION. TO BUILDING CONTRACTORS.

The Beckenham Urban District Council invite TENDERS for the ERECTION of an ELECTRIC LIGHT STATION.

The works include the erection of boiler, dynamo, and destructor houses, and chimney shaft 120ft. high, together with the construction of an inclined approach road and tipping-floor to destructor.

The site of the proposed buildings is on the Council's land adjoining the Railway at the south end of Arthur-road, Beckenham.

Drawings may be seen, and bills of quantities, specifications, and forms of Tender may be obtained, at the Office of Mr. JOHN A. ANGELL, Engineer to the Beckenham District Council, on deposit of a £5 Bank of England note, which will be returned on receipt of a bona-fide Tender.

A clause will be inserted in the contract providing that the contractor shall pay to the workmen employed in the execution of the work the wages generally accepted as current for workmen engaged on similar work in the district.

Tenders (inclosed in an envelope to be supplied), duly sealed and endorsed "Tender for Electric Light Station," to reach the undersigned not later than FOUR p.m. on MONDAY, JULY 17th, 1899.

The Council do not bind themselves to accept the lowest or any Tender.

By order,  
F. STEVENS,  
Clerk of the Council.

June 27th, 1899.

## BOWER & FLORENCE, Polished Granite Manufacturers, ABERDEEN, N.B.

London Office: 64, FINSBURY PAVEMENT, E.C.  
Quarries: PETERHEAD, N.B.

### TO BUILDERS.

The Committee of the Victoria Hospital, Folkestone, are prepared to receive TENDERS for BUILDING A NEW WING to their Hospital from plans and specification prepared by their Architect, Mr. H. PERCY ADAMS, F.R.I.B.A., 28, Woburn-place, Russell-square, London, W.C. Tenders required on JULY 20th, 1899. Builders desirous of Tendering to apply to the Architect for a copy of the quantities, for which they must deposit with him a Bank of England £5 note on application, which will be returned on receipt of a bona-fide Tender.

The competition will be limited and the Builders selected from those applying for the quantities.

The Committee does not bind itself to accept the lowest or any Tender that may be submitted.

BUILDINGS. FOR WHOM. FROM WHOM, FORMS, &C.

Catford, S.E., H. F. Harrington Philips, Norfolk, & Four Shops Prior, Architects and Surveyors, 4, Station Buildings, Catford, S.E. 1

### ROWLEY REGIS URBAN DISTRICT COUNCIL.

Builders and Contractors are invited to TENDER for the EXTENSION of the COUNCIL OFFICES at Lawrence-lane, Old Hill, Staffordshire.

Plans and Specifications may be seen at the said Offices on week days from 6th to 15th July, 1899, inclusive, between the hours of 10 a.m. and 4 p.m., excepting Saturdays, and then from 10 a.m. to 1 p.m.

Quantities can be obtained on application to the Architects, Messrs. Meredith and Pritchard, Bank-buildings, Kidderminster, on payment of £1 1s., which will be returned in each case after receipt of a bona-fide Tender on the Council's form.

Tenders must be endorsed and in my hands at the said Offices not later than 12 o'clock on JULY 17th, 1899.

The Council do not bind themselves to accept the lowest or any Tender.

By order,  
DANIEL WRIGHT,  
Clerk.  
1

June 6th, 1899.

### CORPORATION of LONDON. PUBLIC HEALTH DEPARTMENT. TO BUILDERS AND OTHERS.

The Streets Committee of the Corporation will meet at the Guildhall of the City of London, on TUESDAY, JULY 18th, at HALF-PAST ONE o'clock precisely, to receive TENDERS for the CONSTRUCTION of UNDERGROUND CONVENIENCES in Aldersgate-street (near Edmund's-place), according to plans and specification to be seen at the office of the Engineer to the Corporation, at the Guildhall.

Tenders are to be on the forms supplied at the said office, sealed, endorsed "Tender for Underground Conveniences," addressed "The Town Clerk, Public Health Department, Guildhall," and delivered before HALF-PAST ONE o'clock on the above-mentioned day.

Security will be required for the due performance of the contract.

### LONDON PLATE-GLASS INSURANCE CO. Ltd.

Head Office: 49, Queen Victoria St., E.C.

MODERATE RATES. PROMPT REPLACEMENTS.  
SURVEYS AND ESTIMATES FREE.

Ten per cent. of the Premiums returned every six years in cases where no claim has arisen.

Applications for Agencies Invited.

Liberal Terms for Business Introduced.

Persons sending in proposals must attend themselves (or by duly authorised agents) at the appointed time. The Committee do not pledge themselves to accept the lowest or any Tender.

MONCKTON.

Guildhall, June, 1899.

## COMPETITIONS.

### BOROUGH of TUNBRIDGE WELLS. TUNBRIDGE WARE DESIGNS COMPETITION.

The Technical Education Committee offer the following prizes for the best DESIGNS suitable for execution in TUNBRIDGE WARE.

For coloured designs  
1. £3 3s. 6d.  
2. £2 2s. 0d.  
3. £1 1s. 0d.  
For uncoloured designs  
1. £2 2s. 0d.  
2. £1 1s. 0d.  
3. 10s. 6d.

The designs, which will be judged by Mr. WALTER CRANE, must be delivered on or before SATURDAY SEPTEMBER 30th, 1899.

For Particulars of the competition will be forwarded on application to the Town Clerk.

If desired a specimen of Tunbridge Ware will be sent upon receipt of eightpence in stamps.

Town Hall, Tunbridge Wells,  
July 5th, 1899.

## FLOORING BLOCKS.



Per 100 Blocks out of sizes.	YELLOW.		PITCH PINE
	At Wharf.	ex Ship within one month.	At Wharf.
17½ x 3 x 3	12 7	11 3	16 6
17½ x 3 x 2	8 10	8 0	11 8
17½ x 3 x 1½	6 9	6 1	9 1



### PRIME DRY OAK & PITCH PINE FLOORING.

With Special Joint to conceal Nails—  
1½ x 4½ Oak, 50/- Pitch Pine, 24/6 per square.  
1 x 4½ " 42/6 " 21/- "

Above prices include desiccating.

## VIGERS BROTHERS, TIMBER MERCHANTS.

Head Office—67, KING WILLIAM STREET, E.C.  
Mills—LOTS ROAD, CHELSEA.  
Telephone No. 601 Avenue.



# DUCKETTS

## WASH-DOWN PEDESTAL CLOSET

### "THE GLENCHER"

LONDON COUNTY COUNCIL PATTERN  
SELF-CONTAINED, HEAVY, STRONG.

AWARDED THE BRONZE MEDAL

OF THE SANITARY INSTITUTE,

LEEDS EXHIBITION 1897.

PRICES & PARTICULARS ON APPLICATION

J. DUCKETT & SON LTD. MANUFACTURERS OF SANITARY WARE.  
LONDON OFFICE: HAMBRO WHARF, UPPER THAMES ST. E.C.  
BURNLEY, LANCASHIRE.



# SUPPLEMENT FOR

SURVEYORS · BUILDERS ·  
SANITARY ENGINEERS.

JULY 12TH, 1899.

## BOYLE'S PATENT "AIR-PUMP" VENTILATOR.

THE LATEST PATENT HAS DOUBLE THE EXTRACTING POWER OF EARLIER FORMS AND IS ONE-HALF THE COST.

ROBT. BOYLE & SON. LTD., 64, Holborn Viaduct, LONDON; & 110, Bothwell St., GLASGOW.

*See Large Advertisement, Back Page, Monthly.*

## THE PROBLEM SOLVED!

**ORDINARY WOOD RENDERED FIRE-RESISTING THROUGHOUT  
WITHOUT AFFECTING ITS UTILITY AS A BUILDING MATERIAL.**

## The London Non-Flammable Wood Co. Ltd.

who have recently introduced into Europe the process now being so largely used in America, have erected large works in this country, and are now taking Orders for the supply of their

### NON-FLAMMABLE WOOD.

The whole of the Carpentry and Joinery in the following notable buildings in New York, amongst others, consists of NON-FLAMMABLE WOOD:—

**THE COMMERCIAL CABLE BUILDING,  
THE QUEEN'S INSURANCE BUILDING,  
and  
THE R. G. DUNN BUILDING.**

NON-FLAMMABLE WOOD has been tested by H.M. Admiralty, and large Orders have been given by H.M. Government.

Quotations on receipt of Requirements, Address, &c.

## THE LONDON NON-FLAMMABLE WOOD COMPANY Limited,

*2, Army and Navy Mansions, Victoria Street, London, S.W.*



## TESTING DRAINS AND FITTINGS.

By T. E. COLEMAN, F.S.I.

WHENEVER a system of house drainage is being carried out, it is essential that the whole should be subjected to some sufficient proof or test of soundness and suitability for the important work which it has to perform. Any defects which are revealed by the application of the selected test can then be easily remedied at a comparatively small cost, instead of afterwards becoming a constant source of inconvenience and expense, if not of absolute danger to health.

At the same time it cannot be too strongly borne in mind that, even though the drains and fittings successfully comply with every sanitary requirement when first constructed, yet the constant wear and tear coincident upon their everyday use requires that a careful examination and testing as to their continued efficiency should take place at stated intervals. If this course were more generally adopted, a large amount of illness would undoubtedly be prevented.

Drains may be tested by filling them with water, or forcing in smoke and air under pressure. These are severally known as the "water," "smoke," and "air" tests. Another method, known as the "scent" or "smell" test, is also frequently used in the examina-

found to be thoroughly sound in all respects, the fittings are then permanently fixed in their respective positions and the "smoke" test is applied at the completion of the work. At the time of making the smoke test, the joints between the fittings and the soil pipe branches should be carefully examined to make sure that all the various connections are perfectly secure.

When carrying out the water test to soil pipes, the ends of the branches, together with

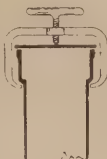


FIG. 2.

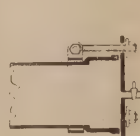


FIG. 3.



FIG. 4.

the lower end of the soil pipe, must be properly closed before filling with water. The ordinary expanding drain plugs may sometimes be used for this purpose, but in places where a great head of water is required they are liable to be forced out unless securely strutted in addition, or otherwise supported. A convenient form of stopper for the branches of cast-iron pipes is seen in Fig. 2. It consists of an iron plate held firmly in position by means of a bridle and screw fastening. In cases where it is necessary to close the spigot end of a pipe,

drain increases, the float (D) will rise (as indicated by the dotted lines), and should there be no leakage, the float will remain stationary when the tap (M) is closed. When testing old drains, which are not accessible from an inspection chamber, the smoke may be introduced through a trapped gully as shown in Fig. 6.

In the United States the atmospheric, or air test, is also used in sanitary work. Air is forced into the drains and soil pipes by means of a force pump, until a pressure of 10 lb. per square inch is registered by the manometer, or mercury pressure gauge. This pressure of 10 lb. per square inch is equivalent to a column of mercury 20 in. high, as shown by the gauge or indicator.

The "scent" or smell test is frequently adopted for the examination of existing drains in order to indicate the presence of any leakages therein. It may be applied in several different ways. The "peppermint" test consists in pouring oil of peppermint and a quantity of boiling water into the drain at some definite point. Care must be taken that all the openings to the drain have been previously stopped or sealed with water, whilst the opening through which the peppermint and hot water are poured must be closed immediately afterwards. Should the well-known pungent odour characteristic of this chemical be then detected, it is evident that the escape proceeds from some defect within the drainage or

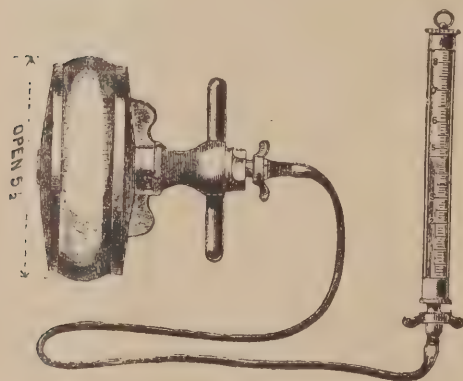


FIG. 1.

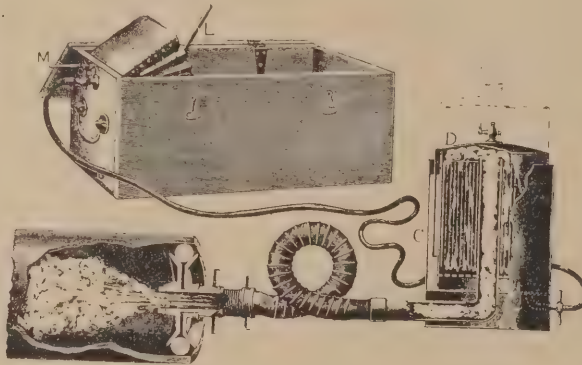


FIG. 5.



FIG. 7.

tion of existing sanitary work, when any of those already mentioned cannot be conveniently adopted.

In new work the different sections or lengths of drain must be tested before being covered in, so that any leaky joint or defective pipe may be at once detected and afterwards made good. Sufficient time must be allowed for the cement—or other material used for making the joints—to become thoroughly hardened and set before attempting the test.

The most satisfactory test for ordinary drainage work is the "hydrostatic" or water test. The method generally adopted is to close the lower end of the drain by means of a suitable plug or stopper, a bend and vertical pipe being temporarily fixed in position at the upper end, so that 5 ft. or 6 ft. head of water may be obtained. The pipes are then filled with water to the required height. If the head of water is maintained at this level for about an hour, a positive proof is thereby established that the pipes are sound and the joints thoroughly tight and well made. On the other hand, should the water level fall during this period, the cause of the leakage must be ascertained and made good, the drain being afterwards tested until a satisfactory result is achieved.

Fig. 1 is an illustration of Jones's patent expanding screw stopper with centre outlet, to which is attached a water gauge or indicator. By means of this appliance the slightest leakage is at once readily detected.

In addition to the drains, it is also desirable that all iron soil pipes and branches be similarly subjected to the "hydrostatic" test before the fittings are connected thereto. If

an adjustable iron collar must be first secured thereto with screw bolts and nuts, so as to provide a suitable shoulder or projection for the bridle fastening.

Precautions should be taken to prevent air being imprisoned within the branch pipes, so that the whole of the interior may be actually filled with water. The iron plate stoppers should therefore be provided with an air-cock or small screw plug to allow the escape of air whilst filling the pipes.

Figs. 3 and 4 show another form of plate stopper for iron pipes. The plate is fitted with an air-cock and fixed in position by means of three screw bolts attached to the iron collar encircling the barrel of the pipe immediately behind the socket, as indicated in the section.

An illustration of the "Volcano" smoke machine is seen in Fig. 5. It is made of galvanised steel with brass fittings. The smoke may be produced by burning oily rags, cotton waste, or specially prepared cartridges, within the combustion chamber. The machine is attached to the drain stopper as shown, and the annular space (C) surrounding the combustion chamber filled with water to within about 1 in. of the top.

After igniting and placing the smoke material in the combustion chamber, the cover or float (D) is replaced, and large volumes of smoke are generated by gently working the handle (L) attached to the bellows. As the pressure of smoke within the

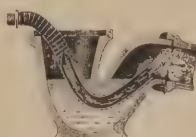


FIG. 6.



FIG. 8.

plumbing system. The fault must accordingly be located and afterwards made good.

Several devices have also been introduced for the purpose of providing a simple and portable form of drain test by means of other strongly-smelling compounds. Fig. 7 shows a small apparatus of this description, known as "Banner's pocket drain explorer." It consists of a grooved wooden ball, about 2½ inches in diameter, and containing a spiral spring. A chemical possessing a powerful and penetrating odour is contained within a hermetically sealed tube of thin glass (see Fig. 8) about 2 in. long. The method of applying the test is as follows, viz.:—The spring inside the ball is compressed by means of a short lever, and held in this position by passing the end of the lever through the eye or slot shown in the hinged clip to which the cord is attached. One of the small glass tubes or drain grenades is then placed under the staples of the drain explorer, and secured with an india-rubber band. The "explorer" being now charged, the end of the attached cord is securely held whilst the wooden ball and grenade are washed through the gully or closet trap by means of half a pail of hot water. On giving the cord a slight jerk the lever is released, so that the compressed spring forces it violently against the glass grenade, breaking it to pieces, whilst the volatile and pungent substance permeates the



drain. Before applying the test, all openings to the drain must be previously stopped.

Grenades containing either peppermint, assafetida, or other subtle and strongly smelling materials may also be obtained. Another form of drain testing appliance is seen in Fig. 9. The wooden case (C) contains a glass tube filled with chemicals, the contents being sealed by an elastic rubber band (D), secured by a paper fastening (F) and brass ring (G), to which a cord (E) is attached.



Fig. 9.



Fig. 10.

After securing the end of the cord the fully charged grenade is flushed through the trap and into the drain with a quantity of hot water. Immediately afterwards the elastic rubber band (D) is released, owing to the paper fastening becoming moistened and weakened. The contents of the tube are then discharged into the drain as indicated in Fig. 10. At the conclusion of the test (which lasts about fifteen or twenty minutes) the empty case is withdrawn.

"Smoke cases" also provide a simple and portable test for drainage work. These consist of a tube of stout paper, with a fuse at one end and filled with a strongly smelling smoke-producing composition. After lighting the fuse, the smoke case is at once inserted in the drain to be tested, and the end temporarily closed, so that the volumes of smoke emitted from the ignited cartridge are distributed throughout the length of the drain. Smoke issuing from any point on the drainage system, or the presence of the peculiar smell of the smoke cartridge affords evidence of some serious defect, and must be traced to its source. The smoke cases will burn for about fifteen minutes, and should be so arranged that when placed within the drain, the cartridge is supported above the invert, clear of any liquid sewage at the bottom of the drain pipe.

**Proposed Street Improvements at Halifax.**—With a view to improvements in the Lower Skircoat district, the Halifax Corporation have purchased from Mr. Ingram Fuller Godfrey 17,000yds. of land in Dudwell Lane, at the price of 3s. per yard. For the new bridge about to be erected at Godley, the tender of Messrs. Peirson and Co., of St. Dunstan Hill, London, E.C., for providing spring girders, floor-plates, and parapets, for the sum of £3,089 18s. 9d., has been accepted.

**Noisy Building Operations.**—The case of *Ennis v. Brown* was heard in the Chancery Court, at Manchester, recently, before Vice-Chancellor Hall. The plaintiff, Francis Ennis, is the occupier of a house in Church Street, Barrow, and the defendant, Thomas Brown, a contractor, is erecting a building on an adjoining plot of land. The plaintiff alleged that the defendant was carrying on the building operations with unnecessary noise and violence, and was damaging the wall of his house, and his counsel asked for an interim injunction to restrain the defendant from doing so.—The defence was that the contractor had bought the party-wall, and could not build without making a noise and knocking the wall.—The Vice-Chancellor said the plaintiff seemed to be suffering from too highly strung nerves.—Plaintiff's counsel said it was hardly a case of over-nervousness when bricks came tumbling into his client's dining-room.—Ultimately the motion was adjourned, the defendant giving an undertaking not to knock holes in the plaintiff's house, and to conduct his building operations in the usual way.

## Builders' Notes.

**The Endowed Schools, Watford.** are being warmed and ventilated by means of Shorland's Patent Manchester Grates, supplied by Messrs. E. H. Shorland and Brother, of Manchester.

**Metal Workers' Dinner.**—The men employed at the Portland Metal Works (Thos. Elsley, Limited) dined last Saturday at The Cambridge Hotel, Southsea, by the invitation of Mr. Thomas Elsley. About 150 assembled under the presidency of Mr. John Chamberlin.

**Erith Engine Sheds.**—Messrs Mellowes and Co., of Sheffield, and 28, Victoria Street, S.W., have recently completed the glazing of the Whitehall Engine Sheds, at Erith, for the South Eastern Railway Co., on their patent Eclipse imperishable system of roof glazing.

**A Plasterer's Claim for Compensation.**—A case was heard by Judge Waddy, Q.C., at the Sheffield County Court on June 30, in which Messrs. Longden and Sons, contractors, Sheffield, were sued by William David Dewar, plasterer, 113, Princess Street, Sheffield, under the Workmen's Compensation Act, for £4. Mr. L. J. Clegg was for the plaintiff, and Mr. Neal represented the defendants. Dewar was engaged on the plastering work at Walsh's new premises, in High Street, and on the 11th January had been working on the first floor. At eight o'clock, when it was dark, he was leaving his employment, and while descending an unfinished staircase fell into the basement. He had a rib broken, and was taken to the Royal Hospital, where his injury was attended to. For the defence, it was contended that the accident was the result of plaintiff's own action. A ladder was provided for the workmen to leave the building, and Dewar had no right to use the uncompleted staircase. A barricade was placed at the top of the stairs to prevent men leaving by that way, but plaintiff got either under or over this barricade, and went down the stairs, and in so doing he acted contrary to orders. Mr. Neal added that even if the plaintiff could recover, his wages only justified him in suing for £2 18s. His Honour visited the premises, and gave judgment for £2 18s. and costs. He, however, found that Dewar had been forbidden to use the staircase from which he fell.

**Building Accidents in Glasgow.**—By the partial collapse of a building in Glasgow on the 29th ult. six men were seriously injured. For some time past a number of buildings on the south side of the city have been in course of demolition consequent upon the widening of the Glasgow and South-Western Railway line. One of these is Hutchesontown Parish Church, situated at the corner of Greenhill Street and Hospital Street, and it was there the accident occurred. About half-past eleven o'clock six men were engaged on the roof of the church, levering a joist as a preliminary to bringing the roof down, when the joist unexpectedly came away, with the result that the roof collapsed and the men were precipitated to the ground. Four of them were so seriously injured that they had to be removed to the Royal Infirmary in the ambulance waggon. The foreman and another man, being less seriously injured, were removed to their homes. Three workmen who were engaged on the ground escaped with a few scratches. The collapse reduced the interior of the church to ruins. Messrs. Archibald Stewart and Company, Maxwell Road, are the contractors for the work. Considerable alarm was caused in East John Street in the afternoon of the same day by the gable of a three-storey building falling out. The block adjoins the site of the public baths about to be erected, and the digging of the foundations, followed by Wednesday's heavy rain, had weakened the gable. Fortunately, the state of affairs had been observed, and the occupants warned to clear out of their houses. This they did, so that life was not endangered, and the damage to property was comparatively small.

## Masters and Men.

**Long Eaton Builders' Labourers** have struck for an advance of  $\frac{1}{2}$ d. per hour.

**The Edinburgh and Leith Joiners** strike is at an end, the masters having conceded to the operatives' demand, which was for an advance of  $\frac{1}{2}$ d. per hour.

**The Plumbers of Oldham** have gone on strike for an advance of  $\frac{1}{2}$ d. per hour, and certain alterations of working rules relating to overtime pay commencing at six o'clock instead of eight o'clock.

**Associated Carpenters and Joiners' Society.**—Delegates from the various branches of the Associated Carpenters and Joiners' Society in Great Britain and Ireland have been meeting in Edinburgh to consider amendments on the existing rules of the Society, and the delegates held a dinner in the Empire Café, South Bridge—Mr. Alex. Stark presiding.

**Paisley Masons** struck work last week owing to a dispute with the masters regarding a by-law. An agreement existed between the masters and men to the effect that the employers should not employ more than six apprentices. At the expiration of that agreement some days ago, the masters wished an alteration which would give them power to employ eight apprentices at the least. This the men resented.

**The Joiners' Strike at Newcastle.**—The Master Builders' Federation of the North of England met last Thursday week to consider the situation. At the close of the meeting the general feeling was that the question at issue should be referred to arbitration, or that the wages should continue unchanged for the ensuing three years on the condition that the demand for an advance from 9 $\frac{1}{2}$ d. to 10d. per hour be withdrawn. The reply of the joiners to the masters' offer of a fixed rate of wages at 9 $\frac{1}{2}$ d. per hour was read. In their reply they refuse to accept the offer. A resolution that the master builders decline to grant the  $\frac{1}{2}$ d. per hour advance was unanimously passed.

**The Building Trade Dispute.**—An important meeting of the Executive Committee of the National Association of Master Builders of Great Britain and Ireland was held last Thursday at Manchester to discuss the position of labour questions in the building industry. The employers complain that the members of the National Association of Operative Plasterers do not, in a number of districts, act in accordance with the terms of settlement of the plasterers' dispute drawn up at the recent conference in London. A resolution was passed which stated that the meeting was of opinion that the operative plasterers in a number of towns had violated the mutual agreement made, and that the letter from the secretary of the National Association of Operative Plasterers, endeavouring to justify the conduct of the members, was most unsatisfactory. The meeting desired an interview at the earliest date to clear away all misunderstanding. Another resolution was prepared, in which it was pointed out that, failing an agreement at this requested interview or joint-conference with the operative plasterers, there would be no alternative before the National Association but the declaration of a general lock-out of one-fourth of the members of all branches of the building trade. Copies of the proposed basis of settlement of the difficulties in the building trade, which was a fortnight ago drawn up by the representatives of the several Trade Unions and submitted to the National Association of Master Builders, were before the meeting, but nothing with regard to a joint general conference was resolved on.



## Surveying and Sanitary Notes.

**Wood Paving at Stratford.**—The West Ham Town Council have resolved to substitute wood paving for stone pitching in the principal roads at Stratford, notwithstanding that the Surveyor estimated wood to cost £63,422 and stone £45,862.

**Jarrahdale Jarrah.**—The Lingard, with 975 loads, and the Hans Wagner, with 818 loads of Jarrahdale Jarrah on board, have arrived in London to the order of the Agent for the Jarrahdale Jarrah Forests and Railways Limited, 1, Fenchurch Avenue, E.C.

**Sewage of Colchester.**—A report has been submitted to the Colchester Town Council by the Sub-Committee appointed by the Roads and Drainage Committee on the question of the drainage of sewage and treatment by the septic tank system, invented by Mr. Donald Cameron, the City Surveyor of Exeter. The Committee have inspected the works at Exeter, and recommend that the Council authorise them to obtain further particulars, with plans and estimates, with a view to the adoption of the system for the borough.

**London Improvements.**—At last week's meeting of the London County Council the discussion on the proposal of the Improvements Committee to embank the Thames from Victoria Tower Gardens to Lambeth Bridge, to widen Millbank Street, and to lay out as a garden the land between the river and Millbank Street, was resumed. After some discussion the recommendation of the committee to proceed with the scheme was approved. The Improvements Committee next recommended that, subject to a contribution from the vestry of Hackney, of one-fourth of the net cost of the improvement, such contribution not to exceed £125,000, and subject to the vestry giving their consent to the doubling of the tramway line throughout the portion of the road proposed to be widened, the Council should apply to Parliament in the next Session for powers to widen Mare Street, Hackney, to 70ft. between the North London Railway and the Triangle. The net cost of this scheme was £577,000. The recommendation was agreed to; and it was also decided to seek powers to widen Goswell Road between Upper Ashby Street and Great Sutton Street, at the cost of £196,000, the vestries of St. Luke and Clerkenwell contributing £20,000. Other recommendations adopted were for the widening of Nine Elms Lane at a net cost of £136,400, the Battersea Vestry contributing £15,000; for the widening of Camberwell New Road between Warner Street and Camberwell Green at a net cost of £52,000, the vestry of Camberwell contributing £5,000; and for a small widening of the Kentish Town Road. It was also decided to contribute £52,750 towards the widening by the City Corporation of Mansell Street and Middlesex Street.

**Bebington Sewage.**—At a meeting of the Lower Bebington District Council last week, a letter was considered which had been received from the Board of Trade respecting the application of the council to construct an outfall sewer on the shore near Bromborough Pool, stating that the Board were not prepared to accede to the application unless satisfactory provision was made for preventing or limiting the discharge of sewage during the period of flood tide. The board also enclosed a report of Captain the Hon. F. C. P. Vereker, R.N., on a conference held at Bebington on June 6th. Captain Vereker reported that at the conference the application was opposed by the Manchester Ship Canal Company. He had inspected the pool into which Port Sunlight was drained, and found it in a very filthy state with decomposing sewage. There was no

question as to the necessity for better sanitary arrangements. He understood that the Local Government Board had consented to the discharge of sewage into the river Mersey without treatment or purification, but the Bebington sewage entered the river at a point where the conditions tended to cause accretions between Bromborough and the canal. The Canal Company and the Mersey Conservancy drew the attention of the Board of Trade to that. If the siltage could be prevented, the objection would be largely, if not entirely removed, and, as it was largely a question of expense, the difficulty should not be insurmountable. Captain Vereker concluded by saying that the sanitary condition of the whole Mersey estuary was very unsatisfactory, forming a receptacle for the entire untreated sewage of a thickly-populated district, and that state of affairs must lead to siltage and accretion on the shores and banks of the Mersey. The District Council, while protesting against the view taken by the Board of Trade, have asked Messrs. Beloe and Priest to prepare plans of a scheme which will best meet the requirements of the Board.

## Engineering Notes.

**The Committee on the Brighton Marine Palace and Pier Bill** have issued a report stating that the bill does not authorise the construction of any new works, but the object is to extend the periods limited by former Acts with respect to the completion of the undertaking and to authorise the construction of a tramway on the pier. The committee have amended the bill by making the maximum charge 3d. instead of 4d. for the return journey on the intended railway.

**Electric Lighting for Wigan.**—A short time ago the Wigan Corporation applied to the Local Government Board for permission to borrow £90,000 for electric lighting purposes. At an inquiry held into the application it was stated that sufficient promises had been received from intending consumers of electricity to ensure a yearly profit of £5,000. Mr. Allen, solicitor, opposed the application on the ground that the proposed generating house would create a nuisance. Evidence was afterwards given by Mr. Bishop, the Wigan electrical engineer.

**The Iron and Steel Institute.**—The autumn meeting of this Institute will be held at Manchester in the Town Hall from August 15th to 18th. On Tuesday, the 15th, the members of the Institute are to inspect the Lancashire and Yorkshire Railway Company's locomotive works at Horwich, an optional visit being arranged to the coke ovens of the Barrow Steel Company and the Wharfedale Silkstone Collieries, both of which are in the vicinity of Barnsley. A trip on the Manchester Ship Canal is arranged for the next day, and on Thursday the machine and iron works of Platt Brothers at Oldham and the Pine Company's cotton mills in the same town are to be open for inspection. The Lord Mayor of Manchester and the Lady Mayoress will entertain the members at a reception in the Town Hall on the Tuesday, and a special dramatic performance is being organised at the Theatre Royal for the Wednesday evening. For those to whom theatrical entertainments have no charms there is provided a reception and afternoon tea at the Peel Park Art Gallery Museum by the Mayor and Mayoress of Salford on Thursday, while for those of a more Bohemian turn of mind there is a smoking concert at the Hulme Town Hall on the same evening. A specially attractive feature is announced for Friday, the concluding day of the meeting, when the Duke of Devonshire will entertain some of the members at Chatsworth. Those who are not invited to this visit will have an excursion to Haddon Hall and Rowsley, where the local Reception Committee will entertain them.

## Trade and Craft.

### A STONE PRESERVATIVE.

It is easy to understand why a building which stands on wet ground, or in a damp, marshy country, exposed to heavy rains, is damp; but it is less easily understood why a building situated in an apparently dry place and climate is damp. The reason is that there is a large amount of moisture even in what is thought to be dry air, and all kinds of stone, brick, and other building materials possess the power of absorbing moisture from the atmosphere, due to their porous character. Thus it is possible for a wall, built of absorbent materials, to be always damp, even in an atmosphere which seems to be dry. As Colonel Szerelmey explains in his book on "The Cause and Cure of Decay in Masonry," the proportion of water held in solution in the air changes incessantly with the various changes of temperature. The balance of the attraction for water between absorbed materials and the atmosphere varies unceasingly, and moisture is continually passing in and out of every porous substance such as stone. This constant flow of moisture rubs against the particles of stone, slowly loosening them and disintegrating the mass. This being the case, there is only one way to cure a damp wall, and that is by a waterproof layer interposed between the wall and the source of damp to prevent the water from entering the brick or stone. Col. Szerelmey, having found out what was necessary to prevent the damp from getting to the wall, introduced a liquid which had the desired effect, but not before many devices and inventions had been brought forward to cure decay and avoid dampness in porous substances. Szerelmey's stone liquid has outdistanced all other remedies, and has withstood that hardest of tests—the test of time.

At the invitation of Messrs. N. C. Szerelmey and Co., of Rotherhithe New Road, London S.E., our representative visited Wren's Gothic Church, St. Mary, Aldermanbury, in Queen Victoria Street, and there he saw the manner in which the church was being protected against dampness by means of this firm's liquid. When our representative arrived at the church he found that the lower portion had already been treated, and the workmen were applying the liquid to the masonry in the roof. In treating the stonework all scales, and everything which had perished, had been cleared away by means of a steel wire brush. The liquid was then applied with an ordinary brush. About three coats complete the treatment. The building has been erected with Bath and Portland stones and fine sandstone. The stone of the building which had not been treated with Szerelmey's liquid absorbed water like blotting paper does.

The tower of the church is in an excellent condition, but is being coated with the liquid as far as the first lights. The colour of the composition is that of stone when newly worked, and the appearance of the stone is unaltered when treated. There is no doubt that owing to the fact that it is able to endure any amount of heat or cold, is unabsorbent of water, and resists the strongest acids without causing any disintegration, it is one of the best preservative fluids manufactured.

**A New Drill Hall at Musselburgh, N.B.**, for the G Company 6th V.B.R.S. has just been opened. This Volunteer Drill Hall and Home is situated in New Street, Fisherrow, and has been constructed from plans drawn by Mr. Constable, architect, who, along with Mr. Richardson, town clerk, gave his services in connection with the work gratis. The building is not pretentious in appearance, but is commodious, and completely fitted up with orderly, armoury, recreation, and store-rooms, which are situated in the part of the structure facing the street. Behind this is the drill hall, a large and spacious room, lighted from the roof, 61ft. by 34ft., which is capable of seating 500 people comfortably. The hall has cost over £1,000.



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" 25	Lewisham—Enlargement of Town Hall ...	London County Council ...	The Surveyors, Town Hall, Lewisham.
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No date.	Oulton—Infant School ...	Dr. S. Rumbold ...	F. W. Richards, Architect, Stanley-street, Lowestoft.
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" 18	London, E.C.—Reconstructing, &c., Bridge ...	Poplar Board of Works ...	Engineer, Guildhall, E.C.
" 18	London, E.—Footbridge ...	Glyncorrwg Urban District Council ...	Surveyor, Board's Offices, Poplar, E.
" 19	Neath—Laying Water Main ...	Wallasey Urban District Council ...	Surveyor, Cymmer, R.S.O.
" 20	Egremont—Electrical Plant ...	St. Saviour's Union Guardians ...	J. H. Crowther, Engineer, Great Float, near Birkenhead.
" 20	East Dulwich—Laundry Machinery at Infirmary ...	Corporation ...	Kirkland and Capper, 17, Victoria-street, Westminster.
" 22	Glasgow—Electric Traction Plant ...	Lancs. and Yorks. Railway Co. ...	J. Young, 88, Renfield-street, Glasgow.
" 25	Brighouse—Widening Line ...	Rural District Council ...	Engineer, Hunt's Bank, Manchester.
" 26	Ulverston—Waterworks ...	Harbour Management ...	W. F. T. Molineux, 3, Benson-street, Ulverston.
" 26	Christiania—Harbour Works ...	Brazilian Government ...	Commercial Department, Foreign Office, S.W.
" 31	Rio de Janeiro—Lease of Railways ...	Ship Canal Company ...	Commercial Department, Foreign Office, S.W.
<b>IRON AND STEEL—</b>			
July 14	Manchester—Stores ...	St. Mary's Vestry, Islington. ...	Stores Department, Salford Docks.
" 17	London, N.—Cast-iron Hinged Guard Posts ...	Great Western Railway Co. ...	J. P. Barber, Vestry Hall, Upper-street, Islington, N.
" 18	London, W.—Girder Work ...	Glyncorrwg Urban District Council ...	Engineer, Paddington Station, W.
" 19	Neath—Cast-iron Pipes ...	Town Council ...	W. P. Jones, Surveyor, Cymmer, E.S.O.
" 20	Valletta, Malta—Cast-iron Pipes, &c. ...	Urban District Council ...	Crown Agents for the Colonies, Downing-street, London.
" 20	Croydon—Cast-iron Pipes ...	Ealing Urban District Council ...	Borough Engineer, Town Hall, Croydon.
<b>ROADS—</b>			
July 14	Bexhill, Sussex—Tar Paving, &c. ...	Urban District Council ...	G. Ball, Surveyor, Town Hall, Bexhill.
" 15	London, W.—Granite, &c. ...	Urban District Council ...	C. Jones, Engineer, Public Buildings, Ealing.
" 15	Barnet—Kerbing, Channelling, &c. ...	Corporation ...	W. H. Mansbridge, 40, High-street, Barnet.
" 15	Norwich—Making-up ...	Urban District Council ...	A. E. Collins, City Engineer, Guildhall, Norwich.
" 17	Erith—Street Works ...	Urban District Council ...	Surveyor to District Council, High-street, Erith.
" 17	Glasgow—Street ...	Urban District Council ...	Simpson and Wilson, 175, Hope-street, Glasgow.
" 17	Ilkley—Making-up Roads ...	Urban District Council ...	Surveyor to Council, Ilkley.
" 17	Sevenoaks—Levelling, Metalling, Tar Paving, &c. ...	Corporation ...	J. Mann, Surveyor, Council Offices, Argyle-road, Sevenoaks.
" 18	King's Lynn—Road Materials ...	Corporation ...	H. J. Weaver, Borough Engineer, King's Lynn.
" 19	Rochester—Road Metal ...	Melford Rural District Council ...	W. Banks, City Surveyor, Guildhall, Rochester.
" 25	Sudbury, Suffolk—Granite ...	Corporation ...	W. Carver, Surveyor, Long Melford, Suffolk.
" 25	West Ham—Making-up Streets ...	Urban District Council ...	Lewis Angell, Surveyor, Town Hall, Stratford, E.
<b>SANITARY—</b>			
July 15	Dublin—Drainage Works ...	Corporation ...	S. Harty, City Engineer, City Hall, Dublin.
" 17	Ambleside—Laying Sewers, &c. ...	Rural District Council ...	J. H. Scott, Surveyor, Ambleside.
" 17	Bloxham—Sewerage Works ...	Rural District Council ...	W. E. Wood, 13, Marlborough-road, Banbury.
" 17	Halesowen—Sewers ...	Hornsey Urban District Council ...	B. Perrins, Surveyor, Halesowen.
" 17	London, N.—Sewers, &c. ...	J. Pickersgill ...	E. J. Lovegrove, Engineer, Southwood-lane, Highgate, N.
" 17	Westwood, Leeds—Drainage, &c. ...	Rural District Council ...	T. Winn, 92, Albion-street, Leeds.
" 18	Epsom—Sewerage Works ...	Board of Works ...	Beasley, Son and Nicholls, 11, Victoria-st., Westminster.
" 18	Wandsworth, S.W.—Pipe Sewers, &c. ...	Kincardineshire County Council ...	The Clerk, Offices, East Hill, Wandsworth, S.W.
" 22	Johnshaven, Scotland—Drainage Works ...	Sanitary Committee ...	J. Graham, County Sanitary Inspector, Johnshaven.
" 24	Aldeburgh, Suffolk—Sewers, &c. ...	Town Council ...	J. Mansergh, 5, Victoria-street, Westminster.
" 24	Bangor—Sewers, &c. ...	Corporation ...	J. Gill, Borough Surveyor, Bangor.
" 25	Croydon—Sewers, &c. ...	Corporation ...	Borough Engineer, Town Hall, Croydon.
" 25	West Ham, Sewer ...	Urban District Council ...	L. Angell, Surveyor, Town Hall, Stratford, E.
" 25	Bromley—Sewage Works ...	Urban District Council ...	The Surveyor, Council Offices, Bromley, Kent.

COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
July 18	Tendring—Sewerage Scheme ...	£21 ...	District Council.
" 27	Plumstead—Municipal Buildings and Public Library ...	£100, £75, £50 ...	Edwin Hughes, Clerk, Vestry Hall, Maxey-road, Plumstead.
Aug. 1	Halifax—Twelve Shops ...	£50, £25 ...	Barstow and Midgley, Solicitors, 8, Harrison-road, Halifax.
" 17	Batford—Sewerage and Sewerage Disposal Schemes ...	... ..	C. J. Spencer, Clerk to R.D.C., Public Offices, Batford, Not.
" 17	Kirkcaldy—Joint Infectious Diseases Hospital ...	... ..	A. Beveridge, District Clerk, Kirkcaldy.
Sapt. 1	Otley—Isolation Hospital ...	£30, £15 ...	C. V. Newstead, Clerk, Wharfedale Union Joint Hospital Committee, Union Offices, Boroughgate, Otley.
" 30	Tunbridge Wells—Designs in Tunbridge Ware ...	£3 3s., £2 2s., £1 1s. ...	Technical Education Committee.



Property and Land Sales.

**HIGHAM PARK, WALTHAMSTOW.**—The very valuable freehold building estate of nearly 40 acres, known as Higham's Farm, beautifully situate contiguous to the well-known Higham's Park Woods and Lake (one of the prettiest portions of Epping Forest), adjoining Woodford Golf Links, and seven minutes from the railway station, the whole being admirably adapted for development as a residential building estate.

**MESSRS. KEMSLEY** will **SELL** the above by AUCTION, in One Lot, at the Mart, on **FRIDAY, JULY 21st**, at Two.

Particulars of **R. OLIVER, Esq., Solicitor, 1, Corbet Court, E.C.,** and of the **AUCTIONEERS, 41, Bishopsgate Street Within, E.C.,** and at Woodford Green and Romford. 1

**SALE DAYS for the Year 1899.**

Messrs.

**FAREBROTHER, ELLIS, EGERTON, BREACH, GALSWORTHY, and CO.** beg to announce that the undermentioned dates have been fixed for their AUCTIONS of FREEHOLD, Copyhold, and Leasehold ESTATES, Reversions, Shares, Life Interests, &c., at the AUCTION MART, Tokenhouse-yard, E.C.

Other appointments for intermediate Sales will also be arranged.

Thursday, July 13	Thursday, Oct. 12
Thursday, July 20	Thursday, Oct. 26
Thursday, July 27	Thursday, Nov. 16
Thursday, Aug. 3	Thursday, Nov. 23
Thursday, Aug. 10	Thursday, Dec. 7
Thursday, Sept. 21	Thursday, Dec. 14

Messrs. **FAREBROTHER, ELLIS, and CO.** publish in the advertisement columns of "The Times," "Standard," and "Morning Post," every Saturday a list of their forthcoming Sales by Auction. They also issue on the first of every month a schedule of properties to be let or sold, comprising landed and residential estates, farms, freehold and leasehold houses, City offices and warehouses, ground-rents, and investments generally, which will be forwarded free of charge on application.—No. 23, Fleet-street, Temple Bar, and 18, Old Broad-street, E.C.

By order of the Executors of the late owner.

The Valuable FREEHOLD PROPERTY known as "Royal Dockyard Wharf," Lower Woolwich-road, S.E., together with the Fixed Plant and Machinery and Goodwill of the old-established TIMBER and BUILDERS' MERCHANT'S BUSINESS, as a going concern, and the LEASE of the adjacent Waterside PREMISES, known as "Mast Pond Wharf," will be offered for SALE by Public AUCTION in One Lot by **MESSRS. BRADSHAW, BROWN, and CO.** at the MART, Tokenhouse-yard, E.C., on **TUESDAY, JULY 25th, 1899,** at One o'clock precisely.

The Freehold Property (built by the British Government) has a granite embankment to the River Thames of about 400ft.; and a frontage of about 442ft. to Lower Woolwich-road, with three cartway entrances therefrom, and comprises an area of about 2½ acres. Two granite-paved shipways, one 235ft. long, 53ft. wide.

"Mast Pond Wharf" has a frontage to the river of about 100ft., and contains an area of about three-quarters of an acre.

The Lease has an unexpired term of about seven years, at a rental of £150 per annum.

**JOHN BARLETT, Esq., Solicitor, 26, Bush-lane, E.C.;** Auctioneers' Offices, Billiter-square Buildings, E.C., and Millwall, E.

**SPRING-GROVE ESTATE, ISLEWORTH, MIDDLESEX** (overlooking Osterley Park, the seat of Earl Jersey).—126 acres of FREEHOLD BUILDING LAND.

**MESSRS. GREEN & SON** beg to announce that, the above PROPERTY not having been sold at the recent Auction, they are prepared to enter into negotiations for same as a whole, free of restrictions, or sub-divided as follows: 53 acres adjoining Osterley Park Station; 48 acres adjoining Osterley Park Station & 6½ acres with building frontages of 2860ft.; 7½ acres with building frontages of 2917ft.; 9½ acres with building frontages of 1317ft. Portions of the property would be let at ground rents to be arranged.

Particulars, plans, &c., of Messrs. **GREEN and SON, Auctioneers and Surveyors, 28 and 29, St. Swithin's-lane, London, E.C.**

**CITY OF LONDON.**

City Improvements.—By order of the Corporation.

To Brewers, Licensed Victuallers, Restaurateurs, and others. Offering an opportunity of securing one of the finest sites for licensed premises.

In the heart of the shipping, wine, Colonial, and corn trade centres.

The valuable Free LEASE of the important corner Building Site, together with the License thereto attached, now occupied by fully-licensed premises, the Mercantile, and the adjoining property known as 126, Fenchurch-street, E.C.

Having a frontage of about 36ft. 5in. o Fenchurch-street, and about 43ft. 2in. to Fen-court, which is now being widened, and will form an important thoroughfare, with an enormous pedestrian traffic, the whole covering an area of about 1,374 square feet. A free lease for sixty-five years will be granted at the moderate ground rent of £300 per annum.

**MESSRS. DOUGLAS YOUNG and CO.** will **SELL** the above by AUCTION, at the Mart, E.C., on **WEDNESDAY, JULY 19th, 1899,** at ONE o'clock precisely.

Plans, particulars, and conditions of sale may be obtained of the **COMPTROLLER or the CITY ENGINEER, Guildhall, E.C.;** or of the **AUCTIONEERS, No. 51, Coleman-street, E.C.;** 313, Clapham-road, S.W.; and Ilford, E. 1

**WALTHAMSTOW, Essex.**—83 Plots of exceedingly valuable FREEHOLD BUILDING LAND, free from tithe and land tax, being the remaining portion of the Rectory Manor Estate, having important frontages to Church-hill and the new roads leading therefrom to Forest-road, within a few minutes' walk of Hestreet Station on the G.E.R., from whence there is an excellent train service during the day and half-hourly throughout the night. Fully ripe and immediately available for the erection of private residences, and affording an excellent opportunity for the creation of ground rents. Also two Paddock Sites in Aubrey-road.—For SALE by AUCTION, on behalf of

**THE BRITISH LAND COMPANY, LIMITED,** at the **CHEQUERS, High-street, Walthamstow,** on **THURSDAY, JULY 13th,** at SIX for SEVEN o'clock in the evening. Free conveyances. Purchase-money payable by a deposit of 10 per cent., and the balance by easy instalments extending over nine years.

Particulars, plan, and conditions of sale may be obtained of the **SECRETARY, 25, Moorgate-street, E.C.,** and at the place of sale.

**ANSELL and MALLOWS, Architectural** Draughtsmen and Quantity Surveyors, 21, Buckingham-street, Strand, W.C.

**R. I. B. A. EXAMS. PREPARATION,** personally or by correspondence, in three, six, nine, or twelve months' courses. Architectural Lending Library. Special three months' finishing courses.—For full particulars apply to Messrs. **HOWGATE and BOND, Associates R.I.B.A.,** Perchard House, 70, Gower-street, W.C. (close to the British Museum).

**ARCHITECTURAL Institute, Society of** Architects, and Civil Service Technical Examinations. Preparation by correspondence, personally, or in residence. Seventeen first places.—**MIDDLETON and CARDEN, 19, Craven-st., W.C.** 1

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**BUILDING SITE,** about two acres, on 99 year's lease, for factory, within five or six miles of London (N. preferred); must be near railway station with good train service. Write giving full particulars, Box 266, Sell's Advertisement Agency, Fleet Street, London. 1

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**GENERAL FOREMAN** wants a Job, Carpenter and Joiner. General knowledge of all branches, well up in structural alteration, public-house work; town or country. Good references.—"J. B.," 66, Acre-road, Kingston-on-Thames. 3

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FRANK MILES DAY AND BROTHER  
ARCHITECTS  
925 CHESTNUT STREET, PHILADA.  
F. M. DAY H. KENT DAY

March 1, 1899.

Mr. George Wragge,  
Salford,  
Manchester, England.

Dear Sir:

Noting your full page advertisement in the "Specification" this morning reminds us that we have been intending for some time to write to you to tell you how admirably your casements in Mr. Newbold's house behaved during the recent blizzard. The storm was one of unprecedented severity, the snow being thirty inches on a level and it was accompanied by winds of great velocity. The snow being very fine and dry, found its way in generally through the slightest cranny. The blizzard was promptly followed by a rapid thaw that set everything afloat and caused quite serious damage through leaks. The conditions were probably the most trying that we remember during the course of our practice. Your casement frames perfectly resisted every force of that storm and the subsequent thaw. No snow whatever entered Mr. Newbold's house either through the doors or windows, nor did any water get in when the thaw came.

This, we think, shows not only the excellence of the goods of your manufacture but the fact that they were well installed by the men under our direction. We are glad to be able to write you this, not only on our own account, but because the Owner of the house particularly wished us to express to you his satisfaction with your work.

Yours very truly,

*Frank Miles Day & Bro.*

The above *UNSOLICITED* Testimonial refers to a very important order for upwards of 250 BRONZE CASEMENTS supplied to Mr. Newbold's Mansion, Philada. U.S.A. The sections used were Nos. 20, 22 and 24, illustrated in our NEW CATALOGUE, pages Nos. 10, 14 and 18 respectively.

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March 15th, 1899.



# THE BUILDERS' JOURNAL & ARCHITECTURAL RECORD

WITH SURVEYING AND SANITARY SUPPLEMENTS

JULY 19, 1899.

No. CCXXXII.

## An Architectural Causerie.

### London Commons and Their Destiny.

THE growth of London has attracted serious attention from time to time, ever since the days of Queen Elizabeth, an age which the poets, more happily than they knew when they penned the epithet, have termed "spacious." When "good Queen Bess" ruled, the population of London was comprised within what we now call "the City," a place now depopulated at night. London, all told, comprised then perhaps 90,000 persons. Outside the City there was the village of Charing, and Westminster stood remote in the country. The citizens were content to live in the City, and for ten miles round the metropolis stretched lonely heaths, which produced nothing but footpads and highway robbers. So much towards a picture of London's surroundings 300 years ago. Yet even then the Government was alarmed at the growth of the metropolis, and framed enactments restricting building operations. We need not point out that those laws were futile. So much is self-evident. From that period a steady and cumulative growth has taken place, redoubled, of course, at the dawning of the railway era. Relentlessly spreading, dozens of villages have been overwhelmed and added to the interminable streets, and in a ten-mile radius from the Royal Exchange but little land is left still unbuilt on. It has, however, been left to these last few months to witness the beginning of the final surrounding of London's great commons by a continuous fringe of houses. Over a year ago the village of Barnes was cut up by the builder, and streets of villas built fringing the picturesque common of Barnes. Already the hillside common of Streatham had been thus surrounded by the cutting up of large estates bordering upon it. Now the still greater Wimbledon Common, hitherto more rural than any other, is in danger of losing its especially countrified character since the sale of Wimbledon Park at the end of June. The extensive estate of Wimbledon Park, the seat of the late Sir Henry Peek, ran beside the Common for a long distance along the road between Putney and Wimbledon town, and was inclosed within an inoffensive, old, red brick wall. The whole of this estate is now to be laid out in building plots, so that within a year or so the Common will become nearly as much inclosed as any London park. This, indeed, would appear to be the destiny, within our own time, of all the commons comprised in the ten-mile circuit. It is alike pitiful and inevitable that, with this hemming-

in of open spaces by great populations, there arises a call for and need of the government of all such places, with the result that their character as wild, natural common-lands presently disappears, and park-like roads and formal plantations take its place. It has been left to the present time to see money in the fact of a house facing an open space, and, now that this is perceived, it will not be long before estates situated on the borders of our commons all change hands at high prices for building long rows of "villas" upon. Sheen Common is another instance of this movement. At present it remains rural, and sur-

meet anyone, except just within the Star and Garter gates, at the Richmond side. Now groups are under every tree, and the deer, once so timid of the casual stranger in these wilds that they would fly at a distant sight of him, will now pluck up sufficient assurance to feed from the hand of the visitor. Meanwhile, Surbiton, Kingston, and Richmond are growing up to the very walls of the park, and at no very distant time we shall doubtless come to hear of an agitation for the destruction of those blank walls and their replacement by open iron railings, just as we have already heard of a movement for a similar railing to that inclosing Hyde Park to take



DRAWN BY F. HAMILTON JACKSON, R.B.A. (See p. 353).

rounded by meadows where the cattle graze; but those meadows have their price, and—in the modern slang term—are "ripe for building," so that even now the usual boards are going up, announcing "eligible residences," and the Common will become, in effect, a park for the enjoyment of those whose houses will look upon it. How quickly suburban London has come up with these once secluded spots is well within the knowledge of those still young. Within the present writer's own recollection, for instance, Richmond Park was a solitude in which it was a strange and unaccountable thing to

the place of the high wall bounding Kew Gardens, besides the road from Kew to Richmond.  
C. G. H.

**Holiday Sketching.** WHILE to all brain workers the annual summer holiday comes as a great boon, to the architect it comes also as an opportunity for refreshing study, free from the confinement of the office, and apart from the worries of everyday business life. Men of other callings frequently find their holidays wearisome, especially if they be of any length, for want of an object; the architect, setting out with



sketch block and scale rule, is possessed of this object in his desire to improve his powers of design and his knowledge of his art. And he is the happier man, mentally and physically the better, coming home at the end of his sketching tour as bronzed as his brother who has lounged his time away on sea beaches, and the richer by the portfolio of sketches which he has accumulated. Few things are more pleasant than to sit down under shady trees in one of the many beautiful spots in our beautiful country and sketch with pencil or with brush. Certainly there is some temptation to make slight general sketches of outline and of grouping rather than serious measured drawings, yet even these have a distinct value, especially to one who spends his working life in close company with the drawing board and T-square, and who is consequently apt to design rather for elevation than for mass, and to lose his appreciation of how things will look when



SLIGHT HOLIDAY SKETCH MADE NEAR SOUTH-END IN A POCKET-BOOK MEASURING  $4\frac{1}{2}$  IN. BY  $2\frac{3}{4}$  IN. BY G. A. T. MIDDLETON.

built, unless he occasionally sketches in this way. But presently the more serious work is sure to be undertaken, for there comes the desire to every architect eventually to find out exactly for himself how this or that effect which strikes him as good has been obtained. Even then, unless it be undertaken for some set purpose, there is no necessity for laboriously careful work. In fact, it is somewhat to be deprecated in holiday time, except on the part of the beginner, who, unless he works carefully, would probably make mistakes. By using paper divided into quarter-inch squares by light lines, sufficient accuracy for all practical needs can be secured at once, the work being directly plotted to scale, the leading dimensions figured. System, however, is necessary. There should be first a small scale-measured general plan and skeleton elevation, with reference letters to the details, drawn quarter or half full size at least; and the details should themselves be so arranged as to show at a glance how shafts fit on top of bases, and arch moulds on to capitals. In order that the drawings may be to a large enough scale to be of value, the paper used must be large, too. Nothing under quarter-Imperial size is of much use—a half-Imperial block is better, but it is heavy to carry and to hold. The general perspective sketch, which should never be omitted, may very well be done to a smaller size, a pocket sketch book being frequently large enough, though not to be greatly recommended. Yet it would be a mistake to start on a holiday without the smaller book. It is available for jottings at odd moments, and if employed occasionally for notes which are not architectural, the interest of the book is increased and little harm is done.

G. A. T. M.

## On Reflection.

### Why Did they Laugh?

THE Shambles Committee of the Stockton Corporation offered premiums of £25, £15, and £10 respectively for the best design for a new market hall. Ten designs were received, and—ostensibly, at any rate—the usual precautions to secure anonymity were taken. At a recent meeting of the Corporation the committee (there seems to have been no assessor) recommended that the premiums should be awarded respectively to the plans numbered 7, 9, and 8. When the envelopes containing the winning numbers were opened, a curious thing happened. We quote from the Darlington "Northern Echo": "Some laughter was occasioned when it was found the three successful architects all belonged to the town, though the other competitors came from other such far off places (*sic*) as Leicester and Newcastle." We should like to know the true inwardness of that laughter. Was it merely the innocent mirth of those who take a child-like delight in a curious coincidence? Or was it the chuckle of a gratified patriotism caused by the reflection that three citizens of Stockton had beaten the architects of the "other such far-off places?" We will charitably hope it was one or other of these things, or a mixture of both. But the town councillors of Stockton should remember that unsuccessful competitors, with an extensive and bitter experience, perhaps, of the ways of building committees, may be inclined to give a more sinister interpretation to such ebullitions of merriment. It is advisable—in order to avoid the reproaches of the censorious, if for no other reason—that public authorities before inviting architects to enter a competition should decide whether they really mean to build or not (the Stockton Corporation does not seem to have decided yet), and then engage the services of a competent assessor.

### The Government and Art.

THERE has lately been laid on the table of the House of Commons some correspondence which forms an interesting, if a melancholy, commentary on the way in which the artistic interests of the nation are neglected by Her Majesty's Government. The correspondence in question is between the trustees of the National Portrait Gallery and the Treasury and has reference to three portraits of considerable historical and artistic value which the trustees desired to purchase. It appears that the Marquis of Normanby has offered to sell to the National Portrait Gallery a full length portrait of the Queen, which was painted by Sir David Wilkie and exhibited at the Royal Academy in 1840, a portrait of Charles I. by Daniel Mytens and a portrait of Henrietta Maria, ascribed to Van Dyck. The price of the three pictures together is something over £3,000, a sum which many private collectors would, no doubt, willingly give for three such interesting examples, but which the National Portrait Gallery, with its paltry annual grant of £750 finds altogether prohibitive. Viscount Peel, as chairman of the Board of Trustees, makes a strong appeal to the Treasury for a special grant to allow of the purchase of these pictures, especially in view of the fact that in each of the three cases the National Portrait Gallery is but ill provided with a portrait. The answer of my Lords of the Treasury, stripped of much polite verbiage, resolves itself into a simple refusal to do anything in the matter. Lord Peel returns to the subject in a second letter, in which he expresses, not without warmth, the very deep regret of the trustees at being deprived of the opportunity of securing the fine portrait of the Queen by Sir

David Wilkie. He points out the great increase in the market price of pictures so that an annual grant of £1,500 would now barely suffice for the purchase of the same portraits that could be obtained for £750 twenty years ago. My Lords, however, remained obdurate, pointing out in a final letter that Parliament when assigning to the Portrait Gallery the grant of £750 was acting on the principle that, in acquiring examples, regard must be had to the celebrity of the person represented rather than to the merits of the artist. From which it would seem to follow that the only portraits the trustees of the Portrait Gallery can hope to acquire for the nation are those of inferior artistic value—the leavings of more wealthy collectors. Truly a humiliating state of affairs for the richest nation in the world.

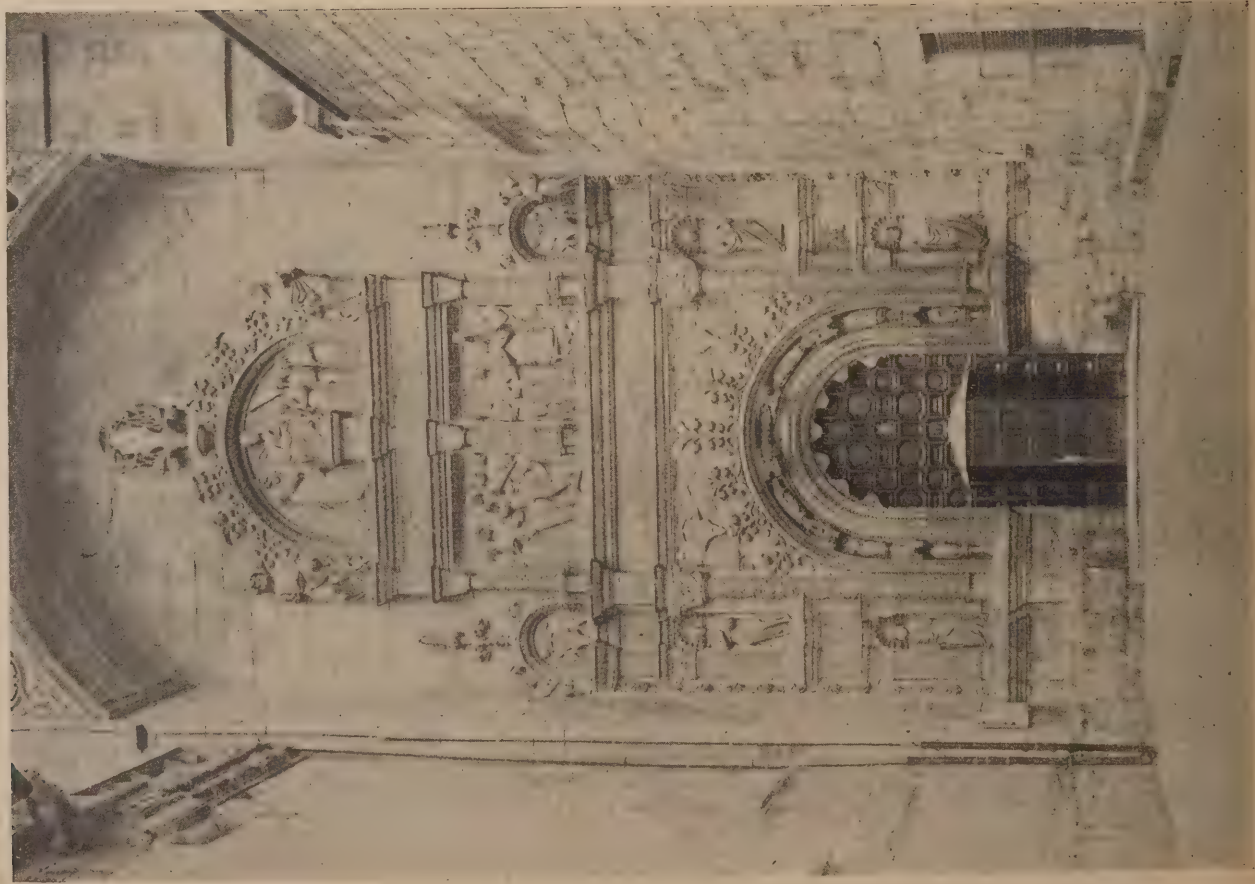
### Labour Troubles in Denmark.

DURING the past two months the little kingdom of Denmark has been in the throes of a labour struggle more severe and critical than any which we have up to the present experienced in England. From the somewhat meagre information regarding the causes and progress of the dispute that has hitherto reached this country it would appear that the employers have taken advantage of a small local dispute to precipitate a general conflict by which they hoped to check the growing power of the workmen's organisations, or, as the men contend, to crush these organisations altogether. Labour is more highly organised in Denmark than in any other country; practically all the workmen are members of trade unions, and all the unions are federated in one strong central body. To meet this powerful organisation, the employers also have formed themselves into a federation. The employers made eight demands of the United Trade Unions Federation, and the rejection of these was followed by a general lock-out, involving all the men engaged in the building, engineering, and allied trades. Seeing that one of the demands was that no permanent employes or foremen should belong to trade unions, the employers can hardly have expected that their terms would be agreed to. The number of men involved in the dispute is stated to be about 40,000, and as there are not more than 80,000 workmen engaged in industrial enterprises throughout the country, it is evident that the struggle is on a relatively colossal scale, and that the suffering and loss to both sides must be very great. Obviously, the wide-spread character of the present dispute is due, to a great extent, to the fact that the contending forces are so highly organised; and therefore it becomes a matter of great importance to employers and employed everywhere to consider whether the strengthening of the organised forces of capital and labour does not increase the danger of industrial conflict. A lock-out or strike involving 50 per cent. of the industrial population of this country would be a calamity almost too horrible to contemplate. The tendency in England is for both employers' and workmen's organisations to form strong federations, after the Danish model, and so increase their fighting strength. On the principle that the increasing deadliness of instruments of war is a strong guarantee of peace, this tendency is welcomed by many. The consequences of a general struggle, it is argued, would be so terrible that men would be unwilling to incur the responsibility of taking any action which might have that result. Unfortunately, the Danish employers do not seem to have been influenced by any such reasonable and humane considerations, and, for ourselves, we cannot regard with complacency the formation of colossal amalgamations either of employers or employed until we have some far more effective machinery for conciliation and arbitration than at present exists.



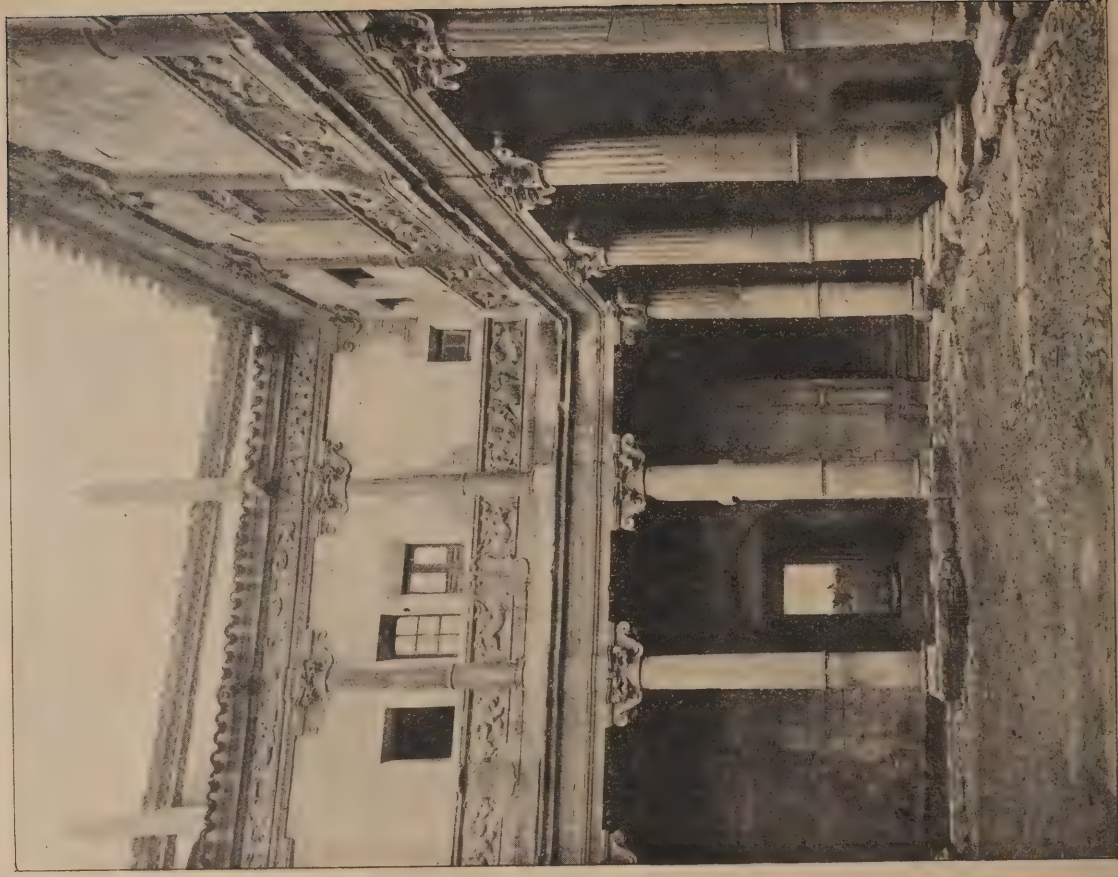
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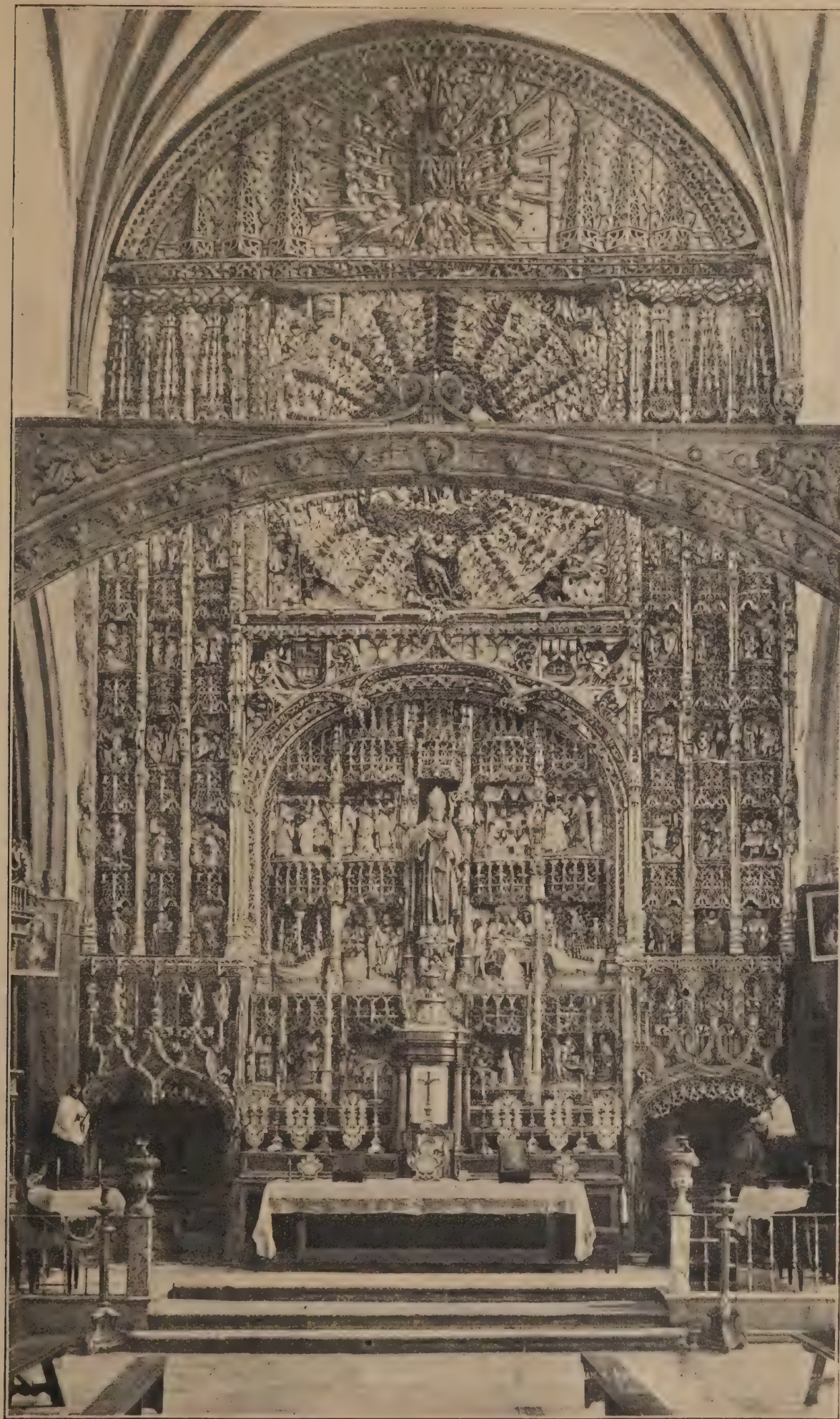
PUERTA DE LA PELLIGERIA.

IN THE CITY OF BURGOS, SPAIN. (*See* p. 353.)



CASA MIRANDA.





REREDOS IN THE CHURCH OF S. NICHOLAS, BURGOS. (See p. 353.)



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DRAWN BY F. HAMILTON JACKSON, R.B.A.

## SPAIN: Picturesque Cities & Monasteries in the North.

### No. IX.—BURGOS.

By F. HAMILTON JACKSON, R.B.A.

(Continued from page 260, No. CCXXVI.)

THE city of Burgos was the ancient capital of the kings of Castile. It lies among the hilly regions, the Montañas, at a distance of over 200 miles from Madrid, and about 170 from the frontier. From its elevation and the scarcity of trees, it is much exposed to the northerly winds, and its climate has a bad reputation. It is said to be dull, damp and cold, and even in June and July its habitants sometimes think it advisable to "pack up." The saying, "Diez meses de invierno dos de inferno" ("ten months of winter and two of the infernal regions") which is now applied to Madrid in the reverse sense, originated here, and is mentioned as long ago as 1536 in this connection by Navagero. Yet notwithstanding its bad reputation, the town is healthy, and the death rate not very high. It stands on the Arlanzon, and a smaller stream, the Pico, passes through parts of it. There are many fountains, and an abundant supply of water. The city slopes up from the river to the greatest height within the walls, where the castle is situated, and many of the churches are approached by flights of steps in consequence.

The city was founded in the year 884 by Diego Porcelos, and in 959 Count Fernan Gonzalez shook off the yoke of the kingdom of Leon, and became hereditary Conde de Castilla, a dignity which was then equivalent to a kingship. The castle, which was the palace of the early counts, has seen many interesting historical events enacted within its walls. It was here that Fernan Gonzalez brought Garcia, King of Navarre, a prisoner, and confined him within it for thirteen months. Within its walls also was celebrated the bridal of the Cid. Alfonso the Sixth of Leon was taken here, where he was made prisoner by the Cid in the church of Carrion. Here St. Ferdinand received St. Casilda, the daughter of the Moorish King of Toledo, who was converted to Christianity, and it was the birthplace of

Pedro the Cruel. Don Fadrique, son of Enrique II., who was the first Spanish duke, was imprisoned here; and here, again, Edward I. of England espoused Eleanor of Castile. But none of the surroundings of these various occurrences are now to be seen.

The State rooms of the castle were destroyed by a fire in 1736, and the explosion in 1813, during the French invasion, ruined the windows of the cathedral, and made the desolation more complete. It is now a mean building, useless as a fortification, which stands upon a rugged hill strewn with the debris of buildings. Yet this part of the town was once most populous. Below the castle runs the Calle Alta to the Puerta St. Martin, and just within this gate is a cemetery, which occupies a great part of the ancient parish of San Martin, in the church of which the Cid was baptised, the houses of this parish having been razed to the ground by the French. The Calle Alta, being the nearest street to the protecting castle, was the first inhabited when Burgos became a city, and here the aristocracy lived. On the side next to the castle scarcely a house remains, though this destruction is not all the work of the French, for an inscription on the ridiculous monument, which marks the site of the Cid's house, records that it was destroyed in 1771.

The most imposing monument in Burgos, however, is the Cathedral, and it is to this that the attention should first be directed. It is a building for the most part Gothic in style, built in the main in the thirteenth century, but it has many later and most beautiful additions. The foundation stone was laid in 1221 by an Englishman, a certain Bishop Maurice, together with the King, Ferdinand El Santo (who founded it in honour of his marriage with Beatrice, daughter of the Duke of Suabia), and the Infante Antonio de Molina. As with so many other fine cathedrals the name of the original architect is unknown—though plenty of names of those who designed and carried out later additions are recorded. The west front is spoilt by alterations made in the last century, and the "lace-like" towers which are so much praised by the guide-book writers are over elaborated and fussy in appearance. The most striking parts of the exterior are the late Gothic and Renaissance Capilla del Condestable and the Puerta de la Pellegeria, which opens at the base of the celebrated staircase in the north transept, though the doors both of the north and south transepts are fine of their sort. This door derived its name

from a street which once existed here, inhabited by dealers in skins, and is a very beautiful work of the earlier Plateresque style, equalling in its decorative design Italian sculpture of the early Renaissance. The escutcheon of Bishop Fonseca, who found the money for the work, crowns the composition, and also appears in the spandrels. Below this crowning detail the bishop is carved kneeling before the Virgin, behind whom are three angels playing on instruments. Below this again are two subjects, the martyrdom of St. John the Baptist and of St. John the Evangelist. Flanking the door are standing figures in niches, and the ornamental work is of the greatest delicacy and richness. The walls of the Constable's Chapel are enriched with coats of arms and ecclesiastical emblems supported by angels, savages, and lions. The portion enclosing the sacristy is embroidered with beautiful lace-like carving, which marks structural levels, and surrounds the windows, finishing with a beautifully delicate openwork cornice, with turrets at the angles, weighting the flying buttresses which support the lantern vault. The lantern, which rises above the crossing of nave and transepts, is Renaissance in style, and rather later. It is octagonal, with eight turrets, ornamented with statues of saints and virtues, which are crowned with figures of angels holding crosses. The interior of this lantern is supposed to be the gem of the whole edifice, but a remark of Charles V., intended as praise, not unfairly indicates its defect. He said "that it ought to be placed in a case, and not be seen as other ordinary work." Philip II. said that it was rather the work of angels than of men. It was finished in 1567, and was designed and executed by Burgalese artists, though the name of the designer—Felipe de Borgoña—might suggest a foreigner. He lies buried close by. I do not propose to attempt a description of the whole Cathedral, or, indeed, of the town, but simply to note the things which most attracted my eye in it. The two chapels of the "Presentation" and of Santa Ana, one on each side of the nave, contain many beautiful works of various kinds. It will suffice to mention the *retablos* above the principal altars, finely carved and coloured, and the *rejas*, or iron screens, dividing them from the aisles, which are painted and gilded, one being an elaborate work in *Gotico florido*, the last phase of Gothic, which was used in ecclesiastical decorative detail long after Renaissance was the style in universal use for domestic work; and the other,





S. NICOLAS AND PLAZA IN FRONT OF THE CATHEDRAL, BURGOS.

very similar in the essentials of design, but in an early Renaissance dress, with an exceedingly beautiful cresting. The one is a work of 1474, the other of 1519. At the entrance of the Constable's chapel is another very beautiful Renaissance *reja*, the master-work of Cristobal Andino, wrought in 1523. In this the upper part is designed quite differently, and the Gothic tradition of construction is thrown aside. The interior of this chapel is full of delicate and beautiful carving. There are three altars, all of them with exquisitely carved *retablos*, and on the walls are large escutcheons of the Velascos supported by wild men and women. It was erected in 1487 as a burial place for the Velasco family, Hereditary Constables of Castile, and the effigies of the founder, Pedro Hernandez de Velasco, who died in 1492, and of his wife, Dona Mencía Lopez de Mendoza, who died in 1500, lie in front of the high altar. They are worked with a wonderful elaboration of detail which yet does not disturb the general effect, and were sculptured in Italy in 1540. There are fourteen windows filled with painted glass, almost the only glass left unruined by the explosion when the French abandoned the castle in 1813. In the Chapel of the Agony is kept the much venerated *Cristo de Burgos*, a very early crucifix, which is said by Spanish tradition to have been carved by Nicodemus shortly after he with Joseph of Arimathea buried our Lord. It was found floating on the sea inside a box, and after many eventful journeyings and mishaps, was in 1836 deposited in this chapel. It appears to be the work of a sculptor, and not of an amateur, so I fear that the legend must not be implicitly accepted. It is girt with a richly embroidered crinoline, and as in so many of the Spanish crucifixes, real hair has been added, with an unfortunate effect to English eyes. The staircase to the north door is a beautiful specimen of the early plateresque, designed by Diego de Siloe, who carved the marble work, the metal balustrading having been wrought by Cristobal Andino in iron in the most exquisite fashion. It was necessitated by the position of the cathedral on the hill-side, the ground level at the north being high above the floor of the nave, while from the south transept a similar number of steps descends to the plaza del Duque de Vittoria, and the cloisters, which one enters from a finely-carved door in the south transept, have a storey below them. It was found that the draught from the lower door to the higher, across the nave, was so strong that the upper door had to be kept closed, and it has not been opened for more than a hundred years. The *reja* of the transept was wrought by a lay monk named Pedro Martinez, in 1723, a very late date for such a

work; that of the choir is earlier, made in 1602 by G. Bautista de Alma. The *retablo* behind the high altar was put up between the years 1575 and 1593, by the two brothers Rodrigo and Martin de la Haya. It is a crowded series of compositions and is gilded from top to bottom but in its place looks fine and impressive. Behind the high altar the *trasagrario* is enriched with excellent alto relieves representing the Passion of Christ. They are the work of Juan de Borgoña and were wrought in 1540. The cloisters are of the fourteenth century, and contain many tombs with fifteenth century railings and grilles defending them. In the chapter house is an ancient chest which is called "The Coffer of the Cid" and claims to be one of the two chests filled with sand and stones which he left as security for a loan of 600 marks with the Jews, Rachel and Vidas.

Not far away is the church of Santa Gadea, one of the churches of purgation by adjuration, in which the Cid made Alfonso VI. swear that he had no part in the murder of his brother, Don Sancho, at the siege of Zamora. "The gallant Cid, who held a crucifix, made him swear the truth upon an iron lock, a crossbow, and the gospels."

The oath which he dictated was so awful that the king did not venture to take it. "But a knight, a friend of the king, said unto him: 'Swear, and fear nought, brave king, for never was a king perjured, nor a pope excommunicated.'" The king then took the oath, but was filled with anger, and this was the cause of the Cid's banishment. The lock is now affixed to the wall out of reach.

In the church of San Nicolas, close to the Cathedral, is a marvellous *retablo*, or reredos. The whole eastern wall of the church is filled with figures and groups standing in rows under most beautifully worked canopies, coloured but faintly, and partially gilded. The composition is divided into a central portion and two wings, above which, in the tympanum of the arch, is a Christ in glory. Below Him is a Coronation of the Virgin, the figures surrounded by an aureole formed of ranks of angels arranged like the spokes of a wheel. Beneath the feet of the principal figures stands St. Michael, and the corners are filled up with the four Evangelists; St. Luke is painting at an easel. Below these figures is a highly ornamented arch, in the centre of which is a large figure of St. Nicholas, with scenes from his life, arranged in three stages, divided by canopies exquisitely worked. The wings at each side of these subjects are filled with small groups of angels and subjects from the life of Christ, under equally beautiful canopies; and below them, on each side of the altar, is a tomb of the Polancos, who gave the *retablo* some time between 1412 and 1503. It is such a work as is certainly not to be seen outside of Spain, and very rarely within that country. The church also contains a good iron pulpit, and the door has some good carving in low relief on its panels. Proceeding along the Calle Alta, many ancient iron knockers of quaint shapes may be seen, though the houses are now inhabited by the poor, and not as in days gone by, by the aristocracy; and soon the arch of Fernan Gonzalez is reached, erected by Philip II. to the memory of that hero. This arch now stands by itself by the side of the road surrounded by desolation. The gate of San Martin just beyond is a picturesque erection of brick and stone with Moorish horseshoe arches. The cemetery gateway is close by, bearing over it an impressive couplet, the meaning of which is—

Short is life and rapidly fleeting,  
Woe to thee, O, man, if thou wastest it.

Below in the suburb was a stork's nest on the top of a church belfry, the male bird stood on guard, while the female's head just appeared above the edge of the nest. Returning below



CLOISTERS IN THE CATHEDRAL, BURGOS.



the castle the church of San Estéban appears, with its rich façade. It has some interesting tombs within and very delicate architectural carving. A little further is to be seen another Moorish gateway, built mainly of brick, outside of which is a roadside cross which groups well with the old walls, the roads, and the lower town. Passing down outside the walls the town may be re-entered by the Puerta San Francisco, not far from the church of San Gil, which contains some fine Gothic tombs, two magnificently carved and grouped retablos, gilded and coloured inside chapels, and an iron pulpit of elegant design. From this church the way is short to the Plaza del Huerto del Rey, which has in its centre a fountain with a pillar supporting a figure seated on a gilded dolphin. A vegetable and fruit market may be seen in progress here by those who are afoot early enough, providing subjects for pencil and brush. In the next street is a picturesque

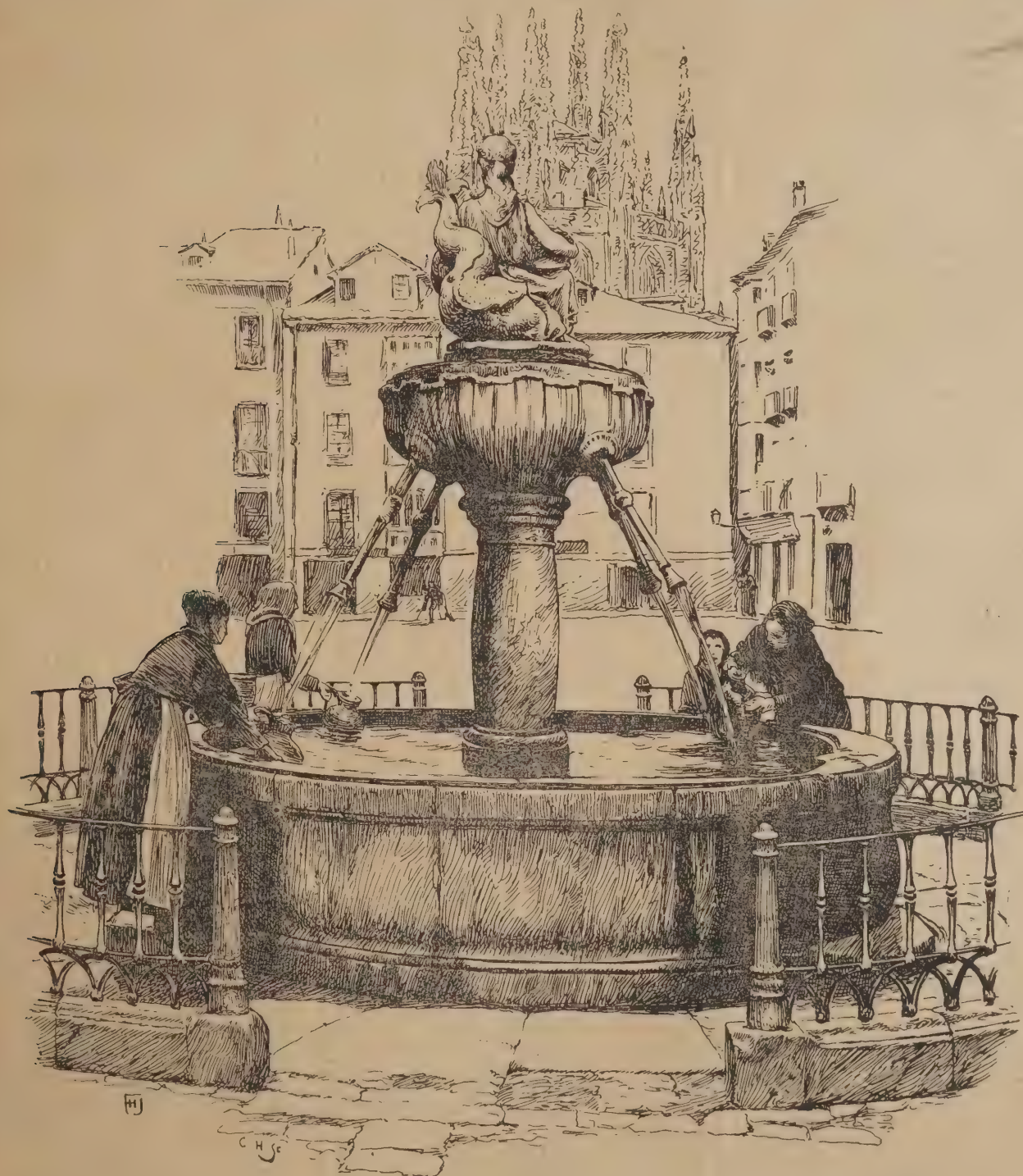
piece of light and shade. A low archway conducts to an inn under a colonnade, used by the country folk—a most uninviting and unlikely entrance to our English ideas! Looking the other way there is another plaza sloping up the hill, at the corner of which is an ancient palace, now turned into shops and workshops, the beautifully carved doorways seeming woefully out of place and forlorn in such company.

On the other side of the river are other houses which have fallen on evil days, such as the Casa de Miranda, once a nobleman's house with a beautiful patio and fine ceilings to the rooms, now occupied as tenements by working people, who live and work in portions of the state apartments, for the large rooms have been divided by roughly-built walls, and the spaces between the colonnade on the first floor filled up to provide more rooms. Another fine house was the Casa del Cordon, a building of the end of the fifteenth century. It was the

house of the constable who built the chapel in the cathedral. The doorway is surrounded by a heavily carved knotted rope, the cordon or rope of the Teutonic order which links the arms of the houses of Velasco, Mendoza, and Figuera with those of royalty. The interior was gutted by the French, but some remains of its former architectural beauty may still be seen.

(To be continued.)

**A Bootle Joiner's Fatal Fall.**—Patrick T. Kavanagh, joiner, while engaged last week in lifting a plank on the roof of some newly-erected dwelling-houses in Balliol Road, Bootle, slipped and fell from the parapet of the building to the ground, a distance of about 40ft. He was taken to the hospital in an unconscious condition, and died shortly afterwards.



Fountain at  
Burgos

DRAWN BY F. HAMILTON JACKSON, R.B.A.



## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### EXAMINATIONS FOR SURVEYORS.

To the Editor of THE BUILDERS' JOURNAL.

DEVIZES.

DEAR SIR,—Will you kindly inform me through the columns of your valuable journal, whether there are any institutions in existence where Quantity Surveyors can be examined as to their practical knowledge of taking out Bills of Quantities. SURVEYOR.

Such examinations are conducted by the Surveyors' Institution. Particulars can be obtained from the Secretary, at Savoy Street, Victoria Embankment, W.C.

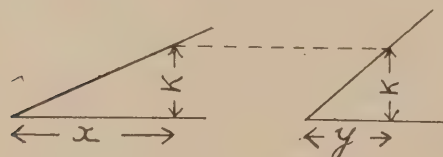
### INTERSECTION OF ROOFS.

To the Editor of THE BUILDERS' JOURNAL.

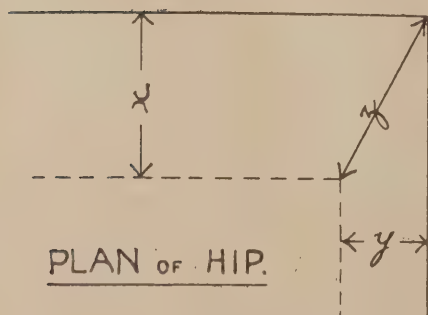
HAMPSTEAD, N.W.

SIR,—I should be obliged if you would kindly inform me the best method of finding the lines of intersection between roofs of different pitches.—Yours, &c., H. W. P.

The simplest method is that shown in the accompanying diagrams. First draw skeleton sections of the two roofs, intersecting them



SECTIONS.



SECTION OF HIP.

METHOD OF FINDING LINES OF INTERSECTION BETWEEN ROOFS OF DIFFERENT PITCHES.

by a horizontal line at the uniform height K, giving plan lengths of X and Y. Make a plan from these two plan lengths as shown, giving plan length of hip Z. Then make a section along the hip with plan lengths of Z and the uniform height K. Valleys can be similarly treated, and so can roofs which meet at other angles than right angles. G. A. T. M.

### IRON AND GLASS ROOF TO COACH-HOUSE.

To the Editor of THE BUILDERS' JOURNAL.

CROUCH END.

SIR,—About two years since plans were submitted to the local authorities and passed by them for the erection of some stables and coach-houses. Each building consisted of a two-stall stable and small coach-house at side, with 10ft. of yard in front of same fronting on to a roadway 20ft. wide. A friend of mine who bought two of these stables now wishes to convert one of the buildings and use it wholly as a coach-house, and has applied to the local authorities here to allow him to cover in the 10ft. of yard in front with an iron and glass roof, open at front, for the purpose of washing carriages. This the local authorities refused to allow him to do, as they say it does not comply with their bye-laws. The bye-laws in force here are the usual kind sanctioned by the Local Government Board.

M. S. A.

M. S. A. should quote the bye-law or bye-laws relied on, and state in what respect the local authority alleges that the proposed structure is in violation thereof. H. P. B.

### THE CENTRAL SCHOOL OF ARTS AND CRAFTS.

By ERNEST RADFORD.

DURING the past few days there has been held in the rooms of the Central School of Arts and Crafts, in Regent Street, the second exhibition of work by students of the school, and there is evidence of steady progress in almost every department. The outsider who learns from the secretary and the various instructors that this is beyond question the best school in the kingdom, will find the statement confirmed by the examples exhibited; but effects have their causes, and he may be tempted to ask in what respect this institution differs from others, and how the students in this Central School may be distinguished from students in general.

There are technical institutes all over the country almost, and part and parcel thereof are the schools of craft and design. The Municipality fosters them all, and so far the difference is slight, but nowhere in the provinces is there anything resembling the County Council of London, and so far as I know no school of Art which has as its central idea the tuition of those who are in some sort craftsmen already. They may be artists wanting knowledge of craft, or craftsmen who should be artists, for one whose reputation everyone envies comes only to learn the mystery of block-printing in colours, and is enrolled as a pupil in the classes conducted by Mr. Fletcher. It may happen under this beneficent rule that a pupil has even turned fifty, and the consequence is that some of the work we are shown is the production of men whose better half (not meaning the wife) has been more or less starved all the while, who have seen little but work, work, work in the task, and concerned as they are with something that is but a part of the whole have had but the slightest opportunity of seeing how the said social parts are related.

Agreed that there are no common pupils, it follows that this is no common school, and it may be inferred that the masters themselves, having so small a percentage of dullards to deal with, are quite unusually happy in what they have to be doing. Familiarity with the material breeds not contempt; say, rather, it liberates fancy, allowing him to play with it, for what meets the eye in the form of design is the creature of this association. We are told, and can easily believe, that amongst the students in the bookbinding classes there are few, if any, who cannot produce a design; and the long and the short of it is that, given the element of love in the work, the distinction between artist and craftsman will vanish. You may be one more or less, or the other, according to native inclination and tempera-

ment. Seed sown on exceeding good soil the general verdict would be. Having said so much of the pupil one might proceed to speak of the teachers, but being here amongst personal friends, the less said the better perhaps.

One generally asks on what Nature-form a conventional design is based, and one is not very far wrong in holding that, lacking Nature's suggestions, designing becomes a mere trick of space filling, which, because the trick is so common, can hardly be praised a great deal. He who flounders within the confines of a simple geometrical figure is in everyone's way, like dancers in similar plight, whilst he whose movements are easy and rythmical, is only one of some millions who have acquired the A. B. C. of the art. A genius for design—what is it? The question is hard to answer and I must be contented with saying that Nature knows her own children.

As "book openeth book," so thought suggests thought, and the consequence is a digression. The word Nature accounts for what was said last, but was originally intended to lead to some praise, not half-hearted, of the exquisite studies of plant forms by the masters Davis and Whall which may be seen in these rooms. Those shown are but a few, and one can only hazard a guess at the numbers of others that in their day have precluded the production of as many imprisoned designs.

Another and more important difference between this and other art schools is that what we see here is all evening work, it being understood that the pupils are engaged during the day, either as apprentices learning their trade or as workers deemed worthy of hire. There are one or two free classes of which particulars may be obtained, but, generally speaking, no provision whatever is made for the amateur student of drawing and painting. The word Amateur should be doubly, trebly, underlined in order to burden the memory, for amateurs are flooding the country, and their pathetically feeble work is a perpetual source of distress to the organisers of our exhibitions. We are likely to have art schools enough before long, but shall we have schools like this. If there are none like it at present there should be before very long, for no class needs them more, and it should not be hard to persuade the Lords and Commons of the vast manufacturing towns that the home art, of which so much is said, can be had, and that the right way to get it is to give even the slightest chance to the craftsmen of showing what they are capable of (even by holding night classes as here).

A word might be said in conclusion about the good things we have seen, but someone must suffer when others are praised; but while the institution itself is on trial, we should say for that what we can, speaking only in a general way of the exhibits. The only noticeable omission in the list of instructors is the name of the metallurgist, who may be supposed to be responsible for the few things in his line that are here. Of the pieces exhibited by Astin Whiting at least one or two might be attributed by the uncritical to Nelson Dawson, so this pupil has clearly a creditable past. A little electric "push" by the same hand is as amusing as it is creditable—the presence of the snail on the tablet counteracting the suggestion of speed. If one inclines to look longer at the enamels than at some of the other things, it is not only because they are pretty, but because the colour effects proper to metallic substance in flux are at once uncertain and inexhaustible, and there are always surprises in store.

In Mr. Chas. Spinner's class the names Webb and Cole were noted, for reasons which may be guessed. The designs for stained glass by A. E. Child are produced under Christopher Whall's direction, and Caterson Smith must be named as instructor; while Agnes Hoole's beautiful "Netch" design is admired.

The New Free Church at Turiff, which is to be erected at a cost of £2,500, and the foundation stone of which was laid last week, will be in the early style of Gothic. It has been designed by Messrs. D. and J. R. Macmillan, of Aberdeen.



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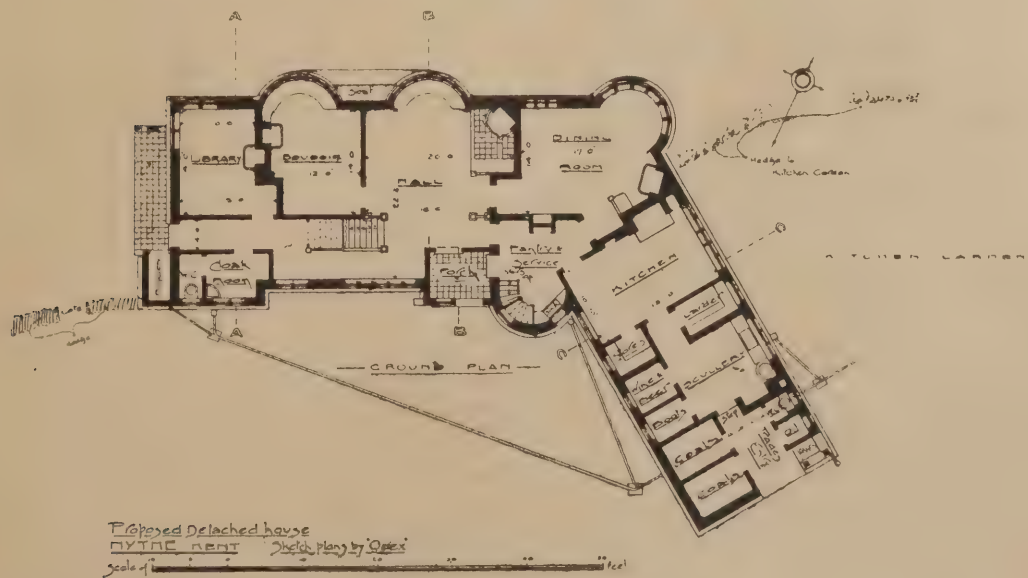
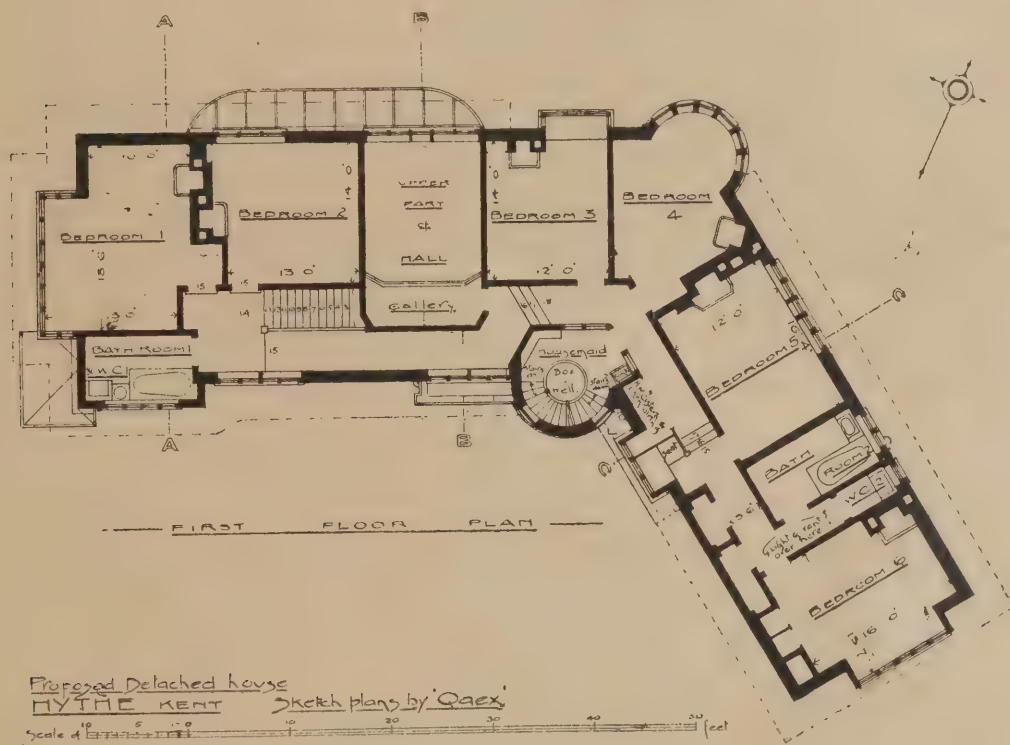
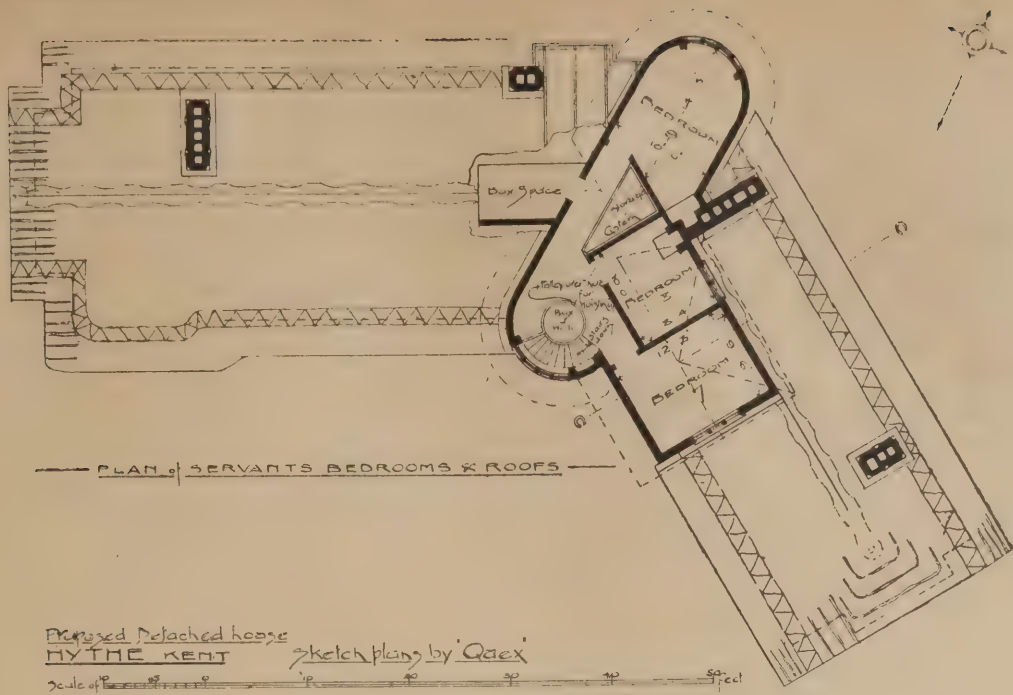


Proposed detached house  
HYTHE RENT sketch plans by Oaex  
Scale of 0 10 20 30 feet



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# 'BUILDERS' JOURNAL' COMPETITION.

DESIGN BY "QUEX."

WE reproduce this week one of the designs submitted in our recent competition and highly commended by the assessor. The author is Mr. John W. Rhodes. The design was submitted under the motto "Quex," and the following are the descriptive notes and specification accompanying it:—

The amount of accommodation is provided in accordance with the wishes of the proposed building owner, but the sum quoted, namely £2,000, which he is prepared to spend, is so small for the number of rooms referred to, that the interior appointments are necessarily of a simple character. Fourteen inch walls are built up to the plates, but these could be reduced to 9in. in the upper storey with 14in. sills at judicious intervals, to cheapen the work if necessary. The eaves of the roofs have been carried out to a considerable distance from the walls to avoid rain water damage, on the score of economy. The flats and shingle roofs, however, are drained into gullies, except southern portion of the latter which discharges into drainage. Conservation of water disposal can be arranged if the drippings from eaves are objected to. No information forthcoming as to water supply or the heating medium. It is presumed the former is laid on and that lamps are the suggested illuminating power.

The tangent plan of the kitchen offices is adopted for the following reasons:—Morning sun is admitted to dining-room and three bedrooms; larder and principal window to kitchen face a cool quarter of the compass; privacy of the pleasure gardens is assured; and picturesque treatment is imparted to the design by the grouping of the roofs at the junction of the main ridges.

The central situation of pantry and service will be appreciated. The hall is so arranged that curtains hung from beam under gallery will partially isolate hall, enhancing its comfort as a living space and improving its aesthetic value. The building is well lighted throughout, the plan is economical to work from a domestic standpoint and the interior decorative work is consistently treated with the spirit of the building as a whole.

CONCRETOR.—Shingle ballast being obtainable with ease at Hythe the foundations and battered plinth to the moulded string course will be constructed in cement concrete. The weathered character of the latter caused by added boarding which will form the sheeting.

The whole site will be covered with concrete and floated up where required to take tiles, &c.

BRICKLAYER.—Damp course of bitumen used hot.

Air bricks for all hollow floors.

Brickwork in well burnt grizzles and mortar, half brick walls in cement.

Brickwork where thatch or shingles impinge on flues 9in. thick.

Firebricks for fireplaces built in solid.

Scullery and all contiguous offices internal flush joints, then twice limewhitened, floors finished with trowelled cement, as also bicycle house. Hearths to servants' fire-places and range in cement.

Intermediate spaces of half-timber work in trowelled cement 3in. from timber face.

DRAINAGE.—Drains in socketed glazed earthenware, properly jointed and laid on concrete, and enveloped in same where passing beneath buildings. All junctions in inspection chambers.

Cesspool of the ordinary character with separator and pump for garden purposes in position, to be selected at least 150ft. from buildings.

All drains thoroughly ventilated and to stand water test.

VENTILATION.—Exhaust flues are provided for boudoir, library, and one and two bedrooms, also for dining-room and bedrooms four and five. Bedrooms three and six have openings through outer walls, all fitted with silent flap outlets.

Bedrooms and best w.c.'s fitted with zinc exhausts to gable ends, latter from highest point in ceiling, and bedrooms from walls as near this point as possible.

TILER, &c.—Approved red tiles to verandahs, hall, ingle porch, and outside same; encaustic tiles to principal hearths.

Moulded glazed earthenware curbs to some hearths.

Kent's crystal to larder, and splash screens to scullery, sink, baths, and lavatories.

MASON.—Corsham Down stone mullions and dressings to dining-room and No. 4 bedroom windows, copings, corbels, carved panel and drip-stone over front door, and moulded heads to stacks.

Moulded Portland stone curbs to library, hall, and dining-room.

Kentish rag to plinth-height entrance porch.

CARPENTER AND JOINER.—All work in deal and fir unless otherwise stated.

External half-timber work, rafters, brackets, &c., left sawn face and coated with Stockholm tar.

Cantilevers of oak.

Roofs over servants' bedrooms, top of secondary stairs, and Bicycle house covered in oak shingles on boards.



PERSPECTIVE SKETCH. BY JOHN W. RHODES ("QUEX").

Moulded external woodwork to be wrot and painted, including barge boards.

No half-timber construction will show less than 6in. on the face, except otherwise stated.

Half-timber work of partitions to 2 and 3 bedrooms, and enclosing gallery, and forming upper part of hall to show 5in. on face towards hall only, to be wrot, plaster to recess 1/4in.

Front door and contiguous framings of English oak as shown.

Kitchen offices and servants bedrooms ledged and braced doors.

Remaining 2, 3 and 8 panel doors to special design.

Oak thresholds to front and garden entrance doors.

Plain solid frames flush with rough cast and moulded casements.

Boudoir 4 1/2in. battens for styles and rails on plaster plugged for same to form panelling.

Architraves, skirtings, etc., purposely designed for respective rooms. Bedrooms treated in the simplest manner.

Teak newels and storey posts in hall moulded and carved with restraint.

Teak handrails and oak balusters.

Stairs to have planted ornamental nosings and housed strings.

Mantels in hall, dining-room and library in oak, boudoir in deal.

Teak seats to best, and deal seats to servants' w.c.'s.

Cupboards with roofs to stop collection of dust.

1 1/2in. yellow floors in narrow widths. Ground floors straight upstairs grooved and tongued.

IRONMONGER.—Hinges in servants' quarters wrot iron cross garnets, remainder wrot butts, Norfolk latches and fasteners throughout except outer doors.

Outer doors furnished with efficient locks and bolts and casements with cockspurs and stays of good quality.

Roofs covered with thatch except otherwise stated, sewn with copper wire and split hazel ties and binders. Eaves project 2ft. 9in. Thickness of straw not less than 10in. and at ridges and valleys 13in.

No pitch less than 45deg. except over window No. 2 and five bedrooms and bathroom No. 1.

Scraper, holder, and lamp of wrot iron. Letter plate, knocker, &c., of hammered copper.

FOUNDER.—Double oven ranges to kitchen and scullery, with high pressure boilers in each, both coupled up to service and having disconnecting cocks.

Note.—I have used this system with very satisfactory results. It enables the cooking to be done in scullery during hot weather, the scullery boiler doing the work of kitchen range when the fire of latter is out.

Galvanised iron hot water and lead-lined storage cistern and waste preventer cisterns to w.c.'s.

Cast iron rain-water gutters, heads, and down pipes where required.

Vane in wrot iron.

All bedrooms in cast iron mantle registers, Ashbee's and Benson's designs.

BELLHANGER.—Hanging bells used throughout.

PLUMBER.—Flats, valleys, etc., in 6lbs. lead.

Ridges to shingle roofs, and flashings round stacks to be in 16oz. copper.

5lb. lead secret gutters and dressings to shingle roofs.

Drawn lead soil and other pipes.

Cast iron Roman baths.

7lb. lead trays to these, and 5lb. lead ditto to storage cisterns with overflows.

One first floor w.c., valve pattern.

Remaining, wash-down pattern, with large water surface and one with slop top.

Housemaids' sink of 7lb. lead.

All sanitary work of the best with anti-siphonage pipes and ventilated from end to end.

PLASTERER.—Battered plinth rough, rendered in Portland cement and coke breeze. Upper weathering of plinth trowelled cement, coloured approved green before using.

Three coats internal work throughout, except scullery and contiguous offices.

Portland cement rough cast on all outer walls and stacks. Gravel to pass through a 1/2in. mesh (no pebble dashing).

Stacks to be packed out same thickness as rough cast to take flashings.

GLAZIER.—Windows and borrowed lights, 21oz. sheet lead light and roundels where approved.

Panels in front and garden entrance doors in obscured lead light to special design.

Bath rooms, w.c.'s, servants' stairs, and bedroom, 9in. obscured lead light.

Upper panels of small dining room window in stained glass to special design.

PAINTER AND DECORATOR.—External and internal wood and iron work, unless otherwise stated, painted four oils.

Front door and contiguous oak work fumigated dark and treated with linseed oil.

Hard woods internally hand polished.



Half timber work in hall to be stained green and coated boiled oil.

All new internal vertical plaster work to be coated with sterilising liquid, and papered with Essex or Jeffreys papers, except panel work and hall walls.

All walls of hall below coves to be covered in coarse granulated Japanese slightly tinted rice paper, and stencilled to special design.

## REGISTRATION OF ARCHITECTS.

### INTERVIEWS AND LETTERS.

THE discussion on the Registration of Architects is at present occupying the attention of the profession more than any other subject. It is not a new question, and many architects will remember the excited controversy it caused a few years ago. A large number of the letters which have appeared in this journal on the subject have been in favour of the proposed change, and in order to ascertain the opinions of some of the most prominent London architects, a representative of THE BUILDERS' JOURNAL AND ARCHITECTURAL RECORD has been interviewing them upon the subject. Before giving their opinions, it may be useful to state a few of the principal clauses of the Parliamentary Bill in which the proposals of many who approve of the principle of compulsory registration are given a definite shape. The

#### Architects' Registration Bill

passed its first reading on March 7th, 1893. It provides that every person who, at the date of the passing of the Act, is a Fellow or Associate of the Royal Institute of British Architects, shall, in respect of such membership, be entitled to be registered without payment of any registration fee, and so long as he is connected with the Institute shall be exempt from the payment of an annual renewal fee. Any person who was actually practising Architecture prior to January 1st, 1897, or who has served as apprentice, assistant, or practitioner in Architecture for seven years after having attained the age of fifteen years prior to the passing of the Act, shall be entitled to be registered. An applicant for admission after the passing of the Act must not be less than twenty-one years of age, and must have served as apprentice for not less than three years with a registered practitioner, and have passed a qualifying examination in accordance with the Act. The qualifying examination shall be held for the purpose of conferring the right of registration under this Act by the R.I.B.A. or any other body appointed by the Privy Council.

#### The Standard of Proficiency

required from candidates at these qualifying examinations is to be such as sufficiently to guarantee the possession of the knowledge and skill requisite for the efficient practice of Architecture, and it is to be the duty of the general council to secure the maintenance of this standard of proficiency; and for that purpose inspectors appointed by the general council are to attend, as the general council may direct, at all or any of the qualifying examinations. It is also provided that on and after the passing of the Act, it shall not be lawful for any city, borough or township, rural, urban, or sanitary authority, county council, local board of health, vestry, board of works, or other public body, to appoint any unregistered person to prepare, examine, approve or pass plans of buildings and their constructional or sanitary arrangement, or to examine or report upon buildings erected or to be erected. According to the Bill, no person will be entitled to call himself an architect (either alone or in combination with any other word or words, save only that of naval architect) unless he is registered. One of the first architects whom our representative visited was

#### Mr. T. Walter L. Emden,

the president of the Society of Architects. Mr. Emden was found busily occupied with his morning's correspondence. In reply to a

request for his opinions on the Registration of Architects, Mr. Emden said, "I have very little to add to what I said at the recent meeting at Sheffield. I joined the Society of Architects because they took the matter up strongly, and to assist in the movement. Any course that I could reasonably take to bring about registration, I would take. I am sure one-half the 'blackmailing' cases we have are caused by the fact that people who are anything but proper or competent persons to have in the profession can come in without anybody being able to prevent them. Once a man is under registration, and liable to have his diploma taken away or suspended, he would have to be extremely careful that what he did was of a proper nature. The Incorporated Law Society has a considerable hold over its members. If architects were registered, they would be in the same position. The great mass is entirely outside any society, and absolutely without any control of any description." Our representative asked Mr. Emden what he thought of the attitude of the Institute. Mr. Emden said: "They have, as a body, passed a number of resolutions in favour of Registration, but, immediately it comes to the question of taking action—going into Parliament—they are afraid that the time has not quite come, and 'have doubts,' as the Scotchman said." Our representative next made his way to the offices of

#### Mr. E. R. Robson, F.R.I.B.A.,

which are in the Palace Chambers, Westminster. In response to a request for his opinions on the object of the Bill, Mr. Robson replied: "It is a subject that will press itself to the front, as, ultimately, people will have to know who are the guardians of architects. Whether we have got to that strait yet, I am not sure. The difficulty will lie in knowing who is an architect in the highest sense. I am strongly of opinion that the outside public ought to know who are architects in the ordinary sense, and that the profession needs protection from the hoard of builders who are really practising, with a trained or half-trained assistant, in architects' places. We shall never get protection for the architects' profession as the law and medical professions are protected; but something ought to be done to give every architect a status as such in the eyes of the public. Registration will place all architects in a condition of equality as to status, but they will have to emerge from that by their ability." At the School Board Offices on the Victoria Embankment

#### Mr. T. J. Bailey, F.R.I.B.A.,

architect to the School Board for London, was found in his pleasantly-situated offices. When approached upon the subject of this article, Mr. Bailey said that he had not recently seen the Bill for the Registration of Architects. Our interviewer had the Bill with him, and after glancing through it Mr. Bailey said: "Anything to prevent men from setting up as architects and building abortions I am in favour of. The examination at the Institute is a proper step in the right direction, although I do not know whether it goes far enough. Everybody calling himself an architect ought to go through the regular routine. I do not think that any quack doctor who has probably effected some cures would be accepted as a member of the College of Physicians and Surgeons because he had been a success in that way. Not that I want to compare men who have done high artistic work, like some of the members of the Institute, with quack doctors. I do not think a young man who has passed all the examinations should be allowed to be registered as an architect unless he could show he had some knowledge of archaeology, and some original spirit of design, founded on a knowledge of old work, which should be judged by some of the highest artistic architects. At present I think it is anything but practical knowledge which enables a man to pass examinations and get into the Institute and kindred bodies."

#### Mr. E. Guy Dawber, A.R.I.B.A.,

is in favour of registration. "I used not to be so," said Mr. Dawber, "but as we get older

we get wiser, and see things in their proper light. I think registration would improve the status of the profession. It would, to a great extent, keep out a large number of incompetent men." Mr. Guy Dawber also thought that the clause providing that only registered architects should be employed by county councils and other public authorities was a good thing.

#### Mr. W. A. Pite's and Mr. R. A. Briggs' Opinions.

Mr. W. A. Pite, F.R.I.B.A., was in favour of the Bill so long as it only attempted to institute an examination of a man's practical knowledge. Mr. R. A. Briggs, F.R.I.B.A., said:—"I am afraid I do not hold very strong views on the subject of Registration, my idea being, with regard to architects, that 'by their fruit ye shall know them;' and if the public are such fools as not to be able to distinguish between good and bad, they must be the sufferers if they go to incapable architects. I am strongly in favour of the R.I.B.A. being the representative body, and that all architects should be members of that body. As there are good, bad, and indifferent doctors, so there are good, bad and indifferent architects, and always will be, as long as the world wags. If Registration will keep out incompetent men, I will support it."

#### Mr. Beresford Pite, F.R.I.B.A.,

was unfortunately unable to see our representative upon the subject, but wrote to us a letter explaining his views. He said:—"I have no very definite view on the subject of registration as yet. On the one hand the advantage of excluding improper persons, either through character or ignorance from practising the art at the risk and cost of the public is very self evident; but on the other hand, registration if exercised by any existing professional body of architects, would tend to make Architecture a close profession instead of a free art. We must in view of this make large sacrifices for the general liberty of the subject, and for the particular liberty of the artist. If the R.I.B.A. would alter their 'examination in Architecture' into an examination in building science and draughtmanship, leaving art, design, and history of Architecture out of it altogether, a great step would be taken towards obtaining an examination that would be a safe basis for qualification as a registered surveyor of building works. Examination in similar subjects by any recognised body (say under the Science and Art Department, save the mark) would also provide qualification for employment as surveyor. This should be as open and easy of attainment as public safety can allow. Having obtained thus much, every builder, contractor, inspector, surveyor, architect, and anybody charged with, or undertaking any building work whatever, should be examined and registered. But is this not Utopian? If not, let us have it and as soon as possible."

#### Mr. Arnold Mitchell and Mr. Arthur Cates.

Mr. Arnold Mitchell, F.R.I.B.A., says "a judicious scheme of registration might be for the benefit of architects, but I think it a very open question." Mr. Arthur Cates, F.R.I.B.A., is an old opponent of registration on the lines of the Bill. Our interviewer saw Mr. Cates at his residence in York Terrace, near Regent's Park. "In 1855," he said, "there was a strong feeling that the system of pupillage was defective. A pupil's friends paid large premiums for the privilege of the run of the office, in return for which the pupil was allowed either to waste his time or to devote himself to carrying out his master's work, work which in most instances should have been done by paid assistants. In fact, no real system of education existed. The appearance in the Parisian Journal 'Encyclopedie d'Architecture' of a series of articles by M. Adolphe Lance, 'du Diplome d'Architecte,' gave a new direction to this feeling, and resulted in the Architectural Association being induced to send a memorial to the Institute, asking them to establish an examination in order that the education of the young architect might be placed upon a proper basis, and his



qualifications to practise the profession be duly ascertained. In the course of years the Institute established the voluntary examination, and ultimately the present obligatory examination for associate membership was established. It was a long and desperate fight to get it done, and I only succeeded because I happened to be for some years a member of the Council, and, I think, fourteen or fifteen years chairman of the Board of Examiners. In France there has been a continued effort to obtain the official diploma, but, as yet, with no result. The École des Beaux Arts established a special examination, and granted a diploma which has been taken by, perhaps, some four hundred architects in France, but no compulsory diploma has been established, neither am I aware that with the exception of a few states in America, there is anything at all parallel to the registration scheme in force. That you want first of all is to make architecture a profession, as well as an art. The promoters make a great mistake in attempting to establish an analogy between the professions of law and medicine and of architecture. The first step towards placing the practice of architecture in

#### A Satisfactory Position

the public would be to establish it as a profession, to secure the satisfactory education of its members, and in so far secure to the public that the possessor of an authoritative diploma had a certain minimum of knowledge of the theory and practice of the profession. It has always appeared to me that the initial steps in this direction could be most effectually provided by the action of the R.I.B.A. if that body received from the general mass of the profession the support to which it is entitled. At present, under its new constitution, the Institute offers every facility for attaining these objects. It has ceased to be an almost exclusive London body it was in former years. It has established intimate relations with the leading provincial societies, and has removed the objection of a double subscription by relieving those provincial members of its body from the payment of their subscriptions to the local societies, the amounts of these subscriptions being discharged from the general funds of the Institute. The objection of double subscription being thus removed it would be expected that provincial architects would desire to join the Institute, and so materially strengthen its powers. To those who may not be qualified to desire to become Fellows, and who, being in practice, would not be able to devote sufficient time for the necessary preparation for the progressive examinations for Associateship, there is a special examination, which any architect of even moderate attainments should be able to pass with facility, and thus obtain the diploma of an Associate of the R.I.B.A. by examination.

#### Strength in Unity.

The advocates of the Registration Bill would do well to show the real earnestness of their desire by becoming members of the Institute, and ultimately by force of numbers influencing the action of that body in the direction they desire. It is to be most deeply regretted that at the present time the action is not adopted, as it would tend so greatly to the consolidation of the profession and to the individual interests of its members. As regards the policy of registration, while quite admitting the difficulties and hardships which in some cases exist in the provinces by the action of unqualified persons, I cannot accept the arguments which I have so generally heard put forward in its support in any way effective, neither do I believe that there is any such analogy between the professions of law and medicine and that of architecture as to justify the establishment of an exclusive monopoly of the designating architect, such as appears to be the aim of the Architects' Registration Bill. Further, I do not think its promoters would be able to justify before the searching inquiry of the Select Committee of the House of Commons the grounds upon which they seek to establish an exclusive monopoly of a name or title."

**Mr. P. G. Smith and Mr. E. W. Mountford.**

The interview with Mr. Percival Gordon Smith, F.R.I.B.A., architect to the Local Government Board, was a short one. Mr. Smith, probably owing to the fact that he is in an official position, would not at first give his opinion for publication, but our interviewer managed to extract from him the statement that he "did not think the Bill as it is drafted will effect its object." Mr. E. W. Mountford, F.R.I.B.A., expressed himself in the following terms:—"As a member of the Council of the R.I.B.A., I would support a Registration Bill if I were convinced that the majority of the members of the Institute were in favour of such a proceeding, but my own personal feeling is against it. There is no evidence that it would improve the general quality of modern architecture, and I do not believe that it would improve the 'social position' of architects, upon which it appears to me too much stress is laid by the supporters of the present Bill. The general tendency would be to make architecture more of a profession and less of an art. Architects, it appears to me, are themselves to blame for any want of consideration they may receive from the public, owing to the eagerness with which they seek for work upon any terms, and the means they employ to obtain their work."

#### Some Other Opinions.

Owing to absence from town and other reasons there were some gentlemen whom our representative was unable to see, but who sent their opinions by letter. Among them was Mr. Ernest George, F.R.I.B.A., who wrote, "I regard any system of registration as undesirable. Persistent study is necessary to the architect, and examinations on construction are useful to the student as tests of his acquired knowledge. I do not, however, know the examining body that is competent to give a diploma, or to arm its graduate with a certificate of ability. Artists (and among them architects) should be born, and not made by a course of drilling and examinations, much as they may be helped by the latter." Mr. R. S. Balfour, A.R.I.B.A., holds the view that "inasmuch as registration would certainly not exercise any fostering influence on the artistic side of the profession, which is more than sufficiently trammelled already, it would be most undesirable. If, however, some means could be found whereby a certain class of persons can be prevented from styling themselves 'architects,' and practising as such, greatly to the detriment of the profession and its status in the eyes of the public, it would fulfil the most cogent arguments of those who are in favour of actual registration. Unless it is possible to attain this object, I, personally, consider things are best left as they are." Mr. A. E. Street, F.R.I.B.A., has sentimental objections to the closing of the profession, but what they are he does not say. He does not see that registration is necessary for the protection of the public or of architects. Mr. John Belcher, F.R.I.B.A., and Mr. James Brooks, F.R.I.B.A., write that they are opposed to registration.

**A Stained-Glass Window**, the work of Messrs. Ballantine and Gardiner, was recently placed in the south transept of St. Cuthbert's Church, Edinburgh.

**Roman Antiquities at Kirkintilloch.**—At the monthly meeting of the Burgh Commission on Tuesday night, Mr. John Cameron referred to the ancient stones which had been unearthed at the public park while workmen were engaged cleaning the moat at the Peel. The attention of Mr. McGregor Chalmers, architect, Glasgow, had been called to them, and he made a careful examination of them. He discovered that some of them bore undoubted traces of Roman architecture, being distinctly marked by diagonal lines and other markings peculiar to Roman artisans. The stones had been used in the construction of the fort on the Antonine Wall passing through the park. The bulk of the stones, however, was of a mediæval period, and had no doubt belonged to Comyn's Castle, which was demolished by Robert the Bruce.

## Correspondence.

### REGISTRATION OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.

FROME.

SIR,—Will you please explain whether the provisions of the Architects' Registration Bill require a person who is at present unqualified as regards a diploma to show that he possesses the necessary experience and training before he will be allowed to practice as an architect? I think some arrangement should be made for men who have been in practice for a certain number of years. For instance, is a man who has practised for a number of years to be disqualified because he cannot afford the time or expense to pass the necessary examinations, or if he is so situated that the opportunities of study cannot well be obtained? I am in no way opposed to registration, but I like fair play.—Yours, &c.,

A COUNTRY PRACTITIONER.

[This question is answered in a summary of the chief provisions of the Bill given on the previous page. The proposed fee for Registration will be fixed by the general council, but pending the fixing of the fee by the council a fee of £5 is to be paid. The members of the R.I.B.A. will, however, be exempted from the payment of this fee. A copy of the Bill, price 3d., may be obtained from the Society of Architects, or the Queen's Printers.—ED. B. J.]

To the Editor of THE BUILDERS' JOURNAL.

ST. JAMES'S HALL, PICCADILLY, W.

SIR,—In further reply to H. D., while the desirability of apprenticeship, as a preliminary to entering the profession, may, under present conditions be open to question, there can be no doubt that registration by compulsory examination would render the training of the pupil a far simpler and yet more thorough matter than under the present system, which often of necessity means that the pupil must largely depend upon his own exertions to acquire knowledge, and the result is that unless he has an unusually strong sense of what is due to himself he will only by choice take up congenial and easy tasks, whereas with examinations looming ahead, which he knows he must pass, he would at once have an incentive and guide, and much valuable time now wasted would be directed into proper and profitable channels.—Yours &c.,

C. MCARTHUR BUTLER.

Secretary of the Society of Architects.

### RIGHTS OF LIGHT.

To the Editor of THE BUILDERS' JOURNAL.  
LONDON, S.W.

SIR,—Much has been said in praise of brevity, but there are occasions in which brevity may lead to misconception and error, and of such is one of the answers on page 326 of your issue of July 5. G. J. asks: "How long does it take for my neighbour to acquire a right of light to a window overlooking my property?" H. P. B., whose answers are usually very brief, answers this query in two words, "Twenty years." Now, it seems to me that such a question as this deserves a little more consideration, and the enquirer a little advice, for, while being nominally correct, the answer is practically incorrect, as a right to light may really be acquired in nineteen years and one day.

In G. J.'s case there is no uncertainty. It is a matter of statute law, and quite within the provisions of the Prescription Act of 1832, Sec. 3 of which states: "When the access and use of light . . . shall have been actually enjoyed . . . for the full period of twenty years without interruption, the right thereto shall be deemed absolute and indefeasible . . . unless it shall appear that the same was enjoyed by some consent or agreement expressly made . . . by deed or writing." And Sec. 4 says: "No act shall be deemed an interruption, unless the same shall have been, or shall be, submitted to . . . for one year



after the party interrupted shall have had or shall have notice thereof."

It follows, therefore, that if a certain access of light has been enjoyed for nineteen years and one day without a complete year's interruption during that period, the easement is acquired and the servient owner is helpless, for the simple reason that the remaining fraction of the twentieth year counts for nothing.

If G. J. has not yet submitted to the easement referred to for nineteen years; he would do well to ask the beneficial owner of the neighbouring property to sign a deed disclaiming any right to an easement of light over his (G. J.'s) property, and agreeing not to take action at law in case he (G. J.) proceeds at any time to build on his own land or to do any other lawful act to the prejudice of the light at present enjoyed, threatening in the alternative at once to erect a black screen of sufficient size to block out the light. G. J. could, of course, erect his screen at once, but as the window is high and a short distance from the boundary, the screen, to be effective, must be large and strong, and, therefore, expensive; and his outlay might as well be saved, as the deed could be made to meet all G. J.'s requirements, while the neighbour would, if he is wise, find it his best policy to sign without demur.—I am yours, &c., J. D.

## THE ARCHITECTURAL ASSOCIATION.

### VISIT TO GRIM'S DYKE.

SOME thirty members of the Architectural Association visited the residence of Mr. W. S. Gilbert, "Grim's Dyke," Harrow Weald, on Saturday afternoon, on one of the summer trips organised for June, July and August. Taking train from Euston, the party reached Pinner, and walking thence to the breezy upland of Harrow Weald Common, on whose borders the estate of Grim's Dyke is situated, arrived on the spot at 3.30.

There is a peculiar interest about this work of Mr. Norman Shaw's budding genius (it was built twenty-nine years ago!) which is partly due to its being the forerunner and exemplar of very many more recent essays in the domestic Elizabethan style, and partly owing to its present ownership. The personality of Mr. W. S. Gilbert, the founder and by far the most brilliant exponent of a school of dramatic humour which has long since been accorded the title "Gilbertian," would have a power to transcend a residence with no claims to distinction; but when, as here, you have a house of Norman Shaw's design which has set the fashion and has helped to turn the current of modern domestic architecture into more gracious channels, the interest it holds is great.

It was in 1870 that the then rising young architect, Norman Shaw, built this house for Mr. Goodall, the R.A. Artistry, unwedded to an overwhelming luxury, was the note of the place, as originally built, and "Graeme's Dyke," as the orthography of it was first used, has, in fact, the reputation of being the cheapest house for its size that the architect ever saw to completion. To the painter succeeded a Mr. Heriot, of whom Mr. Gilbert, tired of a town life, and even of his fine house in Harrington Gardens, Kensington, purchased the estate eleven years ago.

The house is a red-brick, many-gabled building in the late Tudor style, some of the gables being tile-hung, others—notably the great gable overhanging the entrance—half-timbered. It is hidden away from the road and the lodge down a prettily-wooded drive. Built originally for the use of an artist, the domestic arrangements and the actual plan of the house were dependent upon the studio and its lighting. The plan is, therefore, not being built upon one axis, somewhat puzzling to strangers, the more especially so since Mr. Gilbert has built a new wing, designed by the late Mr. Arthur Cawston, containing billiard-room and additional bedrooms above. The studio was built with the usual object of

securing the best painting light, and the remainder of the plan was determined by the position of the prehistoric moat in the grounds—the "Grim's Dyke," from which the house is named. This mysterious earthwork, a fragment of a long-continued line extending through Middlesex, Herts and Bedfordshire, is supposed to have formed the boundary or one of the ancient British kingdoms. It has been broken up by the plough in many places, but is perfect here, and, filled by land-springs, brims with water in which lilies and tall rushes grow luxuriantly. Here, shaded by overhanging trees, and green with moss, stands a battered old stone statue, removed from Soho Square, of King Charles the Second clad in Roman costume.

But to review the house itself. Much money has been spent upon it by its present owner. The floorings, originally of deal, have been replaced with oak parquetry, and many other improvements effected. The studio has become the drawing-room, and a very fine drawing-room, with its timber-framed wagon-roof, it makes. Great mullioned windows are features here as in all the principal rooms. A highly elaborate alabaster chimney-piece of almost constructional aspect, designed in a somewhat grotesque Renaissance convention, with satyr caryatides and an upper range of female caryatid figures, was the work of Mr. Ernest George, from ideas supplied by Mr. Gilbert himself. The sculptor was a French artist, whose figures were, as Mr. Gilbert says, gross and fleshy in the first instance, before he was obliged to take them down. The dining-room, panelled in oak, has an ingle-nook and is lighted by a mullioned window occupying the whole of one side.

The new wing is, on the whole, an inoffensive follow-on to Mr. Shaw's design; all save the dark and heavy billiard-room, whose coarse details ill assort with those in the other part of the house. It is, in fact, what no billiard-room should under any circumstances be, distinctly depressing.

The constructional details of the house have come well out of the test of nearly thirty years, and as age comes upon it, it will take on to the full that mellowed charm which belongs to mansions of the Elizabethan period. Already those oak timbers of the gables which have not been treated with oil or paint have taken on that delicate silvery hue which weathering alone can confer. C. G. H.

**New Public Baths at Govan.**—At the Dean of Guild Court last Wednesday sanction was given to the Commissioners for the erection of public swimming baths in Summertown Road and Church Street. The building, which will be of red sandstone, will have frontages of 175ft. to Summertown Road, 76ft. to Church Street, and 143½ft. to a proposed new street to be formed parallel to Church Street. The plans provide for two swimming ponds, each 75ft. long by 35ft. broad, eighteen hot-water slipper baths for gentlemen, and five for ladies. There will also be a public gallery above the large pond to accommodate 600 people, a gymnasium, committee rooms, boiler-house, and the other necessary apartments on the ground floor, including a dwelling-house for the bath attendant. The estimated cost of the building is £22,000.

**The Aberdeen Fish Market** is to be extended. According to plans submitted, the length of the extension along Market Street will be 424ft., and the width of the market 50ft. over the walls or pillars, with a space of 10ft. between the front pillars and the dock. The wall to Market Street above the loading bank will be of Ruabon pressed bricks, and the roof will be of wood and slated, while the centre portion of the roof will be utilised for empty boxes if thought desirable. The office, which will also be built of Ruabon brick, will contain refreshment rooms, superintendent's room, telegraph office, &c. The cost of the building, exclusive of the extension and strengthening of the wharf, is estimated at £6,500. On the plans being approved by the Harbour Commissioners the work will be proceeded with.

## Bricks and Mortar.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

### The Exploration of Palestine.

THE annual general meeting of the Palestine Exploration Fund was held last Tuesday week at the Royal Institution. Lord Amherst occupied the chair. An abstract of the report for 1898 was read. The Executive Committee stated that the excavations determined on last year at Tell-es-Sâfi, supposed to be the ancient Gath, had been begun, and were now being carried on by Dr. Bliss and Mr. Macalister. Operations were commenced at Tell Zakariya. Dr. Bliss had sent a general account of the work of the year. Tell Zakariya is a hill, and on it the explorers had found a large fortress, of irregular shape, measuring 200ft. on the west side and about 120ft. on the north. The walls are about 6ft. thick, and built without mortar. About half the area had been examined down to the rock, and the debris had been proved to consist of two strata—one a pre-Israelite stratum and the other a Jewish stratum, slightly disturbed in Roman times. The fortress may possibly be the work of King Rehoboam, who built so many cities for defence. In the lowest stratum, near the rock, was found a buried jar, broken, but *in situ*, containing, among other Egyptian amulets, scarabs of Thothmes III. and his great-grandson Amenhotep III. These Pharaohs reigned about 300 years before the Exodus. Pre-Israelite and Jewish pottery was found in large quantities, and objects in stone, bronze, iron and clay were numerous. The explorers subsequently broke ground at Tell-es-Sâfi, and were still working there at the time Dr. Bliss sent in his report. He concludes his report by stating that their ability to turn over as much debris as possible in the future depended largely on the subscribers to the Fund. The treasurer's statement showed that the income of the Fund in 1898 was £2,600 and at the end of the year the balance at the bankers was £674. Mr. W. Morrison, M.P., moved the adoption of the report, Dr. Löwy seconded, and the motion was adopted. Major-General Sir Charles Wilson then delivered an address on his recent travels in Moab and Edom, which was illustrated by lantern slides.

### The Italian Exhibition Destroyed by Fire.

THE destruction by fire of the International Electrical Exhibition at Como, including the exposition of silk and sacred art, is to be greatly deplored. The fire started in the electrotechnic department and spread with great rapidity; in fact a witness, who was present at the Charity Bazaar fire in Paris, says that in Como the fire spread more speedily, literally eating up everything within its reach. The building was semi-circular in form, with a centre, six wings and a gallery, where the Volta relics were kept. The latter only opened to the inside of the building. The picture of Volta showing his battery to Napoleon, the sword of honour presented to him by the latter, and various personal relics were saved at great risk; but the only authentic portrait of the great



electrician, his will, his precious manuscripts and books, his original battery, and other invaluable objects were destroyed. The other exhibits shared a like fate; but by the efforts of the soldiers and firemen the Sacred Art Department and the exhibit of the Docks and Lake Navigation Company escaped. The damage cannot yet be estimated as many of the exhibitors were not insured, and numbers of the articles destroyed were priceless, as they cannot be replaced. The committee of the exhibition have resolved to rebuild the building, and have collected a handsome sum for the purpose.

#### Mr. Sigismund Goetze's Paintings.

DR. TRISTRAM, Chancellor of the Diocese of London, gave his decision last week on the faculty reported in our issue for April 26, asked for by the Vicar and two Churchwardens of the Parish Church of St. Botolph Without, Aldersgate, to make alterations to the interior of the church. The proposed alterations consisted in the decoration of the east wall of the chancel above the holy table by three oil paintings presented by the artist, Mr. Sigismund Goetze, the subjects being "The Dead Christ," "Watch" and "Pray." The addition of these paintings would require the removal of the panels on which the Ten Commandments, the Lord's Prayer, and the Apostles' Creed were inscribed, and new panels having these painted on were to be placed on either side of the apse facing the congregation. The painting of "The Dead Christ" was exhibited at the Royal Academy last year, and represented our Lord lying prostrate in an almost nude state in the tomb of Joseph of Arimathea. The other two had been painted since; the one named "Watch" represented a Roman soldier clad in armour such as was introduced in the Middle Ages, and the other, called "Pray," represented a female kneeling in the attitude of prayer. These it was proposed to place one on each side of the central painting. Objection was taken on the ground (1) that there was an absence of all evidence that the proposed alterations were necessary, or that they would be an improvement to the church; (2) that their introduction involved the removal from the east wall of the chancel of the Ten Commandments inserted on the panels as well as the Apostles' Creed and the Lord's Prayer; (3) that the central painting did not represent with historical accuracy the scene of our Saviour in the tomb as handed down in Holy Writ, and that the soldier in the picture called "Watch" was not attired as a Roman soldier would be guarding our Saviour's tomb, but in plate armour such as was first introduced in the Middle Ages; (4) that the introduction of the oil paintings would not harmonise with the existing stained glass windows and painted panels that had been there since 1788; and (5) that the vicar had done a great deal of good work in the parish since he had come into it, had increased the congregation, and had worked harmoniously with the parishioners, but that the introduction of the pictures into the church would be offensive to many parishioners who were staunch supporters of the church and would introduce a bone of contention into the parish where there had been none before. The Chancellor agreed with Mr. Cristian, the architect to the City of London Parochial Charity Commissioners, who had put the church into repair, that the church was so tastefully decorated as not to require alteration. He did not consider it part of his duty to determine in the present case whether the introduction of paintings in the apse would or would not be an improvement. What the Court had to determine was whether the objections taken to these paintings as church decorations, and in particular to the central one, might not be conscientiously entertained by members of any congregation in our church without disparagement to those who might entertain a view favourable to them; and as from the evidence the Court was satisfied that no less than 121 resident parishioners and Churchmen, eight of them being past churchwardens, conscientiously objected to their introduction, though it be on a matter of taste, and that

their introduction would offend their religious feelings; it felt, therefore, that in the exercise of a judicial discretion its duty was to decline to sanction their introduction by faculty. The Court, in coming to that decision, desired to add that it was far from its intention to depreciate Mr. Goetze's generosity in offering to present the paintings for the decoration of the church. The petitioners would pay their own costs. It was intimated that the petitioners desired to appeal against that part of the Chancellor's judgment which refused the faculty.

**Fire Tests with Floors.** WE have received Publication No. 21 of the British Fire Prevention Committee which deals with a test made on May 25th on a floor of steel joists with concrete filling, the breeze and cement composing the concrete being in the proportion prescribed by the London County Council in their addenda to schedule No. 2 of the Building Act of March 28th last. This particular floor, however, was given extra fire resistance: first by the corrugated iron centering, which was used in the construction and not removed; and, secondly, by a suspended lath and plaster ceiling. The floor was constructed according to the specification of Mr. Ellis Marsland, the District Surveyor of Camberwell. The area of the floor under investigation was 100ft. superficial in the clear (10ft. by 10ft.), and it was loaded with 168lb. per square foot. The materials of which it was constructed were of the ordinary kind, and the time allowed for the construction and drying of the floor was one month. The floor was subjected to a fierce fire of an hour and a quarter's duration, gradually increasing to a temperature of 2000 deg. Fahrenheit, followed suddenly by the application for three minutes of a stream of water. The effect of the test was that the suspended ceiling below the floor fell during the test, and the concrete was slightly disintegrated on the underside. The floor was deflected during the test  $2\frac{1}{2}$  in. in the centre, but subsequently returned to within 1 in. of level. The fire did not pass through the floor. The pamphlet containing full particulars of the test can be obtained from the offices of the Committee, 1, Waterloo Place, Pall Mall, S.W., price one shilling.

#### Devon and Exeter Architectural Society.

THIS Society have just issued their "Journal of Proceedings" for 1898-9. The list of membership has increased from sixty-eight in 1898 to seventy-one. Since the annual meeting at Exeter on May 7th, 1898, six general meetings and seven meetings of the Council have been held. The Society have considered the Architects' Registration Bill, and find that the R.I.B.A., the Leeds and Yorkshire, and the Birmingham societies are against the Bill, and that the Society of Architects, the Dundee Institute, the Northern Architectural, and the Sheffield societies are in favour of it; while the remaining societies allied to the R.I.B.A. are either neutral or have not given a definite answer to enquiries. We quote the following from the report of the Devon and Exeter Society:—"But in view of the manner in which much of the building work is designed in this district, your Council feel strongly that some steps should be taken to safeguard the interests of not only the profession, but the public at large." The Council of the Society again offer a prize of one guinea (in books) for the best sheet of measured drawings submitted by an Articled Pupil Associate of their Society.

**Black Smoke Nuisance.** THIS important question cropped up in the House of Commons last Thursday, by Mr. Bartley asking the Secretary of State for the Home Department whether his attention had been called to the increasing quantity of smoke and fumes emitted from the pottery and drain-pipe works on the river nearly opposite the House, and whether he would take steps to require the owners of these works to consume their own smoke and not contaminate the neighbourhood with these fumes. Mr. Chaplain, in reply, said the Local Government Board had no control over the

owners of the works referred to, but he had communicated with the clerk to the Lambeth Vestry, in which parish the works are separated, and the Vestry were making daily observations with respect to the emission of smoke from manufacturing firms in the parish, and that three inspectors had been specially told off to report on the pottery works referred to. It is understood that large sums have been expended by the two pottery firms in altering their furnaces and appliances so as to minimise the smoke and fumes arising in the course of their manufacturing processes, and they have expressed their willingness to make any further alterations of a practical nature if any such can be suggested. This awakening of interest in clearing London to some extent of smoke is, we hope, a beginning of a better state of affairs. There is no reason why every manufacturing firm, hotel keeper, &c., in London should not almost completely consume their own smoke, and that, too, with economy to themselves, for there are several excellent devices on the market. We can hardly hope for much moderation yet awhile in domestic houses, but if the first part can be obtained London will become more pleasing to the lover of beauty and far more healthy.

#### Irish Antiquities.

THE Royal Society of Antiquaries of Ireland went for land excursions on the 28th, 29th, and 30th ult., to enable members from England, Wales, and the South to see some of the beauties of the northern parts of Ireland and the Boyne Valley. On the 28th ult. there was a drive to the Giant's Ring which was continued back to Belfast, thence to Whiteabbey, and round by Carnmoney and Antrim Road to town again. On the occasion of this excursion a presentation of silver plate was made to Mr. R. Cochrane, the hon. sec. of the Society, and Mr. S. F. Milligan, hon. sec. for Ulster. On the 29th ult. the members visited Portrush, Dunluce and the Causeway. On the 30th ult. a party of eighty members visited Drogheda, where they first examined the obelisk which marks the spot where Duke Schomberg fell. They next crossed the River Mattock, a tributary of the Boyne, separating County Louth from Meath, objects of interest being pointed out on the way. Having crossed the river the party entered the subterranean chambers of the Tumulus of Dowth, the ancient burial mound of Irish pagan kings. Further on they reached the great pyramid or Tumulus of New Grange; a mass of stones 80ft. in height and 180,000 tons in weight on a base of two acres. The interior is tunnelled by a passage 80ft. in length, and has a central chamber 20ft. in diameter and 20ft. in height, with three small chambers off it, one ahead and the others to the right and the left. The ground plan forms a cross, of which the entrance passage is the shaft. The stones in the interior are carved with spirals, circles and various other carvings of the most remote times. The age of the tumulus must be about 3,000 years. On the outside there are eleven huge monoliths still in position, and many others which have fallen. These formerly formed a complete circle around the mound. They next drove to Monasterboice, an ancient Irish monastery founded in the middle of the sixth century. The ruins, situated in a graveyard, consist of three great sculptured crosses, a round tower, 110ft. high, and some remains of the ancient church. The round tower is one of the highest, and two of the crosses are the finest in the world. They next drove on to the ruins of Mellifont Abbey, a Cistercian foundation of the year 1142. The party then returned to Drogheda, where they visited various places of interest in the old town, including St. Lawrence's Gate and St. Peter's Church and cemetery, in which are some remarkable tombs. The new Roman Catholic Chapel, a very fine piece of Gothic architecture, which has just been completed, was also visited and its fine altar noticed. The members returned by rail to Belfast, objects of interest being pointed out on the journey, thus concluding the finest and most successful antiquarian outing that has been held in Ireland. The outing commenced



on the 20th ult. and concluded on the 30th, including, besides the land excursions, a sea cruise.

### Archaeological Discoveries at Longforgan Church.

THE whole of the interior of this church is to be reconstructed and altered, for which Mr. Alex. Hutcheson, of Dundee, is the architect. An apse with a three-light window has been erected at the east wall, and the flooring has been entirely removed. It was while the flooring was being removed that the workmen unearthed a beautiful tombstone, lying face upwards, near the supposed site of the altar in the old pre-Reformation church. The slab is an oblong block of Kingoodie stone. It bears full-length effigies of a knight in armour and a lady; there is also the figure of a small youth in armour, probably the knight's son or esquire. The knight and his lady are both portrayed with their hands devoutly folded, and faces turned towards the figure of St. Andrew on the cross, which is in the centre of the upper part of the slab. The plate armour on both knight and esquire, the lady's garments and the floriated back ground have been



WELLS  
COTTAGE HOSPITAL



COTTAGE HOSPITAL, WELLS, SOMERSET. W. J. WILLCOX, ARCHITECT.

so carefully executed by the sculptor that the minutest details are plainly delineated. Fragments of the ancient baptismal font have also been found in the tower staircase. Apparently it had been an octagonal basin mounted on a shaft, with eight panels around the sides giving sculptured representations of incidents in the life of Christ. The fragments preserved show Christ bearing the Cross, the Scourging, the Crucifixion, the Entombment, the Return from Hades and the Resurrection. There are traces of colour still left which show that at one time it was painted artistically. A fragment of what is supposed to be the capstone of one of the gables of the old church has a rose carved in high relief, surmounted by a gable and fleur-de-lys.

**A New Church at Great Lever, Bolton,** is to be erected to provide accommodation for about 700 persons. The foundation stone was laid last Wednesday by the Bishop of Manchester. There will also be a new school and parsonage house. The style of the church is decorated late Gothic. The school is placed behind the church, and is a two-storey building on the central hall system, with class rooms at each side. It will accommodate about 450, but is arranged for future extension to about 650. The parsonage will be in the vicinity. The contract for the buildings has been let to Mr. William Townson, of Bolton, and the works are being carried out from the designs and under the superintendence of Mr. R. Knill Freeman, of Bolton and Manchester.

## Professional Practice.

**Bangor.**—Two additional Homes of Rest were opened here recently. They have been erected at a cost of about £1,900. The general design of the exterior of the Home for Males is of red brick for the lower part and rough-cast decoration on the upper part of the building, with slate roofs, large windows and bays. Entering on the main vestibule there is a large octagonal hall leading to the main departments of the building, and with an open grate at the opposite end of the vestibule. On the right of the entrance are cloak-rooms, superintendent's office, and a large dining-room. From the dining-room there are French casements and a covered verandah. The servery leads from the dining-room to the kitchen and domestic offices of the building. On the opposite wing of the central hall there is a corresponding-room for the general sitting-room, with a large bay commanding a very extensive view. The upper floors are fitted up with a large number of bedrooms, some single and others double. Ample bathrooms and lavatory accommodation have been provided on each floor. The design for

**Edinburgh.**—In the Second Division of the Court of Session, last Wednesday, before the Lord Justice Clerk, Lords Young, Trayner and Moncrief, judgment was given in a re-claiming note for the defendant in an action by Mary Hope Jamieson, residing at Rosefield Cottage, Cargill Terrace, Wardie, Edinburgh, against Frank Worthington Simon, architect of 31, Hanover Street, Edinburgh, in which the plaintiff sued for £80 as damages for breach of contract, in respect, as alleged, that the defendant, who was architect of a house which the plaintiff erected in 1895 did not exercise sufficient supervision over the tradesmen, with the result that improper materials were used, the work of bottoming the concrete floor of the scullery being scamped. The bottoming consisted partly of chips of stone and partly of shavings, pieces of wood plaster, sacking, and general sweepings. The consequence was dry rot set in and cost £30 to eradicate. Lord Kyllachy, in the Outer House, found the defendant was liable, and he gave decree for £40 and expenses. Their lordships of the Second Division unanimously affirmed the decision, with additional expenses. Lord Young said the case was of importance to architects and their employers. It was important that they should know what were their respective obligations and rights. These did not seem to be agreed upon at present, for there was a conflict of evidence as to what they were. By his contract with the plaintiff the defendant undertook to prepare the plans and specifications, and supervise the work from commencement to completion, at a remuneration of 5 per cent. upon the cost of the work. One or other of the tradesmen scamped the work of bottoming, and, when the dry rot appeared, the defendant repudiated responsibility for the work, on the ground that his duty was fulfilled if he occasionally went to the place where the work was going on and took a glance round, and if he saw nothing wrong then there was no responsibility on him, and that he was quite acting according to his duty to his employer in not seeing to the bottoming of that scullery floor. His Lordship thought the legitimate interests of the employer required a good deal more attention than the defendant and some of the witnesses of his own profession seemed to think. The supervision must be such as would cover the work complained of here. It was not expected that architects should personally supervise the work; it was work which their servants could do. His Lordship was not without some sympathy for the architect in this case, arising out of what appeared to be the opinion of at least some of his brothers that there was no obligation to do more than he did; but the Court must construe the contract in the way he had indicated.

**Leith.**—The public baths which have been erected in Great Junction Street by the Corporation of Leith, in completion of the scheme inaugurated in celebration of Her Majesty's Jubilee, are now ready for use and the formal opening recently took place. The total cost of the building, including the registrar's office, which occupies a portion of the site, is about £12,000. The external elevation is of red sandstone, and is of a classic character. The swimming bath is 75ft. by 35ft., with a depth of 7ft. at the deep end and 3ft. at the shallow end, and is flanked on each side with dressing-boxes, of which there are about sixty, with a spectators' gallery overhead. The design, although simple, is effective and attractive. Trapeze, swing rings, shoot and diving platform have been erected. Electric light is used throughout. Wave and spray arrangements have also been introduced, the former being utilised as a scummer, and the latter for ventilation, produced by the spray of cold water cooling the atmosphere. The usual accessories have been introduced, namely, douche and foot baths, lavatory, office and waiting room. Seven plunge baths have also been provided, and there is, besides, a billiard-room with accommodation for two tables. The baths have access from the main entrance and from Corunna Place off Bonnington Road. It is anticipated that in the winter months when the weather

the Home of Rest for Mothers and Children is based on a similar plan, but to a somewhat larger scale, the main sitting-room and dining-room being each about 35ft. long by 17ft. wide, with large bays. In addition, a special feature of this building is a large upper verandah around the bedrooms, specially adapted for mothers with children in arms. The architect was Mr. W. J. Roome, and the builder Mr. James Kidd.

**Bristol.**—The new offices of the Prudential Assurance Company, Limited, will occupy the site at the corner of Clare Street and St. Stephen's Avenue on which the old buildings stood. As is customary with the offices of the Company, the lower part of the elevations will be of red Aberdeen granite, and the upper part of red terra-cotta, with red bricks sparingly introduced. All the fireplaces in the building will be gathered into one central stack. The three elevations will be treated with equal care. There will be two angle turrets to the St. Stephen's Avenue front, with grouped windows surmounted by a gable between the turrets, and similar gables will relieve the other elevations. The one entrance will be in Clare Street, near the upper end of the building. The Company's offices will occupy the ground floor, and the first and second floors will contain admirably lighted and appointed offices for tenants. The new building has been designed by Messrs. Alfred Waterhouse and Son; Messrs. Cowlin and Son are the builders, and Mr. W. Brock is clerk of works.



is too severe for bathing, the water may be run off and the area of the bath used as a public hall. A novel system of heating has been introduced: the baths adjoin the electric light station, and the exhaust steam from the engines thereof, which is ordinarily discharged into the atmosphere, has been utilised for the heating of the swimming pond for the domestic hot water supply, and by means of pipes for heating the whole premises, thus doing away with the necessity for a boiler and other expensive arrangements, as also for a continuous attendance of stokers and firemen. The whole place is constructed so that it may be in compliance with the Act of Parliament applying to public halls. As a swimming bath it holds from 500 to 600, and as a public hall it will hold from 1,000 to 1,500 persons. Messrs. Kinnear, Moodie and Co. were contractors for the mason work, Messrs. J. and D. Sutherland for the carpenter and joiner work, Mr. T. Macpherson for the plumber work, and Messrs. Field and Allan did the tiling work. The whole of the work has been executed under the superintendence, and from the designs, of Mr. George Simpson, town architect.

**Llandaff.**—The two central lights of the western windows of Llandaff Cathedral have been filled with stained glass, and were recently unveiled and dedicated. The design of the large central light represents as its main subject Our Lord sitting in glory and robed as priest and king, ruling over the world, with His right hand spread out in the attitude of invitation, whilst His left hand holds the regal orb, surmounted by the Cross, as the symbol of His Divine rule. He is seated on the great white throne, whilst behind Him is the rainbow, the symbol of reconciliation to mankind. Above are two angels in the attitude of adoration, whilst at the top of all is shown the Holy Spirit as a dove. Below are two other angels of the Judgment, one holding the sword and the other the trumpet, ready to sound as described in the Book of Revelation. In the lowest panel is represented Dean Conybeare, to whom the light is a memorial, in a kneeling posture at a desk, upon which is a Book opened before him at Psalms 7, verse 1, whilst an inscription to his memory completes the picture. The upper light represents the angel of the everlasting Gospel as described in Rev. xiv., 6, proclaiming from mid heaven the Divine message to the whole world. Messrs. Powell and J. P. Seddon, of London, are the respective artists of the lower and upper lights.

**Wells, Somerset.**—The Cottage Hospital at Wells, Somerset, of which we give an illustration on opposite page, was erected in 1895 at a cost of about £1,800 from the designs of Mr. W. J. Willcox, architect, of Bath, who was successful in obtaining the first award in a competition limited to six architects invited to submit designs. The elevation is in a free Renaissance style of a simple character, built in local stone with freestone dressings, and the accompanying plans sufficiently show the arrangement of the interior, which is designed for twelve patients, to meet the needs of a small town in an agricultural district with less than a few large factories in the neighbourhood. Mr. Charles Wibley, of Bath, was the builder.

## New Company.

An issue of importance has been made this week. The Cattewater (Plymouth) is to be developed by a company under the name of the Plymouth Wharves, Limited. The Admiralty, Board of Trade, and the Cattewater Commissioners have approved the scheme, whilst a special Act of Parliament has been obtained for working the wharves. From the particulars placed before us we anticipate a widespread interest in the flotation, as it should inaugurate a development of great value to Plymouth and the west of England generally. A very influential Board of directors has been formed, and investors should carefully peruse the prospectus, which will be found on one of our advertisement pages.

## NEW TOWN HALL AT CAPE TOWN.

A FINE new Town Hall in the Italian Renaissance style is to be erected at Cape Town to take the place of the present rambling townhouse which has been the home of the Corporation of this ever growing South African city for many years. The old building has become too small for the increasing official staff, and the Town Council has resolved to build a hall which will be large enough for all requirements. The site that has been fixed upon is a spacious quadrangle inclosed by Darling, Zecke, Longmarket, and Parade streets, now occupied by the market buildings. These will be demolished, and their place occupied by the new structure, designed by Messrs. Reid and Green, architects, of Adderley Street. The front elevation of the new building will be towards the Grand Parade, and from the centre of the three floor frontage a handsome tower, with clock and belfry, will rise to a height of 200ft. The main building will measure 280ft. by 175ft.; its floors on the Darling Street side will be 80ft. high to the cornice, and the remainder of the frontages will be 60ft. high.

In connection with that part of the building set apart for public purposes will be a vast hall, 130ft. by 62ft., and 55ft. high. This is to be entered by means of a portico outside the entrance hall, which will have several niches recessed in the solid masonry walls for statuary. The reception hall, 46ft. by 40ft., with corridors 13ft. broad at each side, will come next; then an inner hall; and, finally, immediate entrance to a large city hall, which has been especially designed with a view to holding musical festivals, citizens' meetings, &c. It will possess a public gallery and an orchestra gallery, each seating 300 persons. The orchestra gallery is to be semi-circular in form, and will be situated at the south end of the hall. The total seating accommodation in the hall will be for 2,000 persons. The dimensions of this block for public functions will be 225ft. in length and 86ft. in breadth. Cloak-room and other accommodation will be provided. Access will be gained to the municipal offices from the Darling Street entrance by means of the central-winged granite staircase, with massive balustrading and carved stone portico, whose red marble columns will support the council chambers balcony overhead. Entrance halls are also to be provided at pavement level.

The ground floor suite of offices will consist of the muniment room, the treasurer's department, the general office, accountants' and private offices, offices for the sanitary superintendent and medical officer of health, and the waterworks and drainage departments, with strong-rooms and separate suites of lavatories for each set of offices. The main central staircase to the first floor will begin with a width of 28ft. in the entrance hall facing Darling Street; the wall-faces are panelled and recessed, and richly ornamented with semi-circular headed moulded architraves, imposts, and pedestals, grouped together. It is proposed to construct the "treads" of this staircase in marble, with solid marble strings, turned balustrades, and moulded coping, designed in effective colours and polished surfaces.

The council chamber, on the second floor, will be 56ft. long, 31ft. wide, and 32ft. high, with a coved and decorated ceiling and cornice. Round the walls, to a height of 8ft., panelled wainscoting is intended to be fixed, and overhead, at an elevation of 11ft., will be the Press gallery. Accommodation for the public is to be provided, set back from the interior of the chamber proper. Close by will be the banquetting hall, 63ft. by 39ft., the councillors' library, 42ft. by 39ft., rooms for committees and the reception of deputations, a robing-room, and lavatories. Lifts are to be provided from the kitchen, and on occasion the banquetting hall will be approached by a staircase from the "public" section. On the top storey the city engineer's department will have a studio for working the ferro-gallic process and printing from plans and drawings.

## WELL-DESIGNED FURNITURE.

IT is rarely indeed that we receive a trade catalogue that is so pleasant to handle, to look upon and to read as one that has lately come to hand from Messrs. Heal and Son, of Tottenham Court Road, W. Perhaps the term "trade catalogue" is hardly applicable to this attractive little brochure on "Simple Bedroom Furniture," which, notwithstanding its recommendation of a particular manufacturer's wares, has a genuine literary and artistic interest of its own. The illustrations are woodcuts from original designs by Mr. Ambrose Heal, and represent a style of furniture very far removed from the tawdry vulgarity one has been accustomed—not quite fairly perhaps—to associate with Tottenham Court Road. Simplicity, good proportion, good workmanship and the suitable use of materials, are its prevailing characteristics. Included in the book is an essay by the late Mr. Gleeson White on "Simplicity of Design in Furniture for Bedrooms," in the course of which it is pointed out that Messrs. Heal's furniture will accord with almost any style of interior decoration that a first-rate architect would approve of. Mr. White also notes the curious fact that good design always begets good workmanship. "If the design is all right, both constructionally as well as æsthetically, the workmanship is nearly sure to be good also. For it offers a workman real interest in his craft to find that joinery and good framing are relied upon for such beauty as the structure possesses. If it is to be smothered with cheap ornament he may be tempted to shirk his part; but, given the opportunity, many a skilled mechanic will provide work to-day with as good a finish as that which in the Chippendale, and other furniture of the Adams period, still delights us." There is much sound wisdom in this essay, which is well worth reading and preserving. Mr. White had no sympathy with attempts to escape from conventionality in design by resorting to the eccentric and the grotesque. "Where rigid simplicity is obeyed," he says, "it can never become an eyesore. As the pattern we welcome on walls, floors, and ceilings, provides enough, and more than enough, ornament for any room, it is best that the furniture therein, especially when it is purely utilitarian (as bedroom fittings must needs be) should be not only without decoration that would jar upon the rest, but in its simply ordered fashion provide actual beauty. For beauty does not reside in ornament only; nor even, as some people in their effort to escape 'prettiness' have fancied, need it take refuge in unmitigated ugliness. The terrible efforts to escape the prevailing fashion, be it what it may, by uncouth and grim affectations, is but an inverted recognition of the 'mode' being all-important. The really valuable work of any period is that which does not assert itself, but takes its place in the scheme of the abode." It is possible that furniture of the kind which Mr. Gleeson White approved and which Messrs. Heal and Son manufacture, may not be the most widely popular; nevertheless, there is, we hope, a sufficiently large section of the public who do appreciate good taste in furniture design to make it worth while for Messrs. Heal and Son to continue on the artistic lines on which they are now working.

**Paisley Church Council's New Buildings** have been erected at a cost of about £6,500, from plans by Mr. T. G. Abercrombie, of Paisley. They are in free Renaissance style, and the hewn work is of red freestone from Lochaberbriggs quarry. The back elevation is of grey freestone from Auchenclea.

**New Hospital at Liscard.**—The foundation stone has been laid of the new Central Hospital by Mrs. McInnes, of Wallasey. The new building will cost £15,000, and will consist of three pavilions capable of accommodating 120 beds. There will be a fully equipped operating theatre, and the administrative block will house the whole staff. Messrs. Maxwell and Tuke, of Manchester, are the architects.



## Keystones.

**A New Memorial Window** of painted glass has been erected in St. James' Church, Bury. Messrs. Clayton and Bell were the artists.

**The Foundations of the New Union Baptist Sunday School**, Windon-street, Blackpool, were laid last Wednesday. The building is to cost over £1,700.

**A Gable Collapsed** recently at Templeford, Ect, while a number of masons were engaged in taking it down. A young labourer named William Mutch was killed.

**The Monument to Schumann**, which is to be erected at Zwickau, Saxony, will be unveiled on July 8th, 1901. It will cost about 30,000 marks.

**The Roof of the Foundry** fell in at Messrs. Shaw's works at Middlesborough last week, and killed a man named Charles Adams. Five other men were injured.

**The New Granary at Avonmouth Dock**, Bristol, will have a capacity of 70,000 quarters, and will cost about £65,000. Mr. C. A. Hayes is the contractor for its erection.

**A New Font** was dedicated recently at St. Giles' Church, Newcastle-under-Lyme, by the Bishop of Shrewsbury. Mr. Robert Bridgeman, of Lichfield, executed the work from designs by Mr. John Lewis, architect.

**Alterations to the Goods' Offices and Warehouses** are to be carried out at the Kirkgate Railway Station, Wakefield. The tender of Messrs. Leake and Sons, of Norman, estimates the cost at about £7,000.

**The Dean Vaughan Memorial Church**.—The foundation stone of this church was laid by the Princess Henry of Battenberg, acting on behalf of the Queen, last Friday. The cost of the church will be about £8,980.

**A Fire on a Builder's Premises**.—A store building and a greenhouse belonging to Mr. H. C. Faulks, builder, of Carysfort Road, Stoke Newington, were recently destroyed by fire. Several trees near at hand were also damaged considerably.

**New Gardeners' Lodge at Stratford Hospital**.—At a special meeting of the Court of Governors, held at Stratford-on-Avon Hospital last Wednesday, it was resolved that £860 should be appropriated from the capital fund for the purpose of building a gardeners' lodge and other work; £500 is to be spent on the lodge.

**A New Church Institute**, which has been built at a cost of about £2,000, was dedicated recently at Malvern.

**A New Mission Hall at Keighley** was opened recently. It has been erected by the Wesleyan Methodists of that town, and has cost about £2,650, of which over £400 has yet to be raised.

**A Statue of Johann Anthony van Riebeeck** was unveiled at Cape Town recently by the Mayor. The statue is the present of Mr. Cecil Rhodes. Van Riebeeck was the Dutch founder of the town.

**The Memorial to Archbishop Benson** in Canterbury Cathedral was unveiled last week by the Duchess of Albany. The memorial was designed by Mr. Henry Jackson, R.A., and sculptured by Mr. T. Brock, R.A.

**Wollaston Hall, Stourbridge**, a well-known old and picturesque mansion, has been sold, with the estate of 20 acres upon which it stands, to Mr. Caleb Roberts, of the firm of Messrs. Roberts and Cooper, for £4,300.

**A New Church for Keighley**.—It has been decided to erect a new church for the district of All Saints', Keighley, at a cost of about £3,000, towards which the Duke of Devonshire has promised a donation of £800.

**A Substantially-built Lattice Bridge**, over the Black Devon at Riccarton, erected by the Clackmannan County Council, was formally opened last week. Mr. R. Melvin, of Sunny-side Foundry, Alloa, was the contractor for its erection.

**A New Church at Cornaig, Tiree**, has been erected for the Rev. Mr. MacPherson, the parish minister. The church, which is Gothic in style, was designed by Mr. Fletcher, of Mull, and erected by Mr. Donald Mac Donald, contractor, of Coalis.

**The Palais du Maréorama Hugo d'Alesi** is now being erected in Paris, at the corner of the Avenue Suffren and the Quai d'Orsay. It is designed in Oriental style, and is being erected for the Société du Maréorama. The building will display views in Tunis, Algiers, Naples and Venice, by the celebrated painter, Hugo d'Alesi.

**Proposed New Poorhouse at Aberdeen**.—The Works Committee of the City Parish report that they have had under consideration the advisability of building a new poorhouse, or of making either of the present poorhouses suitable for the requirements of the parish, after the poor have been removed to the new asylum which is in the course of construction. The estimated cost of this scheme is £49,877.

**The New School at Larnick** is to be built from plans by Mr. Wilson, architect, of Edinburgh, and will cost £7,000.

**A New Town Hall** is to be erected at Ayr at a cost of £10,000. It will be remembered that the last building was destroyed by fire.

**The Victoria Tower, Huddersfield**, of which some particulars were given on page 330 of our issue dated July 5th, is 100ft. high and 27ft. square (not 20ft. square, as stated in our paragraph). We make this correction justice to the architect, Mr. Isaac Jones.

**Permission to Enlarge the Osborne Hotel, Bradford**, was applied for at the Bradford City Police Court, last Wednesday, by Mr. A. Neill on behalf of the owners of the hotel. The enlargement consists of additional bedrooms. It was stated that the application would be granted.

**Three Painters fell from a Scaffolding** at Leith last week. While they were cleaning a staircase in Easter Road one of the ladders supporting the scaffolding slipped, and the three men, John Kerr, David Marr and John Nicholson, fell a distance of 15ft. Kerr and Marr, who were badly hurt, were conveyed to the hospital.

**The Illustration of the New King's College Buildings**, published on p. 348 of our last week's issue, was reproduced by kind permission of the Editor of the "Westminster Gazette," in whose paper it originally appeared. We regret that this acknowledgment was inadvertently omitted from our paragraph last week.

**The Suitability of High Hazels Hall for use as a Museum** has caused some friction between the members of the Attercliffe General Purposes and Parks Committee and the Free Libraries and Museum Committee, who met recently to consider a report on the subject proposed by some members of the latter committee. This report describes the building, which is a substantial stone structure, and states that if used for museum purposes the partition walls of the bedrooms could be pulled down and would make three good-sized rooms. The building, they considered, had an appearance not unworthy of an art museum. A resolution that it was undesirable to convert the hall into a museum was lost, and an amendment instructing the City Surveyor to report (1) as to the costs of the alterations outlined in the report, (2) the cost of maintenance and support, and (3) the estimated cost of erecting a new museum, was carried by twelve votes to eight.



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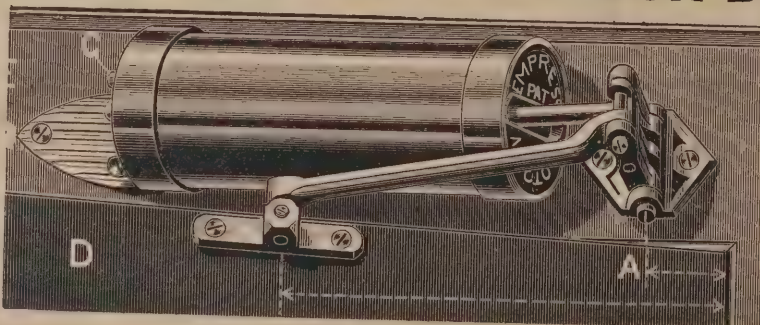
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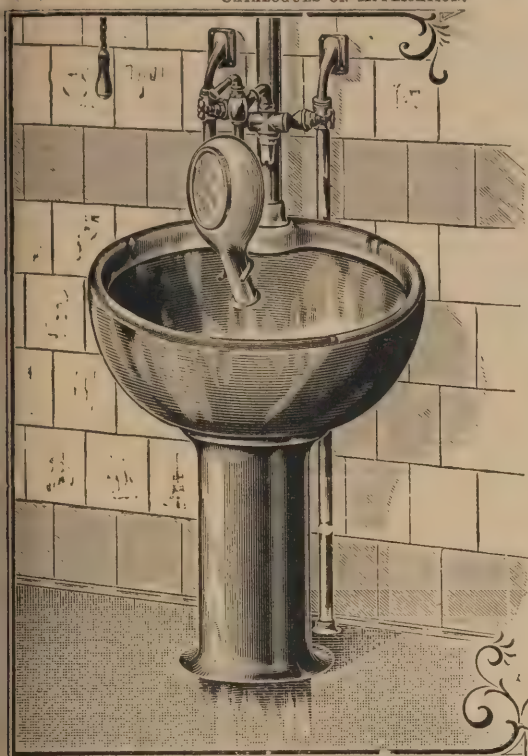
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## CURRENT PRICES.

FORAGE.			
	£ s. d.	£ s. d.	
Hay, best ... ..	per load	3 10 0	4 0 0
Sainfoin mixture ... ..	do.	3 10 0	4 5 0
Clover, best ... ..	do.	3 10 0	5 0 0
Beans ... ..	per qr.	1 6 6	
Straw ... ..	per load	1 4 0	1 16 0

## OILS AND PAINTS.

Castor, French ... ..	per cwt.	1 5 1	—
Colza, English ... ..	per cwt.	1 2 0	—
Copperas ... ..	per ton	2 0 0	—
Lard ... ..	per cwt.	1 8 9	1 9 0
Linseed ... ..	per cwt.	1 0 6	—
Neatsfoot ... ..	per gal.	0 2 6	0 4 0
Petroleum, American ... ..	per gal.	0 0 6	—
Do., Russian ... ..	per gal.	0 0 5 1/8	0 0 5 1/8
Pitch ... ..	per barrel	0 8 0	0 8 6
Tallow, Town ... ..	per cwt.	1 5 0	1 7 3
Tar, Stockholm ... ..	per barrel	1 6 6	—
Turpentine ... ..	per cwt.	1 10 9	1 11 0
Glue ... ..	per cwt.	1 14 0	2 18 6
Lead, white, ground, carbonate per cwt.		0 19 0	—
Do. red ... ..	per cwt.	0 17 0	—
Soda crystals ... ..	per ton	2 15 0	—
Shellac, orange ... ..	per cwt.	3 5 0	3 6 0
Do. sticklac ... ..	do.	2 2 6	2 15 0
Pumice stone, ... ..	do.	0 8 9	—

## METALS.

Copper, sheet, strong ... ..	per ton	88 0 0	—
Iron, bar, Staffs. in London ... ..	do.	8 10 0	9 10 0
Do. Galvanised Corru. gated sheet ... ..	do.	13 0 0	13 10 0
Lead, pig, Spanish ... ..	do.	14 10 0	—
Do. English common brands ... ..	do.	14 15 0	—
Do. sheet, English, 6lb. per sq. ft. and upwards ... ..	do.	16 10 0	—
Do. pipe ... ..	do.	17 5 0	—
Nails, cut, cheap, 3in. to 6in. ... ..	do.	8 0 0	10 0 0
Do. floor brads ... ..	do.	8 15 0	9 15 0
Tin, Foreign ... ..	do.	132 2 6	132 12 6
Do. English ingots ... ..	do.	134 10 0	—
Zinc, sheets, English ... ..	do.	27 10 0	28 10 0
Do. Velle Montaigne ... ..	do.	31 0 0	—
Do. Spelter ... ..	do.	26 0 0	26 5 0

## TIMBER.

## Soft Woods.

Fir, Dantzic and Memel ... ..	per load.	3 0 0	4 0 0
Pine, Quebec Yellow ... ..	do.	4 7 6	6 5 0
Laths, log, Dantzic ... ..	per fath.	4 10 0	5 10 0
Deals, Petersburg ... ..	do.	4 0 0	6 10 0
Do. Archangel 2nd & 1st per P. Std. ... ..	do.	9 0 0	15 10 0
Do. do. 4th & 3rd. ... ..	do.	12 0 0	12 5 0
Do. do. unsorted ... ..	do.	7 5 0	8 5 0
Do. Riga ... ..	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow ... ..	do.	10 10 0	14 15 0
Do. do. 2nd ... ..	do.	10 10 0	12 0 0
Do. do. Unsorted ... ..	do.	10 0 0	10 15 0
Do. do. White ... ..	do.	7 15 0	9 15 0
Do. Swedish ... ..	per P. Std.	9 0 0	16 10 0

Deals, White Sea ... ..	do.	12 5 0	£ s. d.	£ s. d.
Do. Quebec Pine, 1st ... ..	do.	18 0 0	—	—
Do. do. 2nd ... ..	do.	12 0 0	—	—
Do. do. 3rd & 2nd ... ..	do.	7 15 0	9 15 0	
Do. Canadian Spruce, 1st ... ..	do.	9 0 0	10 5 0	
Do. do. 3rd & 2nd ... ..	do.	6 5 0	7 15 0	
Do. New Brunswick ... ..	do.	7 5 0	8 0 0	
Battens, all kinds ... ..	do.	7 0 0	8 12 6	
Flooring Boards, 1 in. prepared, 1st ... ..	per square	0 9 6	0 12 0	
Do. 2nd ... ..	do.	0 8 6	0 11 9	
Do. 3rd & 2nd ... ..	do.	0 7 8	0 10 9	

## HARD WOODS.

Ash, Quebec ... ..	per load	3 17 6	4 10 0
Birch, Quebec ... ..	do.	3 12 6	3 17 6
Box, Turkey ... ..	per ton	7 0 0	15 0 0
Cedar, Lin. Cuba ... ..	per ft. sup.	0 0 4	0 0 4 1/2
Do. Honduras ... ..	do.	0 0 3 1/2	—
Do. Tobasco ... ..	do.	0 0 5 3/32	—
Elm, Quebec ... ..	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras ... ..	per ft. sup.	0 0 4 7/8	—
Do. African ... ..	do.	0 0 5	—
Do. St. Domingo ... ..	do.	0 0 6 17/32	—
Do. Tobasco ... ..	do.	0 0 5 3/16	—
Oak, Dantzic and Memel ... ..	per load	3 5 0	3 5 0
Do. Quebec ... ..	do.	4 12 6	5 0 0
Teak, Rangoon, planks ... ..	do.	8 15 0	13 15 0
Wainscot, Riga (Baulk) ... ..	do.	3 15 0	5 15 0
Do. Odessa Crown ... ..	do.	3 15 0	5 15 0
Walnut, American ... ..	per cub. ft.	0 2 6	0 4 2

## COMING EVENTS.

Wednesday, July 19.

INSTITUTION OF JUNIOR ENGINEERS.—Visit to Messrs. James Simpson and Co.'s Engine Works, Grosvenor-road, Pimlico. 6 p.m.

BUILDERS' FOREMEN AND CLERKS OF WORKS' INSTITUTION.—Half-yearly Meeting of Members. 8 p.m.

Thursday, July 20.

BUILDERS' BENEVOLENT INSTITUTION.—General annual meeting and election of officers, at 3 p.m.

## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

AYLESBURY.—Accepted for the erection of three villas Manor-park, Aylesbury. Guest Luckett, architect, Aylesbury.

C. Powell ... .. £1,050

AYLESBURY.—Accepted for the erection of a pair of small villas, Manor-park. Guest Luckett, architect, Aylesbury.

F. Nash ... .. £570  
BRISTOL.—For alterations of and additions to factory and premises, Gloucester-street, St. Paul's, Bristol, for Messrs. H. O. Strong and Co., engineers, &c. Messrs. W. Holbrow and Sons, surveyors, 9, Clare-street, Bristol:—  
Wilkins and Gosling ... .. £1,408  
W. Foster ... .. 1,395  
C. W. Foster ... .. 1,395  
C. Walters ... .. 1,120  
F. Hatherly ... .. 1,285

BURGH S. MARGARET (Norfolk).—For the restoration to church tower. Herbert J. Green, architect, 31, Castle-meadow, Norwich:—  
H. Whitehead ... .. £693 7 4  
A. A. Beech ... .. 690 0 4  
R. W. Riches ... .. 645 0

DOWLAIS (S. Wales).—For the erection of a swimming bath, penny baths, laundry, &c. (exclusive of engineering work and steel roof trusses) for the use of the employees of the Dowlais Iron Company, for the Right Hon. Lord Wymborne Mr. R. Owen Allsop, architect, 37, Norfolk-street, Strand London:—  
Lathey and Co. ... .. £7,957 0  
Shepton and Son ... .. 5,317 18  
J. Linton ... .. 4,600 0

HOOK-NORTON.—Accepted for the erection of a house Guest Luckett, architect, Aylesbury:—  
W. Luckett ... .. £350

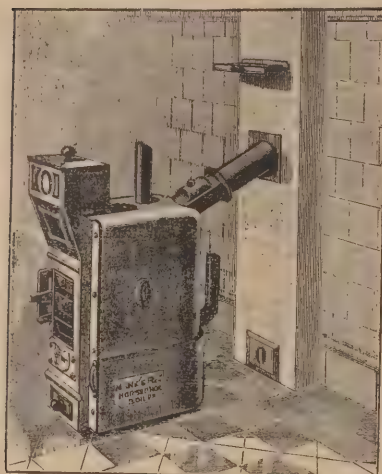
KINGSTON-ON-THAMES.—For the erection of two shops in the London-road. Mr. E. F. Augustus Spratt, architect, 90 and 91, Queen-street, Cheapside, E.C., and Kingston-on-Thames:—  
Norbury and Co. ... .. £1,168  
J. P. W. Turner\* ... .. £1,000  
List ... .. 1,100

LONDON.—Rebuilding girls' and infants' offices, enlarging boys' offices, refitting laboratories, and providing new drainage complete at Sydenham Hill-road school, for the London School Board. Mr. T. J. Bailey, architect:—  
G. Parker ... .. £2,493 2 6  
Lathey Bros. ... .. 2,432 0 0  
J. & C. Bowyer ... .. 2,373 0 0  
Maxwell Bros., Ltd. ... .. 2,363 0 0  
H. Leney\* ... .. 1,707 0 0

LONDON, S.E.—For repairs to the Royal Hospital for Children and Women, Waterloo Bridge-road, Lambeth, S.E. Messrs. Waring and Nicholson, architects, 38, Parliament-street, S.W.:—  
Wm. Smith ... .. £110 10  
Higgs and Hill, Ltd. ... .. 106 16  
J. Mills, Junr.\* ... .. £103 10

LONDON.—For erecting a four story warehouse in Snowsfields, Bermondsey, for Mr. John Wilson. Mr. James Thomas Holmes, architect:—  
Barlow and Watts ... .. £2,353  
Battley, Sons and Holness ... .. 2,029  
J. Bullers ... .. £2,025  
B. Wells (accepted) ... .. 1,859

LOUGHBOROUGH (Leicestershire).—For alterations and extensions to the Corn Exchange, for Loughborough Corporation. Mr. A. H. Walker, C.E., Borough Surveyor, Town Offices, Loughborough. Quantities by surveyor:—  
Price ... .. £2,175 0 0  
Watson and Lovatt ... .. 2,110 0 0  
Tailby ... .. 1,983 1 6  
Moss ... .. 1,980 0 0  
Harding ... .. £1,980 0 0  
Main, Kendall, and Main, Loughboro\* ... .. £1,910 0 0



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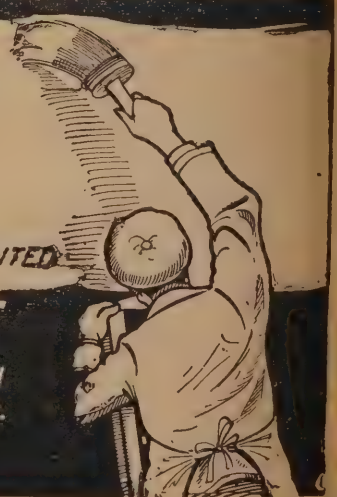
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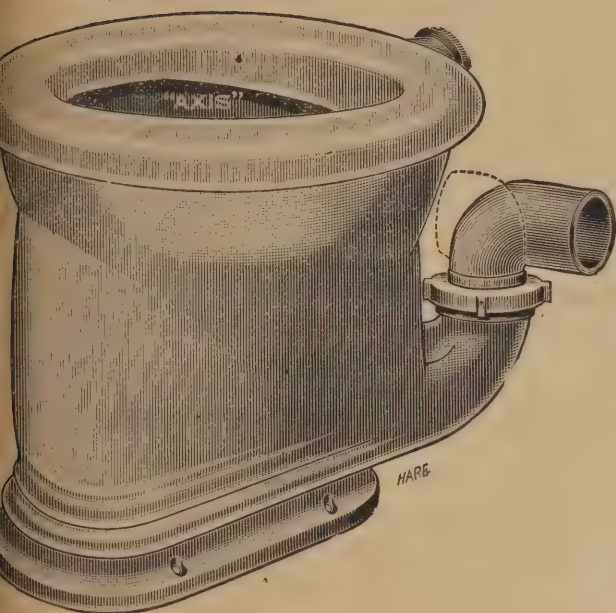
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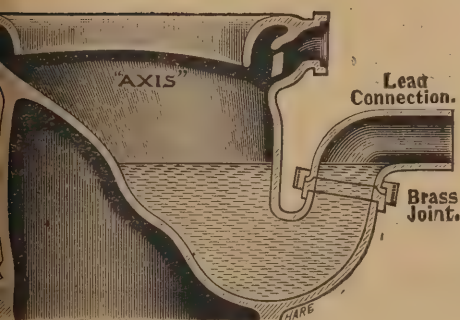


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**CLIFF VALE POTTERIES,**  
**HANLEY.**



MORLEY (Yorks).—Accepted for the erection of schools, Victoria-road, for the School Board. Messrs. T. A. Buttery and S. B. Birds, architects, Queen-street, Morley :—

Masonry.—Clegg and Son, Morley	£4,850 0 0
Joinery.—Newton and Asquith, Morley	1,870 0 0
Plumbing.—W. Naylor, Morley	650 0 0
Plastering.—E. Wilson, Morley	450 0 0
Slating.—Sharpe and Harper, Holbeck	715 0 0
Ironfoundry.—F. Thackray, Morley	402 3 3
Painting.—C. Habergham, Morley	106 0 0

QUANTON.—For the erection of six cottages, one house, and shop, for Mr. A. Curtis, of Ashendon. Mr. Guest-Luckett, architect, Aylesbury :—

Darlington	£2,050 0	Crook and Sons	£1,703 0
Grant	1,914 0	Matthews Bros.	1,628 0
Kimberley	1,800 0	Tombs and Sons	1,525 0
Sherwin	1,711 10	Cannon and King	1,498 0
Senior and Clarke	1,707 10	Holland and Sons*	1,490 0

\* Accepted.

REDHILL.—For the superstructure of three business premises, Station-road (but exclusive of terra-cotta and bricks). Mr. A. Broad, architect, 22, George-street, Croydon. Quantities by the architect :—

Buckland and Waters	£4,390	D. W. Barker	£3,883
C. Parsons	4,360	Akers and Co.	3,811
Nightingale and Sons	4,095	J. J. Carrick	3,780
Smith and Sons, Ltd.	3,982	Pink and Moon, Mers-	
Worsell and Martin	3,950	tham*	3,666

Stiff and Sons ... £160

Terra-cotta, Gibbs and Canning, Tamworth\* ... £145

\* Accepted.

SHEERNESS.—For the erection of a girls' school, for the Sheerness and Minster-in-Sheppy Board School. Mr. Leonard Grant, architect, Sittingbourne :—

G. E. Wollard	£7,956	H. E. Phillips	£6,990
J. E. Bligh	7,852	J. M. Easton	6,980
E. F. Hughes	7,458	West Bros.	6,871
Pavey and Sons	7,090	J. H. Harris, Chatham*	6,520

\* Accepted.

SIDCUP (Kent).—For erecting St. John's Church, Sidcup, Kent. Mr. George H. Fellowes Frynne, architect, 6, Queen Anne's Gate, Westminster. Quantities by Mr. R. Henry Hale, 33, Old Queen-street, Westminster; S. W. :—

Lawrence and Sons ... £13,150

Rider and Son ... 13,075

Dove Bros. ... 12,175

Stimpson and Co. ... 11,285

Holloway Bros. ... 11,087

J. Otway ... 11,033

Stephens, Bastow, & Co. ... 10,954

\* Accepted.

WINDOVER (Bucks).—For the erection of a villa residence, for Mr. F. W. Blake. Guest Luckett, architect, Aylesbury :—

Kimberley ... £950

Darlington ... 780

Mead ... 720

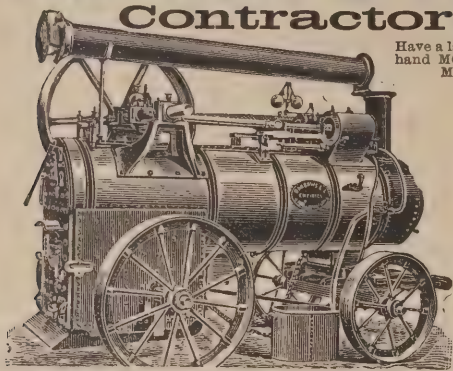
Mayne and Son ... 685

Holland ... 2,681

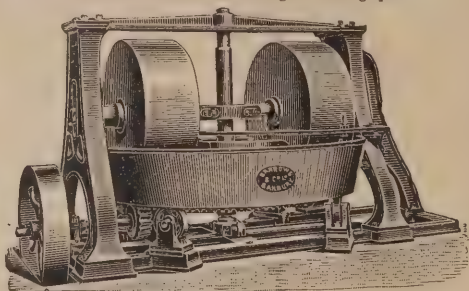
Senior and Clarke ... 870

Sherwin (accepted) ... 830

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SUPPLY every description of MATERIALS for Bricklayers, Plasterers, Slaters, Plumbers, and Sanitary Engineers. Contractors for cartage of all kinds. Scaffolding and Miscellaneous Plant on hire or for sale. Special quotations per return of post. Enquiries and all orders, large or small, will receive immediate attention.

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JULY 19TH, 1899.

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*See Large Advertisement, Back Page, Monthly.*

## THE PROBLEM SOLVED!

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### The London Non-Flammable Wood Co. Ltd.

who have recently introduced into Europe the process now being so largely used in America, have erected large works in this country, and are now taking Orders for the supply of their

### NON-FLAMMABLE WOOD.

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... and ...  
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NON-FLAMMABLE WOOD has been tested by H.M. Admiralty, and large Orders have been given by H.M. Government.

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## THE LONDON NON-FLAMMABLE WOOD COMPANY Limited,

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# CHEAP ROOFS AND COVERINGS.

BY G. S. MITCHELL, F.S.I.

FOR temporary works and for many purposes, such as shelter sheds for agricultural uses, sheds over pit mouths, in iron and brick works, and other business erections, and especially where large superficial areas are to be covered, it is essential that the capital outlay should be curtailed as much as is reasonably possible, though it is well also to bear in mind the question of after maintenance.

Cheapness of construction, if only attained with the certainty of great future cost of maintenance, ceases to be economy, though unfortunately it is only too frequently that one sees the question of initial outlay unduly studied and without any proper regard to the after expenditure. The material which occurs most naturally to the mind when considering a cheap roofing material is:—

Iron, usually corrugated and galvanised, and built "self-supporting" or as span roofs.

For many purposes, this is the most economical and durable material to be employed, though it is nevertheless subject to the following disadvantages:—

1. It is liable to be stripped by wind pressure from the inside, unless the sides be completely covered in.
  2. It is somewhat noisy during wind or rain.
  3. It is liable to become unpleasant by reason of the condensation of moisture on the under side.
  4. Buildings covered with it are hot in summer and cold in winter, and so are not entirely suitable for the housing of livestock.
- On the other hand iron is easily and quickly fixed, and is particularly useful in situations where the pitch is too flat for any other roof covering.

A ton of 22-gauge sheets (each of eight 3in. corrugations) consists of about 112 sheets of 6ft. length each, or a ton of 26-gauge would contain about 178 sheets of similar character. The price of 22-gauge being, say, £10 per ton, and of 26-gauge £11 5s., the comparative costs (allowing 3in. side laps and 4in. end laps) would work out at about 17s. 4d. per square (of 100ft. super.) for 22-gauge and 11s. 4d. for 26-gauge.

It should be noted that though sheets of extra length (say 9ft. or 10ft.) cost proportionately a little more than the more usually employed 6ft. or 7ft. lengths, they are yet economical in cases where it is safe to increase the distance between the roof purlins to a width sufficient to fit the longer sheet.

at about 24s. to 28s. each, according to size. Neither in the case of lights nor of ventilators is any other fixing needed than in the case of an ordinary sheet.

The cost of plain galvanised ridge capping may be taken at from 2d. to 5d. per foot according to its gauge and the width covered (usually 12in. to 18in.). Galvanised cone-headed screws will cost about 2s. 6d. per gross, and galvanised washers to suit about 8d. a gross, about 3lb. of screws being needed to every square of roofing.

Other inexpensive roofing materials are enumerated below:—

Felt, inodorous or otherwise, must be fixed on rough boarding (good quality costing about 13s. per square) by flat-headed nails, and with laps of about 2in. The whole should be well tarred after completion, a little lime being mixed (after sifting carefully) with the tar. The felt itself will cost about 4s. 9d. per square. It is not generally known that a slight leak in a felt roof may be remedied by tacking thick brown paper over the spot and tarring thoroughly.

Willenden Paper need not necessarily be laid on boards, but may be fixed by wood battens above, nailed through the paper into the rafters below at every lapped joint, the paper of course being laid up and down the roof. This material (4-ply) costs about 1s. 7d. per square yard, allowing for lap, and owes its economy to the saving in the timbers needed for the roof construction rather than to any cheapness of its own.

Glass is now a very inexpensive material, and were it not for the cost of the so frequently needed repainting and painting, this would form a very cheap roof covering; 26oz. British sheet glass may be obtained at from 3½d. per foot super. upwards, ½in. rolled plate from 2½d., and 21oz. foreign glass at as low as 1½d. per foot super. For the sake of economy, glass should be purchased in sheets of a standard size.

"Open," "Half," or "Chequer" Slating is sometimes employed for farm buildings or where special ventilation is required. The saving by this method is, of course, confined to the reduction in the quantity of slates and nails used—nearly one half—the battens or boards remaining the same as in ordinary close slating. In place of the slates in any particular course being butted close to one another they are spaced laterally in such a manner as to just cover the joint between the slates in the course below. Slating of this description is well adapted for use in farm buildings, covered yards, or anywhere where livestock is housed, as by its construction it affords a certain amount of ventilation, and it is neither hot nor cold, as is the case with iron roofs.

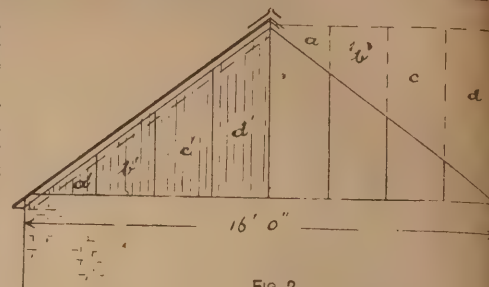


FIG. 2

which catch the rain and conduct it to the bottom of the board, may be either cut in the edge of the board in exactly the same way as in a grooved floor board (Fig. 1, a), or they may be cut on the upper surface and near the edges of the board (Fig. 1, b), either plan being equally efficacious in catching even driving rain.

The boards must not be placed with their edges closely butting, but should be fixed with a space between each of from ¼in. to ½in. width (modified according to the state of dryness of the boards when put on), and the whole should be well tarred outside. To make quite sure that no wet shall travel round the edge of the board, and so rot the wood underneath, small studs or nails with large projecting heads may be driven into each purlin, in order to prevent its actual contact with the roof board. A roof of this description may be built complete at a cost of from 5d. to 7d. per square foot of the horizontal area covered, the cost varying according to the size of the spans and the character of the work. It is worthy of note that with boards grooved in the edges, these grooves must be clean and true, as every splinter left causes a drip or forms a bridge to the next board, in either case destroying the weatherproof character of the work.

GABLE ENDS.—It is astonishing how few people realise how readily corrugated iron lends itself to the covering in of gables, and in point of fact, when properly painted (an operation which should be postponed a little on newly galvanised iron) this material has a much neater appearance when vertically fixed than it can possibly have upon the slope of a roof. Fig. 2 illustrates how easily and economically iron sheets may be utilised in such a position. The gable shown is of 16ft. width and 6ft. high. Four ordinary corrugated sheets only are employed, and when properly cut—as indicated by the dotted lines in the figure—the pieces a, b, c, and d, fit accurately in the positions a', b', c', and d', respectively, and no waste whatever is occasioned by the cutting.

The cost of covering such a gable is, then, as follows:—

Four 6ft. sheets at (say) 1s. 7d. each .....	s. d.
Cutting same at Works will cost about .....	6 4
	2 0
Total .....	8 4

or only about 1s. 8d. per square.

The operation of cutting should be performed at the Works where the sheets are made, as it is very slow and unsatisfactory work to cut them with a hammer and cold chisel, as must be done if they are not purchased specially cut to sketch.

In the case of larger gables than that illustrated, and when the altitude is greater than the length of a single sheet, a little more trouble must be taken in accurately setting out the sheets, but the same principle will be found to hold good in all cases where the angle of roof slope is equal on either side of the ridge.

(To be concluded.)

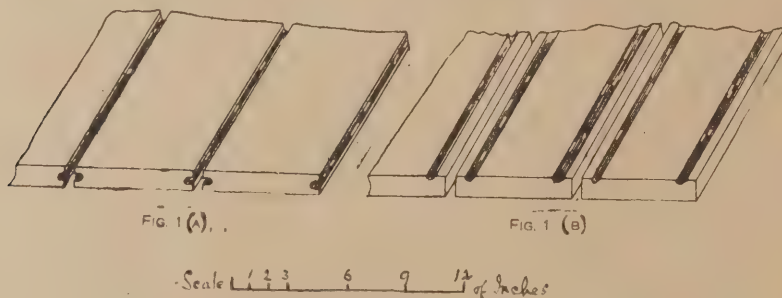


FIG. 1 (A).

FIG. 1 (B).

Scale 1 2 3 6 9 12 of Inches

FIG. 1 (A). SHOWING ROOFING BOARDS WITH SIDE GROOVES AND HALF-INCH SPACES.

FIG. 1 (B). SHOWING ROOFING BOARDS, WITH HALF-INCH GROOVES AT ABOUT HALF-INCH FROM THEIR EDGES AND UPON THE UPPER SURFACE.

Where there is sulphurous smoke, special carbonised corrugated iron sheets may be used, and are said to be very durable, though personally I have never used them. In many cases it pays to paint the underside of galvanised iron sheets, and so increase their durability. Should lights be needed in corrugated iron roofing, special sheets may be obtained for the purpose; the cost of a fixed light 36in. by 20in. inserted in a 6ft., 7ft., or 8ft. sheet of 22 gauge is about £1, and if made to open, another 5s. will cover the cost. Louvre ventilators may similarly be obtained

Weather boarding is a very convenient covering and one easily erected, and is much used in the country, where home-grown timber (such as Scots fir or poplar) is often practically valueless. Where the wind cannot penetrate inside, the roof timbers may be very slight to carry weather boarding. It should be well tarred or creosoted to protect it from the weather.

Grooved Boards form a very cheap, and for all practical purposes, weather-tight roof. They should be fixed with the slope of the roof and carried on purlins at sufficiently close intervals to prevent sagging. The grooves

**L.C.C. Loans.**—At the usual meeting last week of the London County Council, it was decided to lend the Wandsworth District Board £3,500 for improvement works; the Kensington Vestry £6,000 for street improvements; the Battersea Vestry £30,000 for the purchase of wharves; and the guardians of St. Saviour's Union £3,100 for the purchase of leasehold property.



## THE BUILDING TRADE DISPUTE.

THIS dispute is becoming wearisome with its seemingly never-ending hitches in the settlements which, when made, were thought to be perfectly satisfactory. Owing to some differences regarding the carrying-out of the recent agreement terminating the plasterers' lock-out, arrived at between the Master Builders' Association and the National Association of Operative Plasterers, the former have asked the plasterers to meet them to discuss the matter. The secretary of the plasterers' association, on behalf of the plasterers, wrote to the master builders that it would be necessary to submit their request to his executive council.

The representatives of the London Order of Bricklayers met the Yorkshire employers, last Thursday, in conference, to endeavour to come to a satisfactory settlement. The conference was presided over by Mr. W. Nicholson, and the discussion was characterised by a desire on both sides to come to a friendly settlement. As was expected, the celebrated manifesto issued by the employers on the eve of the county lock-out practically formed the basis of the conference.

It will be seen from the text of the proposed settlement that several of the clauses of the Yorkshire manifesto have been accepted. By the terms of settlement the masters state that they have secured recognition of the much-debated principle of freedom of employment. The men will return to work to their old situations, and at the old rate of wages, and one clause of the agreement binds them not to interfere with non-union men. The men would accept this clause the more readily from the fact that they have not, they state, indulged in undue interference with non-unionists in the past. The settlement embodies some of the findings of the plasterers' conference and some of the clauses of the Yorkshire manifesto, but it will be seen that it also evidences a give-and-take policy on the part of the parties to the conference. The provisional terms of the settlement are as follow:

Clause 1 of Yorkshire Manifesto. Rule adopted—"That no foreman shall be compelled to join a trade union, nor compelled to leave one." N.B.—"The definition of the word foreman is a man who is constantly in charge of work, and not continually laying bricks."

Clause 2 of Yorkshire Manifesto. Rule adopted—With reference to the alleged refusal of members of the Operative Bricklayers' Society to work with men who may not belong to a trade union, the members of the O.B.S. agree that they will only use reason and argument to induce non-unionists to join their Union; but if the employer can prove to the employer that certain workmen are defaulters (as defined by Rule 6, Clause 5, of the O.B.S.'s present rules), the employer shall see that such person objected to shall pay up all arrears due to his society or remove him. Such men or foremen who have left the society during the dispute, if they have paid up all arrears due to the society up to the time of leaving it, shall not be considered defaulters, and the men shall not refuse to work with them.

Clause 3 of Yorkshire Manifesto. Rule adopted—For the purpose of demarcation of work, joint committees shall be established in the different districts, equally representative of the employers and the mechanics, whose representation shall be equally divided amongst the different branches of the trade in question. These committees shall, as far and as soon as possible, draw up schedules of work which it is recognised belong to certain branches of the trade. To such committees shall be immediately referred all points of dispute as to demarcation, and the decision of the majority in each case shall be accepted as binding on both sides. Should they fail, however, to decide them, the matter shall be referred for settlement to a similarly constituted joint committee representative of the Yorkshire Federation and the Bricklayers' Central Society, whose decision shall be final, provided that the employers' representatives are bona fide employers of bricklayers direct. Pending such reference to the local committees, no strike or lock-out shall take place; but the decision of the employer shall be provisionally accepted as to who shall do the work, provided that preference shall be given to that branch of the trade which in practice has done the work before in that district, and provided that no preference be given on account of the payment of lower wages.

Clause 4 of Yorkshire Federation Manifesto does not apply to the Bricklayers' Society.

Clause 5 of Yorkshire Federation Manifesto. Rule adopted for Apprentices.—No employer shall employ more bricklayers' apprentices than is equal to one-fourth of the total number of operative bricklayers employed by him. All apprentices shall be legally bound for not less than five years, and to commence not later than sixteen years of age. N.B.—Recommendation that no employer engages any apprentices until he has been in business twelve months.

Clause 6 of Yorkshire Manifesto. Rule adopted for Conciliation Board.—In the event of a dispute arising on any job or works, the district officials of the Bricklayers' Society shall send written notice to the Local

Association of Master Builders, who shall inform them within forty-eight hours whether the said builder is a member of that body. If so, a strike shall not be sanctioned by the Bricklayers' Society until six clear working days have expired from the receipt of such notice, during which time the matter shall be considered by the employers and the representatives of the workmen, with a view to an amicable settlement.

Failing a local settlement, reference shall be made immediately to the Yorkshire Federation and the central committee of the operatives, and until five days have expired from the date of this reference no strike or lock-out shall be sanctioned either by the operatives or the Yorkshire Federation. The employers agree to suspend the work in dispute pending a settlement.

### CONDITIONS OF SETTLEMENT.

1. Men return to work at the old rate of wages or wages already agreed upon, and to return to their old masters.
2. All men returning to work must do so peaceably with the non-union men now employed, whether of their own trade or allied trades.

It is understood that the O.B.S. will have to submit the terms of settlement to their members for approval before work can be resumed. The vote will be taken as soon as possible.

The Leeds branch of the Amalgamated Society of Carpenters and Joiners adopted last week a resolution which can have no other effect than to accentuate the already somewhat strained character of the relations between employers and employed in the building trade. They have determined that unless the 25 per cent. lock-out by the Federated masters in the city is withdrawn on or before Friday, the 21st inst., they will themselves withdraw the remaining 75 per cent. on the following day, giving, of course, the usual two hours' notice. Out of a total membership of over 1,250 nearly 1,200 members were present when this resolution was made, and there was a majority of more than 1,000 for the resolution. The meeting was attended and addressed by two members of the Central Executive, but these gentlemen were present chiefly for the purpose of gauging the feeling of the Leeds members of the society.

## Engineering Notes.

**The Hammersmith Vestry is Borrowing** £30,000 from the London County Council for electric lighting purposes.

**The Warming of Myrtle Street Baptist Chapel, Liverpool,** has been very unsatisfactory for a long time, and Messrs. John King (Limited), engineers, of Liverpool, were recently instructed to put it in a satisfactory condition. The old apparatus has been entirely removed, and the church is being fitted with the Firm's latest improved hot water heating apparatus.

**Electric Lighting Project at Wigan.**—Mr. H. P. Boulnois recently held an inquiry on behalf of the Local Government Board into the application of the Wigan Corporation for sanction to borrow £90,000 for electric lighting purposes. After the usual formal evidence, the inquiry closed.

**The New Pier at Rock Ferry, Birkenhead,** was opened recently by the Mayor (Alderman J. T. Thompson). The pier is 791ft. 6in. long and 18ft. wide. The girders of the pier are constructed of steel supported on cast-iron columns 14in. diameter. The approach bridge between the pier and stage is 160ft. long and 10ft. wide, and is hinged at the top and bottom to rise and fall with the tide. The stage is 150ft. long by 32ft. wide, and is supported on ten detachable pontoons. The contract price was £14,785 7s. 5d. The old pay office buildings have been taken down and new building erected containing four turnstiles and a contractor's gate, the contractor for this work being Mr. Allen, of Birkenhead, and the amount of the contract £798 10s. Mr. David Barry was the resident inspector of the works. The works have been carried out under the direction of Sir John Wolfe Barry, K.C.B., and Mr. Charles Brownridge, C.E., borough engineer and surveyor of Birkenhead.

## Trade and Craft.

### A RISE IN BRISTLE BRUSHES.

Messrs. G. B. Kent and Sons, of 75, Farringdon Street, London, E.C., inform us that the terrible famine at present raging in Russia has had the effect of seriously diminishing the supply of bristles. They advise us that all orders for brushes made of bristles are subject to an advance of ten per cent., with a prospect of a still further advance in the future. They had fortunately bought a large supply of bristles before the rise became serious, and are able to accept at old rates all orders for prompt deliveries received on or before Saturday last. Orders received on Monday last are subject to the advance. Toilet, painting, household and stable brushes, whisk brooms and banisters advance ten per cent.; tooth brushes and bass brooms remain the same.

### AN AUTOMATIC SAW GUARD.

A saw guard is most necessary, apart from the humanitarian aspects, in view of the stringent provisions of the Workmen's Compensation Act; as is clearly shown by the large number of cases which have occurred recently. Messrs. George Couzens and Co., of 14, Tudor Road, Cardiff, are the makers of a new saw guard for the protection of sawyers against accident. There are many so-called saw guards on the market which require adjusting to suit each piece of timber, and are thus, in themselves, a constant source of danger. With Couzens' patent saw guard, no such adjustment is necessary, and any size of timber can be sawn the full depth of saw, or any smaller size, with perfect safety and absolute protection to the sawyer. The front portion of the saw guard moves away as the timber is pushed against it, and rides on the top of the wood being sawn, so that no part of the saw is uncovered at any time. The back guard is also very simple in action. The riving knife being secured to the arm forms an absolute protection and cannot get out of order. The guard can be fixed from the ceiling by a special iron bracket, where the saw bench is required to be clear, and the guard is light but very strong, with no spring to get out of order or nuts to get loose.

### THE "EMPRESS" SMOKE CURE.

Messrs. Ewart and Son, of 346, Euston Road, London, N.W., send us a price list of their "Empress" Smoke Cure revolving chimney top. This top is strongly made and provides a great advantage in having the spindle work in a cylinder always kept full of oil from a copper cup at the top of tube, as also is the brass bearing, supporting the spindle in position, thus avoiding friction. The perpendicular fans are placed at a sufficient distance to prevent soot from adhering, and give free exit to smoke, and a strong galvanised iron framework inside supports the centre, and is placed close enough to the revolving fans to clear soot by the revolution of the top. A strong wrought-iron plate is firmly fixed to the supporting frame to prevent the sweep's broom from damaging the oil vessel or spindle, or from knocking off the revolving fans. The fans are made of steel, well tinned to prevent rust, and are carefully enamelled over the tin; the other parts are made of stout galvanized iron, enamelled black. The parts are rivetted together and the whole is fireproof. The method by which this chimney-top acts so effectively is that the movable head, easily revolving in any wind, maintains a constant current of air in the tube, and steadies the current by gathering up and gradually distributing the force of sudden gusts of wind instead of allowing them to act directly upon the draught. The prices of the tops are from £1 5s. to £2 13s., and are made in five sizes, but any other size will be made to order.

**Mr. William Robertson,** senior partner of the firm of Robertson and Orchar, Ltd., engineers, of Wallace Foundry, Dundee, died at his residence, Balmore, Newport, last Tuesday week.



## Masters and Men.

**Galashiels Plumbers** are to receive an advance on their wages from 7½d. to 8d. per hour, on October 2nd next.

**Chester Builders' Labourers** resumed work last week. They struck a short time ago for an advance of ½d. per hour, but have accepted ¼d.

**Chester Master Plumbers**, in order to avoid a strike, have granted their employés an advance of ½d. per hour, and a slight alteration of the working hours in winter.

**The Operative Slaters in Dundee** have been granted an increase of ½d. per hour on their wages, to come into operation in September. The present rate is 8½d. per hour.

**The Extension to the Butler Street Schools, Liverpool**, is being warmed and ventilated by means of Shorland's patent Manchester Grates, supplied by Messrs. E. H. Sorland and Brother, of Manchester.

**Unsafe Scaffolding.**—Last Tuesday week, before the Lord Justice Clerk, Lords Young, Trayner, and Moncrief, in the Edinburgh Court of Session, counsel were heard in the adjustment of issues for trial by jury of an action appealed from the Sheriff Court at Glasgow by the plaintiff, John Walpole, labourer, of 121, Gairbraid Street, Maryhill, who sued Wm. Gordon, mason and builder, of 385, Great Western Road, Glasgow, for £150 at common law, or for £100 under the Employers' Liability Act, as damages for injuries. The defendant was contractor for the erection of a church in South Portland Street, Glasgow. On March 14th, 1898, the plaintiff was in his employment. In connection with the raising of a heavy pillar into position by means of a crane the plaintiff climbed up and tied the end of a rope to a scaffolding, and in coming down part of the support of the scaffold gave way, and he fell to the ground. His left ankle was broken and bruised. The defendant said it was no part of the plaintiff's duty to climb the scaffold, and that he was himself entirely to blame for the accident. The Court dismissed the action as at common law, but held it to be relevant under the Act, and they allowed an issue.

**An Appeal by a Railway Painter.**—In the Edinburgh Court of Session on the 11th inst., before the Lord President, Lords Adam, McLaren, and Kinnear, counsel were heard in a stated case under the Workmen's Compensation Act from the Sheriff Court of Dundee. The North British Railway Company were sued by the father, mother, and other relatives of John Barrett, railway painter, Dallfield Walk, Dundee, who was knocked down and killed by a train passing across the Tay Bridge while he was in the employment of the defendants. The Sheriff found that in respect of the limited dependence of the plaintiffs upon the deceased the full compensation allowed by the statute was not justly due. He, however, found the plaintiffs entitled jointly and severally to £75, and gave decree for that sum with expenses. The plaintiffs appealed, and the questions of law for the opinion of the court, as stated by Sheriff Substitute Campbell Smith, were: 1. Is the mother of a son, his father being alive, entitled, according to the law of Scotland, to sue his employers for damages or solatium in respect of his death? 2. Is it competent, under the Workmen's Compensation Act, to discern in favour of the father and mother of the deceased, jointly and severally, for a sum of compensation? 3. Were the father and mother of the deceased, or either of them, upon the facts found by the Sheriff Substitute, in part depending upon the earnings of their deceased son at the time of his death, within the meaning of the Workmen's Compensation Act? The Lord President thought the questions raised in the case were perfectly clear, and, the other judges concurring, the case was remitted to the sheriff to grant a decree for the sum of £75 in favour of the father alone.

**A Mason's Labourer Loses a Compensation Case.**—In the Edinburgh Court of Session, on July 10th, before the Lord Justice Clerk and a jury, the trial took place of an action by Jas. Sally, mason's labourer, of 100, Hopehill, Glasgow, against Richard Dunbar, who carries on business at Elliot Street, Cranstonhill, and elsewhere, under the name of John Wallace and Company. The plaintiff sued for £500 as damages in respect of personal injuries. On August 26th last he was working on the floor of the first storey of new stables which the defendant was erecting in Elliot Street, when he fell to the ground, owing, it was said, to the unstable and defective nature of a wooden bed or centre. The defendant contended that the accident was entirely attributable to the plaintiff's negligence. The plaintiff was not in the employment of the defendant, who is the owner of the stables, but of a firm of contractors. He sued his employer in a former action, but the jury gave a verdict for the defendant. In this action against the owners of the building the jury were absent for half an hour, and on returning announced questions which had been put to them as follows:—Was the centre erected in a manner which is in practice in the trade by competent and experienced tradesmen?—Yes. Had the plaintiff proved that when constructed there was any detailed defect in the structure, and if so, what?—No. Did the plaintiff exercise reasonable care for his own safety in going on the centre?—No. Did the plaintiff or any of his fellow-workmen move any of the planking after it was laid?—Yes. Did the defendant make a reasonable inspection of the centre after it was constructed?—Yes. The verdict was a unanimous one for the defendant.

**A Penny a Week Damages.**—It will be remembered that in our issue of June 28th we reported a case in which compensation was claimed for a crushed finger, and in which nominal compensation at the rate of a penny a week was awarded to allow of the question of compensation being brought for review. Last Friday, in the Court of Appeal, Lords Justices A. L. Smith, Rigby and Vaughan-Williams heard the case of Chandler v. Thomas Smith, in which the same award was given. This was the appeal of the workman from an award of the county court judge, deciding that the workman was not entitled to claim compensation under the following circumstances:—Chandler had been for many years employed at £3 a week as foreman by the defendant, who carried on business as a mill owner, and his duty was to supervise the work of the weavers. He was not engaged to look after the machinery, but when anything went wrong with the looms he invariably attended to it, and, with his master's approval, did work which usually would require the services of an experienced fitter. It was while so engaged that the shuttle caught his thumb, nearly cutting it off. The applicant called evidence to show that if he had to seek a new situation the loss of his thumb would prevent him from applying for the post of foreman or general responsible man at a factory, as he could not now "adjust" or "set" the machines, and that his wages would then be probably less by £1 a week than, but for the loss of his thumb, he could otherwise obtain. The case was argued a month ago, and Lord Justice A. L. Smith, in now giving judgment, after referring to the facts, said the difficulty in the case arose from the finding of fact by the county court judge that the master had continued to pay the workman after the accident the same sum weekly, not as a matter of grace, but as wages, and there was no evidence that the workman could not have demanded full wages, less the time he was away at the surgery, for the services he had rendered his master. The other Lords Justices agreed with him that the master was liable, but they thought that as no pecuniary loss had accrued to the workman so far the county court judge should merely find the master liable, and directed nominal damages of 1d. a week to be paid to the workman in order to keep the award alive, so that should loss accrue in the future to him he might apply to have the damages assessed.

## Builders' Notes.

**Collapse of a Wall at Montifieth.**—A serious accident occurred last week in connection with the construction of a house, which resulted in the death of one man and severe injuries to three others. The mason work of a semi-detached cottage in course of erection in Hill Street was in an advanced state, and a brick partition between the dwellings had just been completed when the accident occurred. The work of removing the scaffolding was being proceeded with, and the upper stage had been taken down. Two men were engaged at the removal of the lower platform, one being on the top of the front wall and the other at the base of the partition. A few yards distant two masons—John Butchart, living in Broughty Ferry, and George Archibald, Maule Street, Montifieth—were preparing the ground for the laying of the ground floor joists; while William Millar, Wellbank, and George McGillvray, Dundee, the master mason and master joiner respectively, stood conversing near at hand. Without warning, several yards of the top of the brick wall fell with a crash into the east half of the building, carrying with it a number of the joists and the remainder of the scaffolding, while the centre of the wall was driven out towards the western section of the building. The workman on the top of the wall succeeded in retaining his hold, and the man below, recognising his danger, managed to jump aside, but had no time to give the alarm to the others. Butchart and Archibald were caught in the fall of bricks, which also struck McGillvray and Millar. When they were extricated, it was found that they were all more or less injured. Butchart, on examination, was found to be suffering from fracture of the skull and other injuries, and died soon after he was removed to Dundee Royal Infirmary. It seems that he has been very unfortunate, having three times previously met with serious accidents while working.

**L.C.C. Building Regulations.**—At the Surveyors' Institution, Westminster, last Monday week, a tribunal of appeal, consisting of Mr. Arthur Cates (Chairman), Mr. J. W. Penfold, and Mr. A. A. Hudson heard the appeal of Mr. R. H. Barnes, the owner of property in York Road, Lambeth, against the refusal of the Building Committee of the London County Council to pass his plans for rebuilding his premises. Mr. Stuart Bevan, instructed by Mr. A. Orgill, represented the appellant, and Mr. Seymour Berry appeared for the London County Council. From the opening statement of counsel it appeared that the appellant is the owner of the lease of 54 and 56, York Road, Lambeth, the property of the Ecclesiastical Commissioners. No. 56 is at present a public-house, and the appellant proposed to pull down both properties and rebuild them as licensed premises. In April last he instructed Mr. Robert Sawyers, F.R.I.B.A., to draw out plans, which were submitted to the local surveyor, and at his invitation sent to the London County Council. These plans were declined by Mr. Wyatt, acting for the County Council; and accordingly amended plans were sent in, which were no more successful. It was against the refusal of the Council to pass these amended plans that the appeal, under sections 41 and 42 of the Building Act, was made. The premises had a frontage of 54ft. to York Road, and a return frontage of 40ft. to Vine Street, on which it was proposed to build a large dining-room which would be a great convenience to the district. They had provided an open space of 150ft., which was all they were legally required to do. The licensing justices had considered the plans and had agreed to sanction the scheme.—Mr. Seymour Berry, for the London County Council, urged that the appellant should so modify his plans as to give an equivalent air space to that at present existing.—The Chairman said the members of the tribunal, having viewed the premises, thought they might rightly and properly allow the appeal. They made no order as to costs.



**Subsidence of Land caused by Morecambe Revolving Tower.**—Three double actions were entered recently against the proprietors of the Morecambe Revolving Tower, erected by Mr. Warwick, the inventor, in 1898, on land adjoining the Highfield Estate and the west end of Morecambe. These actions came before Mr. Justice Wills and a special jury at the Lancaster Assizes. Damages, amounting in the aggregate to about £1,340, were claimed in consequence of dilapidations to lodging houses in the vicinity of the tower, the weight of which, about 600 tons, is alleged to have caused a subsidence of the ground and rendered the walls unstable. The landlord and tenant were plaintiffs in two instances, and in addition to damages for necessary repairs, the owners, in the other case, claimed for depreciation in the value of the property, and also sought an injunction to compel the company from working the tower to the injury of their property. The jury returned a verdict for the plaintiffs, awarding damages amounting to £784.

**West Bromwich Public Improvements.**—Last Tuesday week Col. W. R. Slack, R.E., held an inquiry into the application by the West Bromwich Corporation to the Local Government Board for sanction to borrow £1,671 to defray the cost of enlarging the public baths, £878 to meet the outlay on the Hill Top Police Station, £131 for the Hill Top Park, and £84 for the Oak House Museum. Mr. A. Caddick, the Town Clerk, explained that the money was required because the amounts originally sanctioned had been exceeded, owing to increased cost of materials and labour.

**A Summons under the Building Act.**—At the Penge Police-court last week, Mr. Collman, solicitor to the London County Council, applied for four summonses against the Crystal Palace Company for erecting buildings near the polo ground at the Palace, belonging to the Company, without first obtaining the Council's permission, under the London Building Act. He said the Palace Company claimed an exemption under their special Act of Parliament, and that point would have to be decided when the case came before the Court. The Bench granted the summonses.

Surveying and Sanitary Notes.

**Sewage Disposal at Chesterfield.**—A Local Government Board inquiry was held at the Municipal Hall, last week, with reference to an application of the Town Council for sanction to borrow the sum of £1,600 for the erection of a refuse destructor at their sewage farm at Newbold. It was stated that the contractors for the removal of refuse had to find places for its disposal as best they could, and it was now necessary for some alteration of the present system. The quantity of refuse to be disposed of was about 10,000 tons a year, and it had been decided that a Horsfall destructor would be most suitable for their purpose.

**Halifax Tramways Extensions.**—A special meeting of the Halifax Town Council was held last Wednesday evening to consider a report of the Tramways Committee recommending that Parliamentary powers be obtained to enable the carrying out of important tramways extensions at a cost of about £160,000. Nine new routes were suggested, and after some discussion it was agreed to include them in the Parliamentary Bill. It was further resolved to add a line from Salterhebble up Jubilee Road to Siddal; a line up New Bank to Southowram; a line from Illingworth to Causeway Foot; and a line up Parkinson Lane. The Council also decided to seek power to double the present line in King Cross Lane, from the top of West Parade to Parkinson Lane, which they had previously been prevented from accomplishing owing to the opposition of private owners.

**Westminster Improvement Scheme.**—A meeting of the Vestry of St. Margaret and St. John, Westminster, was held last Wednesday evening at the Westminster Town Hall, under the presidency of Mr. J. G. Chapple. There was a long discussion upon an adjourned motion by Mr. E. W. Granville-Smith, L.C.C., approving the general outlines of the Westminster improvement scheme, and pledging

the Vestry to recommend to the Council of the new Borough of Westminster, as constituted by the London Government Bill, the contribution of a sum not exceeding £100,000. In the course of the discussion an amendment was moved by Mr. Hayter, L.C.C., and accepted by the mover and seconder of the original resolution. The motion as amended was agreed to on a division by thirty-three votes to nineteen. It assented to the contribution of £100,000, subject to the understanding (1) that the charge falls upon the area of Westminster as reconstituted by the London Government Bill of this Session, and that provision be made in the County Council's Bill to this effect; and (2) that the space on the east of Millbank Street from Victoria Tower Garden to Lambeth Bridge be converted into a public garden.

**Proposed Extensive Improvements at Preston.**—Some time ago the Preston Corporation applied to the Local Government Board for permission to borrow £42,000 for street improvements and sewerage, £2,645 for fire brigade purposes, and £1,500 for slaughterhouse extensions. Mr. W. A. Ducat recently held an inquiry into the application. Mr. H. Hamer, the Town Clerk, and Mr. Cookson, the borough surveyor, presented the plans, and Mr. Hamer stated that the roads which it was very necessary to modernise were Fylde Road, Watery Lane, North Road from Ormskirck Road to Garstang Road, Bow Lane and Spring Street, Lancaster Road, Moor Lane, Ribbleson Lane from Deepdale Road to Acrogate Lane, Newhall Lane from Stanley Street to Acrogate Lane, and Park Road. With regard to the fire brigade proposals, he stated that it was absolutely necessary that there should be practically a rebuilding. The Town Clerk dealt next with the slaughter-house proposals, and stated that the provision at the present abattoir was for sixty cattle and 300 sheep. Then there were the Co-operative Stores and the slaughter-houses in the town, which gave accommodation for seventy cattle and 300 sheep, making the total accommodation 130 cattle and 600 sheep. It was considered now that the requirements of the town necessitated provision for 160 cattle and 800 sheep. No opposition was offered to any of the proposals.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.		WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—				
July	21	Downpatrick—Slatting Porch, &c.	Guardians	J. W. Montgomery, Clerk, Board Room, Downpatrick.
"	21	Leeds—Brewhouse	B. R. Child	A. E. Dixon, 5, Park-lane, Leeds.
"	21	North End—Master's Residence.	Burton Dasset School Board	F. P. Trepass, 8, Jury-street, Warwick.
"	21	Sutton Coldfield—Depôt	Corporation	W. A. H. Clarry, Engineer, Town Hall, Sutton Coldfield.
"	21	Carlisle—Enlargement, &c., of Head Post Office	H.M. Commissioners of Works	H.M. Office of Works, Storey's-gate, S.W.
"	21	Wolverhampton—Pupil Teachers' Centre...	School Board...	T. H. Fleming, 102, Darlington-street, Wolverhampton.
"	22	Beccles—Engine-House, &c.	N. W. Pells	N. W. Pells, Castle Steam-Roller Flour Mills, Beccles.
"	22	Bella Vista—Detached Villa		E. Foster, Architect, Bella Vista.
"	22	Boarden Barn Hill—Villa and Stables	Sansom	P. Sherwin, Architect, Manchester-st., Boarden Barn Hill.
"	22	Robin Hood's Bay—Additions, &c., to Police Station	School Board	W. Stead, County Surveyor, Northallerton.
"	22	St. Ewe, Cornwall—Schools, &c.		W. Giles, Architect, South House, St. Austel.
"	22	Tredegar—Alterations, &c., to Chapel		Rev. J. Turner, 1, Rawlinson-terrace, Tredegar.
"	22	Winchester—Additions to Girls' School		T. Stopher, 57, High-street, Winchester.
"	24	Clifton Dartmouth Hardness—Cart Shed	Corporation	T. O. Veale, Town Hall, Clifton Dartmouth Hardness.
"	24	Croydon—Cowsheds	Town Council	R. M. Chart and Son, Union Bank-chambers, Katharine-street, Croydon.
"	24	Glasgow—Tenements	Corporation	City Engineer, 61, Cochrane street, Glasgow.
"	24	Mynyddislwyn, Wales—Additions to School	School Board	E. L. Roberts, Architect, Abercarn.
"	24	Dartford—Technical Schools, &c.	Urban District Council	D. F. Brow, Organising Secretary, Summerhill-rd., Dartford.
"	25	London, W.C.—Electric Light Generating Station	County Council	Architect's Department, 13, Spring-gardens, S.W.
"	25	Croydon—6 Underground Conveniences	Town Council	Borough Engineer, Town Hall, Croydon.
"	25	Lewisham—Enlargement of Town Hall	Board of Works	The Surveyors, Town Hall, Lewisham.
"	25	Hastings—School	School Board	Arthur Wells, Architect, Queen's Chambers, Hastings.
"	25	Whitechapel—Enlargement of Fire Station	London County Council	Architect's Department, 13, Spring Gardens, S.W.
"	25	Exmouth—Villa Residence	Captain Arthur	P. Kerley, Architect, Exmouth.
"	25	Hucclecote—Schools	School Board	W. B. Wood, 2, Queen-street, Gloucester.
"	26	Grimsby—Warehouse	Great Central Railway Co.	Engineer, London Road Station, Manchester.
"	26	Sheffield—Roofing, &c.	Great Central Railway Co.	Engineer, London Road Station, Manchester.
"	26	Pontardawe, Wales—Enlarging, &c. School	Llangunike School Board	W. W. William, 63, Wind-street, Swansea.
"	26	Sunderland—Artizans' Dwellings	Corporation	Borough Surveyor, Town Hall, Sunderland.
"	26	Sunderland—Pulling-down Buildings	Corporation	Borough Surveyor, Town Hall, Sunderland.
"	27	Brighton—Alterations, &c., to Library, Museum, &c.		F. J. C. May, Town Hall, Brighton.
"	27	Fleeton, Peterborough—Schools	Baptist Church Trustees	W. Boyer, Architect, Cowgate, Peterborough.
"	27	Southwark Bank—School, &c.		J. F. Walsh, Lanes, and Yorks., Bank-chambers, Halifax.
"	27	Whitechurch—2 Sanitary Spurs to Wards	Union Guardians	Chancellor and Hill, 12, Jewry-street Winchester.
"	27	London, E.—Public Baths	Poplar Vestry	Messrs. Clarkson, 136, High-street, Poplar.
"	31	Kingston-on-Thames—Alterations to Workhouse	Guardians	W. H. Hope, Union Offices, Portsmouth-road, Kingston.
Aug.	1	Hereford—Extension of Platform Roofing	L. & N.W. and G.W. Railway Cos.	Joint Engineer, Woodside Station, Birkenhead.
"	1	Petersfield—Laundry	Laundry Company Limited	A. J. C. Muckarness, High-street, Petersfield.
"	1	Kingswinford—Partition at School	Urban District School Board	A. Price, Clerk, 34, Moor-street, Brierley Hill.
"	1	Marsh Brook, Salop—Four Cottages	L. & N.W. and G.W. Railway Cos.	Joint Engineer, Shrewsbury Station.
"	1	Strabane, Ireland—Business Premises		A. Scott, The Hotel, Garrison.



COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—Continued.</b>			
Aug. 1	Swansea—Electricity Generating Station ... ..	Corporation ... ..	Kincaid, Waller, & Manville, 29, Gt. George-st., Westminster.
" 8	Sheffield—Car Sheds ... ..	Tramways Committee ... ..	C. F. Wike, City Surveyor, Town Hall, Sheffield.
" 10	Mayford—Alterations to Swimming Bath ... ..	London County Council ... ..	Architect's Department, 13, Spring Gardens, S.W.
" 15	Tramers—Additions to Science and Art School ... ..	Birkenhead Corporation ... ..	C. Brownridge, Borough Engineer, Town Hall, Birkenhead.
" 18	Filey—Coastguard Buildings ... ..	.....	Coastguard Station, Filey.
" 18	Kirkwall, Orkney, N.B.—Coastguard Buildings ... ..	.....	Watch Room, Coastguard Station, Kirkwall, N.B.
" 21	Southend—Technical Schools and Fire Station ... ..	Corporation ... ..	W. H. Snow, Town Clerk, Southend-on-Sea.
Sept. 1	Malmö, Sweden—Electric Works ... ..	.....	Clerk, Gasworks, Malmö.
" 12	Croydon—Superstructure of Asylum ... ..	Town Council... ..	Borough Engineer, Town Hall, Croydon.
<b>ENGINEERING—</b>			
July 21	London, S.W.—Rolling Stock ... ..	Uganda Railway Committee ... ..	Crown Agents for the Colonies, Downing-street, S.W.
" 22	Brighouse—Electric Lighting Plant ... ..	Sewage Scheme Committee ... ..	Corporation Electric Lighting Works, Hall-st., Brighouse.
" 22	Poole—Hopper Barge ... ..	Harbour Commissioners ... ..	S. Dickinson, Clerk, Fish-street, Poole.
" 22	Glasgow—Electric Traction Plant ... ..	Corporation ... ..	J. Young, 83, Kenfield-street, Glasgow.
" 24	Guildford—Reconstruction of Bridge ... ..	Rural District Council ... ..	N. Lailey, 16, Great George-street, Westminster.
" 24	Manchester—Coarse Screens for Sewage Works... ..	Rivers Committee ... ..	Secretary, Rivers Department, Town Hall, Manchester.
" 24	Nelson—Lightning Conductor ... ..	Health Committee ... ..	B. Ball, Borough Engineer, Town Hall, Nelson.
" 24	Stafford—Girder Bridge ... ..	Corporation ... ..	W. Blackshaw, Borough Engineer, Borough Hall, Stafford.
" 24	Tunbridge Wells—Filter Beds ... ..	Corporation ... ..	Borough Surveyor, Town Hall, Tunbridge Wells.
" 24	Sunderland—Tramway Electrical Equipment ... ..	Corporation ... ..	J. F. C. Snell, Engineer, Dunning-street, Sunderland.
" 24	Wembley-by-Harrow—Sludge Press and Receiver ... ..	Urban District Council ... ..	H. H. Humphreys, 332, High-road, Kilburn.
" 25	Hastings—Electric Mains ... ..	Corporation ... ..	L. Andrews, Engineer, Electric Light Works, Hastings.
" 25	London, E.—Bridge between Infirmary Blocks ... ..	Whitechapel Guardians ... ..	W. Vallance, Clerk, Vallance-road, London, E.
" 25	Normanton—Widening Line ... ..	Lancashire and Yorkshire Railway Co. ... ..	Engineer, Hunt's Bank, Manchester.
" 25	Wapping—Alterations to Swing Bridge ... ..	London County Council ... ..	Engineer's Department, Spring Gardens, S.W.
" 25	Brighouse—Widening Line ... ..	Lanes. and Yorks. Railway Co. ... ..	Engineer, Hunt's Bank, Manchester.
" 26	Ulverston—Waterworks ... ..	Rural District Council ... ..	W. F. T. Molineux, 3, Benson-street, Ulverston.
" 26	Christiansburg—Harbour Works ... ..	Harbour Management ... ..	Commercial Department, Foreign Office, S.W.
" 26	London, E.—Saw Bench ... ..	Guardians of Poplar Union ... ..	Superintendent of Works, Workhouse, High-st., Poplar, E.
" 26	Felixstowe—Ventilating Shaft, &c. ... ..	Urban District Council ... ..	Surveyor, Town Hall, Felixstowe.
" 26	Rinsey, Breage, Cornwall—Well ... ..	.....	Giles, Rinsey Farm, Breage, Cornwall.
" 26	Uttoxeter—Borehole and Laying Pipes ... ..	Urban District Council ... ..	J. E. Wilcox, Union-chambers, Temple-row, Birmingham.
" 29	Lydney—Water Mains, &c. ... ..	Rural District Council ... ..	C. E. Walker, Engineer to Council, Chepstow.
" 31	Rosehearty—Flushing Tanks ... ..	Town Council... ..	W. Watt, 57, Pittsboro-street, Rosehearty.
" 31	Hapton—Electric Lighting ... ..	Parish Council ... ..	E. O'Shaughnessy, Clerk, 23, St. Anne's-terrace, Padiham.
" 31	Rio de Janeiro—Lease of Railways ... ..	Brazilian Government ... ..	Commercial Department, Foreign Office, S.W.
Aug. 1	Acton and Wycombe—Railway ... ..	Great Western Railway Co. ... ..	Engineer, Paddington Station, London.
" 1	Keyham—Steel Viaduct ... ..	Great Western Railway Co. ... ..	Engineer, Paddington Station, W.
" 1	Denbigh—Electric Lighting Asylum ... ..	Committee of Visitors ... ..	T. L. Miller, 7, Tower-buildings, N. Water-st., Liverpool.
" 1	Wrighton Vale, Somerset—Light Railway ... ..	Great Western Railway Co. ... ..	Engineer, Paddington Station, W.
" 8	Salford—Eight Dynamos ... ..	Rural District Council ... ..	L. C. Evans, Town Clerk, Town Hall, Salford.
" 9	Kingswood Hill, near Bristol—Pumping Plant ... ..	West Gloucestershire Water Co. ... ..	E. D. Marten, The Birches, Codsall, Wolverhampton.
" 9	St. Albans—Laundry Machinery ... ..	Workhouse Guardians ... ..	H. E. Hansell, Architect, Granville-road, St. Albans.
" 31	London, S.W.—Crane, &c. ... ..	St. Mary's Vestry, Battersea ... ..	Vestry Clerk, Municipal-buildings, Lavender-hill, S.W.
<b>IRON AND STEEL—</b>			
July 24	London, S.W.—Steel Sections for Pipes ... ..	Uganda Railway Committee ... ..	Crown Agents for the Colonies, Downing-street, S.W.
" 24	Nelson—Iron Fence ... ..	Markets and Parks Committee ... ..	B. Ball, Borough Engineer, Town Hall, Nelson.
" 25	London, E.C.—Tyres, Axles, &c. ... ..	Southern Mahattha Railway Co., Ltd... ..	E. Z. Thornton, 46, Queen Anne's-gate, S.W.
" 26	London, E.C.—Railway Stores... ..	East Indian Railway Co. ... ..	A. P. Dunstan, Secretary, Nicholas-lane, E.C.
" 26	Ulverston—Cast-iron Pipes ... ..	Rural District Council ... ..	W. F. Molineux, 3, Benson-street, Ulverston.
<b>PAINTING AND PLUMBING—</b>			
July 21	Downpatrick—Painting... ..	Union District Council ... ..	J. W. Montgomery, Clerk, Workhouse, Downpatrick.
" 22	Downpatrick—Repairing Pumps, &c. ... ..	Rural District Council ... ..	J. W. Montgomery, Sanitary Executive Officer, Council Office, Downpatrick.
" 22	Billinghay, Lincs.—Painting, &c., Schools ... ..	Urban District School Board ... ..	N. E. Snow, Clerk, Sleaford.
" 26	Allerton Bywater—Colour-washings Walls, &c. ... ..	School Board ... ..	T. Wilson, Solicitor, Castleford.
" 26	Boston—Painting Workhouse Buildings ... ..	Guardians ... ..	J. M. Simpson, 28, Wide-bargate, Boston.
" 26	Cradley Heath—Painting, &c., School ... ..	Rowley Regis School Board ... ..	D. Wright, Board's Offices, Lawrence-lane, Old Hill.
Aug. 1	Luton—Painting, &c. ... ..	Town Council... ..	Borough Surveyor, Town Hall, Luton.
<b>ROADS—</b>			
July 24	Middlesbrough—Cemetery Works ... ..	Cemeteries Committee ... ..	F. Baker, Engineer, Municipal-buildings, Middlesbrough.
" 24	Londonderry—Granite Setts... ..	Council... ..	City Surveyor, Guildhall, Londonderry.
" 24	London, W.—Wood Pavement ... ..	Vestry of St. George, Hanover-square... ..	Surveyor, 1, Pimlico-road, S.W.
" 25	Bromley, Kent—Making-up Roads ... ..	Urban District Council ... ..	Surveyor, Offices, Bromley, Kent.
" 25	Willesden—Road Making and Paving Works ... ..	District Council ... ..	O. C. Robson, Public Offices, Kilburn, N.W.
" 25	Lewisham, S.E.—Kerbing and Tarpaving ... ..	Board of Works ... ..	Surveyor, Town Hall, Catford, S.E.
" 25	Sudbury, Suffolk—Granite ... ..	Melford Rural District Council ... ..	W. Carver, Surveyor, Long Melford, Suffolk.
" 25	West Ham—Making-up Streets ... ..	Corporation ... ..	Lewis Angell, Surveyor, Town Hall, Stratford, E.
" 26	Greenwich—Laying Yorkshire Stone ... ..	Board of Works ... ..	Offices, 141, Greenwich-road, S.E.
" 28	Walthamstow—Concrete Flags ... ..	Urban District Council ... ..	G. W. Holmes, Town Hall, Walthamstow.
Aug. 1	Litherland—Completing Passages ... ..	Urban District Council ... ..	W. B. Garton, 25, Sefton-road, Litherland.
" 1	Luton—Paving Works, &c. ... ..	Town Council... ..	Borough Surveyor, Town Hall, Luton.
" 2	South Shields—Road Work ... ..	Corporation ... ..	S. E. Burgess, Borough Surveyor, Chapter-row, South Shields.
" 5	Sunderland—Materials ... ..	Rural District Council ... ..	T. Young, Surveyor, Council's Offices, Sunderland.
<b>SANITARY—</b>			
July 21	Inverurie—Pipe Sewers ... ..	.....	Jenkins and Marr, 16, Bridge-street, Aberdeen.
" 21	New Brompton—Sanitary Fittings to Schools ... ..	Trustees of Wesleyan Schools ... ..	E. J. Hammond, Architect, New Brompton.
" 21	Wolvile—Sewerage Works ... ..	Hartshorne and Seale R.D.C. ... ..	H. Walker, Newcastle-chambers, Angel-row, Nottingham.
" 22	Denton—Sewers ... ..	Council... ..	W. J. Lomax, 11, Fold-street, Bolton.
" 22	Johnshaven, Scotland—Drainage Works ... ..	Kincardineshire County Council ... ..	J. Graham, County Sanitary Inspector, Johnshaven.
" 24	Aldeburgh, Suffolk—Sewers, &c. ... ..	Corporation ... ..	J. Mansergh, 5, Victoria-street, Westminster.
" 24	Bangor—Sewers, &c. ... ..	Sanitary Committee ... ..	J. Gill, Borough Surveyor, Bangor.
" 25	Croydon—Sewers, &c. ... ..	Town Council... ..	Borough Engineer, Town Hall, Croydon.
" 25	West Ham—Sewers ... ..	Corporation ... ..	L. Angell, Surveyor, Town Hall, Stratford, E.
" 25	Bromley—Sewerage Works ... ..	Urban District Council ... ..	The Surveyor, Council Offices, Bromley, Kent.
" 25	South Elmsall—Removal of Refuse ... ..	Hemsworth Rural District Council ... ..	T. Wilson, Clerk to Parish Council, South Elmsall.
" 26	Ure Bank—Sewerage ... ..	Ripon Rural District Council ... ..	C. F. P. Edmundson, Clerk to Guardians, Ripon.
" 27	Valletta—Stoneware Pipes, &c. ... ..	.....	Crown Agents for the Colonies, Downing-street, S.W.
" 27	Basingstoke—Sewer ... ..	Works Committee ... ..	G. Fittin, Borough Surveyor, Town Hall, Basingstoke.
" 27	Wendover, Bucks.—Sewers, &c. ... ..	Wycombe Rural District Council ... ..	J. Taylor, Sons, & S. Crimp, 27, Gt. George-st., Westminster.
" 28	London, S.W.—Latrine and W.C. Accommodation ... ..	Kensington and Chelsea School District Corporation ... ..	C. Sharp, 11, Old Queen-street, S.W.
Aug. 2	South Shields—Sewer Work ... ..	.....	S. E. Burgess, Boro' Engineer, Chapter-row, South Shields.

COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
July 27	Plumstead—Municipal Buildings and Public Library ... ..	£100, £75, £50... ..	Edwin Hughes, Clerk, Vestry Hall, Maxey-road, Plumstead.
Aug. 1	Halifax—Twelve Shops ... ..	£50, £25 ... ..	Barstow and Midgley, Solicitors, 8, Harrison-road, Halifax.
" 17	Batford—Sewerage and Sewerage Disposal Schemes ... ..	.....	C. J. Spencer, Clerk to R.D.C., Public Offices, Batford, Notts.
" 17	Kirkcaldy—Joint Infectious Diseases Hospital ... ..	.....	A. Beveridge, District Clerk, Kirkcaldy.
Sept. 1	Otley—Isolation Hospital ... ..	£30, £15 ... ..	C. V. Newstead, Clerk, Wharfedale Union Joint Hospital Committee, Union Offices, Boroughgate, Otley.
" 1	Workington—Town Hall ... ..	£40, £20, £10 ... ..	W. L. Eagles, Borough Surveyor, Town Hall, Workington.
" 30	Tunbridge Wells—Designs in Tunbridge Ware ... ..	£3 3s., £2 2s., £1 1s... ..	Technical Education Committee.



## Property and Land Sales.

To Land and Building Societies, Builders, Speculators, and Others.

**NEW SOUTHGATE**, about three-quarters of a mile from New Southgate Station (Great Northern Railway), and seven miles from London.—A very eligible Freehold Building Estate of about 47 acres, 2 roods, 30 poles (land tax redeemed), adapted for the erection of moderate-class houses, with roads and sewers recently constructed through the chief portion of the land, and the plans for the remainder passed by the District Council. For sale under a special Act of Parliament, and ripe for immediate development. Messrs.

**DEBENHAM, TEWSON, FARMER**, and **BRIDGEWATER** will **SELL**, at the Mart, on **TUESDAY, JULY 25th**, at **TWO**, in One Lot, with possession, this valuable **FREEHOLD BUILDING ESTATE**. The property is ornamentally timbered, commands pleasant views, and has an undulated surface; it is believed to contain brick earth and, in parts, gravel. A new 50ft. road has been made from the principal entrance to the estate from Oakleigh-road; also two other new roads leading from East Barnet-lane, an old-established parish road to which the property has extensive frontages. It abuts on the west upon the Great Northern Railway, and it is probable that arrangements may be made with the Company for a station on the estate. There is every facility for drainage and gas and water supplies. On the estate is a red brick and tiled residence of good elevation, known as The Retreat, with premises adjoining; also a stone and slated building formerly used as a chapel. There are capital services of trains from New Southgate Station to King's Cross, Moorgate-street, and Broad-street, and Oakleigh Park Station is also within a convenient distance of the northern portion of the estate.

Particulars and plans of Messrs. C. and S. HARRISON and Co., Solicitors, 19, Bedford-row, W.C.; and of the AUCTIONEERS, 80, Cheapside.

SALE DAYS for the Year 1899.

Messrs.

**FAREBROTHER, ELLIS, EGERTON**, **BREACH, GALSORTHY**, and **CO.** beg to announce that the undermentioned dates have been fixed for their AUCTIONS of FREEHOLD, Copyhold, and Leasehold ESTATES, Reversions, Shares, Life Interests, &c., at the AUCTION MART, Tokenhouse-yard, E.C.

Other appointments for intermediate Sales will also be arranged.

Thursday, July 20	Thursday, Oct. 26
Thursday, July 27	Thursday, Nov. 16
Thursday, Aug. 3	Thursday, Nov. 23
Thursday, Aug. 10	Thursday, Dec. 7
Thursday, Sept. 21	Thursday, Dec. 14
Thursday, Oct. 12	

Messrs. **FAREBROTHER, ELLIS, and CO.** publish in the advertisement columns of "The Times," "Standard," and "Morning Post," every Saturday a list of their forthcoming Sales by Auction. They also issue on the first of every month a schedule of properties to be let or sold, comprising landed and residential estates, farms, freehold and leasehold houses, City offices and warehouses, ground-rents, and investments generally, which will be forwarded free of charge on application.—No. 29, Fleet-street, Temple Bar, and 18, Old Broad-street, E.C.

By order of the Executors of the late owner.

The Valuable **FREEHOLD PROPERTY** known as "Royal Dockyard Wharf," Lower Woolwich-road, S.E., together with the Fixed Plant and Machinery and Goodwill of the old-established **TIMBER and BUILDERS' MERCHANT'S BUSINESS**, as a going concern, and the **LEASE** of the adjacent **Waterside PREMISES**, known as "Mast Pond Wharf," will be offered for **SALE** by Public AUCTION in One Lot by

**MESSRS. BRADSHAW, BROWN, and CO.** at the MART, Tokenhouse-yard, E.C., on **TUESDAY, JULY 25th**, 1899, at One o'clock precisely.

The Freehold Property (built by the British Government) has a granite embankment to the River Thames of about 400ft.; and a frontage of about 442ft. to Lower Woolwich-road, with three cartway entrances therefrom, and comprises an area of about 2½ acres. Two granite-paved slipways, one 235ft. long, 53ft. wide.

"Mast Pond Wharf" has a frontage to the river of about 100ft., and contains an area of about three-quarters of an acre.

The Lease has an unexpired term of about seven years, at a rental of £150 per annum.

**JOHN BARLETT, Esq.**, Solicitor, 26, Bush-lane, E.C.; Auctioneers' Offices, Billiter-square Buildings, E.C.; and Millwall, E.

**SPRING-GROVE ESTATE, ISLEWORTH, MIDDLESEX** (overlooking Osterley Park, the seat of Earl Jersey).—126 acres of **FREEHOLD BUILDING LAND**.

**MESSRS. GREEN & SON** beg to announce that, the above PROPERTY not having been sold at the recent Auction, they are prepared to enter into negotiations for same as a whole, free of restrictions, or sub-divided as follows: 53 acres adjoining Osterley Park Station; 48 acres adjoining Osterley Park Station; 6½ acres with building frontages of 2860ft.; 7½ acres with building frontages of 2917ft.; 9½ acres with building frontages of 1317ft. Portions of the property would be let at ground rents to be arranged.

Particulars, plans, &c., of Messrs. **GREEN and SON**, Auctioneers and Surveyors, 28 and 29, St. Swithin's-lane, London, E.C.

**Preliminary Notice.**—Higham's Park, Walthamstow.—The very valuable Freehold Building Estate of nearly 40 acres, known as Higham's Farm, beautifully situated, contiguous to the well-known Higham's Park woods and lake (one of the prettiest portions of Epping Forest), adjoining Woodford Golf Links, and seven minutes from the railway station, the whole being admirably adapted for development as a residential building estate.

**MESSRS. KEMSLEY** will **SELL** the above by AUCTION, in one lot, at the MART, on **FRIDAY, July 21**, at two.

Particulars, in due course, of **R. Oliver, Esq.**, Solicitor, 1, Corbet-court, E.C., and of the Auctioneers, 41, Bishopsgate-street Within, E.C., and at Woodford-green and Romford.

**ANSELL and MALLOWS**, Architectural Draughtsmen and Quantity Surveyors, 21, Buckingham-street, Strand, W.C.

**R.I.B.A. EXAMS. PREPARATION**, personally or by correspondence, in three, six, nine, or twelve months' courses. Architectural Lending Library. Special three months' finishing courses.—For full particulars apply to Messrs. **HOWGATE and BOND, Associates R.I.B.A.**, Perchard House, 70, Gower-street, W.C. (close to the British Museum).

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## APPOINTMENTS VACANT.

The charge for Advertisements under this heading is 1s. 6d. per insertion not exceeding four lines, and 6d. per line afterwards, prepaid. Three insertions may be had for the price of two.

**WANTED** by a leading firm of builders in the West of England, **FIRST CLASS GENERAL FOREMAN**; One accustomed to Terra-Cotta preferred.—Write, stating salary required, to "Builders," care of Messrs. Deacons, 154, Leadenhall-street, E.C.

**ARCHITECTURAL ASSISTANT** (age 24-30), for Municipal Engineer's Office; temporary, probable duration 18 months. Salary 55s. per week.—Applications stating age, and enclosing three copy test, to be sent to Box 1135, BUILDERS' JOURNAL Office, 1

## APPOINTMENTS WANTED.

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**YOUNG ARCHITECT, A.R.I.B.A.**, ASSISTS in the PREPARATION OF DRAWINGS, TRACINGS, &c., at his own Office. **G. SCOREE**, 23, Newman-street, W.

**QUANTITIES** prepared, specifications written, works measured, and variations adjusted by reliable London Surveyor. Over twenty years' experience. Special terms by arrangement.—"Surveyor," office of the BUILDERS' JOURNAL, 24

**PLUMBER, GAS, HOT-WATER FITTER** wants SITUATION; good references; seven years in city firm.—"E. M.," 55, Rehere-street, Goswell-road, E.C.

**GENERAL FOREMAN** wants a Job, Carpenter and Joiner. General knowledge of all branches, well up in structural alteration, public-house work; town or country. Good references.—"J. B.," 66, Acre-road, Kingston-on-Thames.

**ABLE ASSISTANCE.** WORKING and DETAIL DRAWINGS. DESIGNS, PERSPECTIVES, TRACINGS. QUANTITIES and SPECIFICATIONS. DIFFICULTIES of PRACTICE advised upon. **F. BRENT**, 34, Great James-street, W.C. 51

**ARCHITECT**, having spare time, is willing to undertake preparation of Working Drawings, Tracings or Perspectives. Terms moderate.—**Roberts**, 19, Lynton-road, Kilburn.

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Patent No. 814.

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IMPROVED

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THESE IMPROVED TOOLS for stone-dressing combine lightness with great efficiency in working, with perfect freedom from the annoyance of bad sharpening, tempering, or other defects. They possess *double* the advantages of the AMERICAN TOOTHED TOOL, by having, in a handy and convenient form, double teeth, or a chisel and "tooling drove" combined, the efficiency and economy of which a PRACTICAL MAN WILL SETTLE IN A FEW MINUTES.

The outstanding merits of the MULTIPLEX STONE-CUTTER are its simplicity and economy. They are simple in construction. The Handles are made with a slot (see below) in which the Cutter is inserted, and the Tool is complete. There are no screws or joints in the Handle to give trouble in fixing or removing the Cutter. They are economical. By the use of these Tools a great saving is effected, all the loss of time, trouble, and expense incurred in getting the ordinary tools sharpened being avoided.

Owing to the handiness and durability of these Tools they are in constant use throughout the whole of the United Kingdom.

Two sample Tools, with six Cutters, sent carriage free to any address in the Kingdom on receipt of a Postal Order for 2s. to the

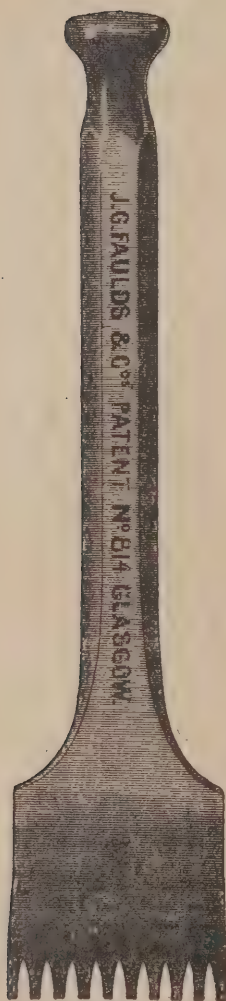
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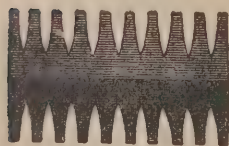
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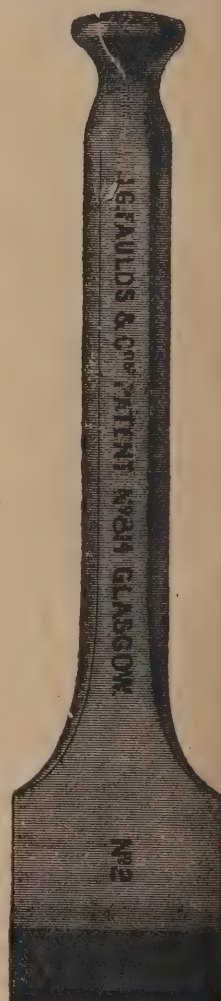
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Reversible Cutter,  
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JULY 26, 1899.

No. CCXXXIII.

## An Architectural Causerie.

**Architecture in the Novel:** In the second article of this series it was pointed out that one of the characteristics of the art of Thomas Hardy is the inimitable and almost uncanny way in which he makes us feel the presence of the past—how in a novel concerned with the emotions and thoughts of to-day, there hover around and about the scenes of the story, the atmosphere of an earlier age. Mediæval architecture and mediæval times are suggested by the backgrounds rather than by any description of place or building. In "Jude the Obscure" there is not only this suggestive and thoughtful method of treatment, but scenes are pictured in which actual and ancient structures of the Middle Ages are so interwoven with the thread of the tale that an appreciation becomes difficult without a keen interest in the social life of the past few centuries. Although these old times are so cunningly pictured, Thomas Hardy is too great an artist to ignore the effects brought about by time and the "restorer." Here is a passage descriptive of a Wessex village, which is probably not altogether an impersonal one, for behind the word picture there seems to lurk the likes and dislikes of the author. To paraphrase the words of Zola, it is the outward expression of the villagers' life seen through the medium of a temperament: "The village was as old-fashioned as it was small, and it rested in the lap of an undulating upland adjoining the North Wessex downs. Many of the thatched and dormered dwelling houses had been pulled down of late years, and many trees felled on the green. Above all, the original church, hump-backed, wood-turreted, and quaintly hipped, had been taken down, and either cracked up into heaps of road metal in the lane, or utilised as pig-stye walls, garden seats, guard stones to fences, and rockeries in the flower beds of the neighbourhood. In place of it a tall new building of German Gothic design, unfamiliar to English eyes, had been erected on a new piece of ground by a certain obliterator of historic records who had run down from London and back in a day. The site whereon so long had stood the ancient temple to the Christian divinities was not even recorded on the green and level grass plot that had immemorably been the churchyard, the obliterated graves being commemorated by ninepenny cast-iron crosses, warranted to last five years." Just as in "The girl from the Farm," referred to in a former article, the young girl glorifies in her imagination the town of Allington, from whence the stranger had come with tidings of its wonders, so the boy Jude, from the top rung of the ladder, sees the city to which in later years he is to wend his way. Like the prophet Ezekiel of Holy Scriptures, brought into the land of Israel and set upon a high place, he has a vision in answer to his prayer. From that time onward, as he goes about his daily work, he is always beholding "the city of light." It becomes deeply imprinted upon his mind, and acquires "a tangibility, a permanence, a hold upon his life," that never leaves him through all the troubles and sufferings which he passes in his unsuccessful endeavours

to reach the ideals of his youth. It was towards evening "when he repassed the barn to go back to Marygreen." Ascending the ladder, "he seated himself and waited. In the course of ten or fifteen minutes the thinning mist dissolved altogether from the eastern horizon as it had already done elsewhere, and about a quarter of an hour before the time of sunset the westward clouds parted, the sun's position being partially uncovered, and the beams streaming out in visible lines between two bars of slatey cloud. The boy immediately looked back in the old direction. Some way within the limits of the stretch of landscape points of light like the topaz gleamed. The air increased in transparency with the lapse of minutes, till the topaz points showed themselves to be the vanes, windows, wet roof slates, and other shining

beheld, the size and cubits thereof. John, on the other hand, is overcome by the richness of the materials. Both, like Jude, see the cities of their dream from a high place, and like the boy frame in their mind's eye their idea of a beautiful city. Some years after this event Jude enters the city of Christminster carrying in addition to his material possessions some considerable knowledge of the worthies—who had lived their youths behind its walls—and of his craft, which was that of a stonemason; resting at the brow of a little hill, he saw the city for the first time, with its "grey stone walls and dun roofs," the city of his vision which he thought would assist him to the fulfilment of his hopes. He realised later that such help would not come to such as he in his lifetime. "I love the place," he says,



LA FONTAINE SAINT MICHAEL AT PARIS. (See p. 367).

spots upon the spires, domes, freestone work, and varied outlines that were faintly revealed. It was Christminster unquestionably, either directly seen or mirrored in the peculiar atmosphere. Jude gazed on and on till the windows and vanes lost their shine, going out almost suddenly like extinguished candles. The vague city became veiled in mist. Turning to the west he saw the sun had disappeared. The foreground had grown funereally dark, and near objects put on the hues and shapes of chimeras." It is impossible to avoid comparing this vision of Christminster, which Jude likened to the Heavenly Jerusalem, with those seen by the prophet Ezekiel and the apostle John. Ezekiel seems to have been impressed principally with the measurements of the buildings he

after he had learned how little Christminster cared for him, "although I know how it hates all men like me—the so-called self-taught—how it scorns our laboured acquisitions, when it should be the first to respect them—how it sneers at our false quantities and mispronunciations; nevertheless it is the centre of the universe to me; nothing can alter that." In time Jude, with his love for the ancient stones of Christminster, came to read its history: "The numberless architectural pages around he read, naturally less as by an artist critic of their forms than as an artisan and comrade of the dead handicraftsman. He examined the mouldings, stroked them as one who knew their beginning, said they were difficult or easy in the working, had taken little or much time, were trying to



the arm or convenient to the tool. Cruelties, insults, had he perceived been inflicted on the aged erections. They were wounded, broken, sloughing off their outer shape in the deadly struggle against years, weather, and man."

G. LL. M.

### London's Great Railway Stations.

THE announcement that the terminus stations at Waterloo and Victoria are to be greatly enlarged has surprised no one, but it has drawn attention once more to the overcrowding of London. When the great railways were started, it was considered imperative that the termini should be in the suburbs, a policy of which London Bridge, Waterloo, and the old Bishopsgate station of the "Eastern Counties" were the most conspicuous examples; it was a mistake for which both the companies concerned and the public have since paid pretty heavily. The growth of Waterloo station coincides with the enormous expansion of the south-western suburbs; the greater part, indeed, of the new traffic of the last few years is suburban. Architecturally the terminus question is of importance because it involves the opening of new streets or the widening of old ones as approaches, and the building of a vast hotel which generally screens the station and makes or mars the neighbourhood. The extension of Waterloo, though at present considered as purely utilitarian, will some day assume importance of another kind; this will be when the Surrey side of the Thames is embanked, a work sure to be followed by the opening up of new approaches to the river. Victoria station is—if the Brighton Railway Company has its way—to be extended right up to Eccleston Bridge, and there is some question of a possible absorption of the Grosvenor Hotel. Of all the London termini, this is in one sense the most important, for it stands at the threshold of one of the few districts in the capital which have been systematically laid out and designed in a single style of architecture, with great Mansard roofs rising nobly against the sky; a mistake here would spoil a very fine quarter. Perhaps no building has been more criticised than the great station at St. Pancras. A large part of "Somers Town" was swept away to make room for it, so completely that the name is now seldom heard. The hotel was originally designed by Sir George Gilbert Scott for the Foreign Office; rejected by Lord Palmerston, it was eventually carried out in a totally different quarter and for a totally different purpose. The public blames its architect, yet here is a Gothic palace intended to overlook the woods and waters of St. James's Park, taken as it were bodily to the Euston Road. The long lines of pointed windows are not without beauty, but the building seems too high and bulky and dwarfs the whole quarter. This, however, is no wonder, for, to suit the high level of the Midland Railway, the vast structure had to be raised on a lofty terrace, isolating it from its surroundings with which it will never harmonise. Perhaps the busiest terminus in London is that of Liverpool Street. Here again, the architectural effect has been marred by an administrative mistake, for the station buildings are in light brickwork with white stone dressings, and the style is Gothic, whilst the hotel is in red brick and exhibits a species of free Renaissance. Both are good in their way, but the effect of their juxtaposition is extremely harsh.

J. C. P.

## On Reflection.

### An Art Gallery for Newcastle.

LAST Thursday the portrait of Alderman W. H. Stephenson, which has been subscribed for by the public in appreciation of the alderman's manifold services to the community, was publicly unveiled on the walls of the council chamber in the Town Hall, Newcastle-on-Tyne. The commission to paint the portrait was placed in the hands of Mr. Ralph Hedley, and he has well fulfilled his task. Earl Grey made the presentation. Alderman Stephenson has been intimately connected with the history of the city for the past thirty years, and has thrice been made mayor. He recently made the valuable suggestion that an art gallery, open to the general public, should be established in the city in commemoration of the fifth centenary of the Shrievalty of Newcastle. Pending the establishment of a permanent home he has helped to get the large portion of the Victoria Lending Library reserved for works of art, and it is here that his portrait will be placed when other works of art have been obtained to accompany it; until such time the portrait is housed in the Council Chamber. Mr. James Hall, writing to the "Newcastle Daily Chronicle," suggests that it would be more appropriate to establish an industrial museum, such as the mechanical museum at South Kensington, in which might be treasured the great inventions of the men of the district. This suggestion might well be carried out by having a combined art gallery and industrial museum, and would, doubtless, be supported by the wealthy manufacturers of the district. The only picture gallery of any importance within a reasonable distance of the city is that at Barnard Castle, where the superb collection of works of art left by the late Mrs. Bowes (Countess Montalbo) is housed. This gallery can, however, only be enjoyed by a small percentage of people, owing to its out-of-the-way position. The establishment of an art gallery is, therefore, very necessary for Newcastle, and it seems highly probable that something definite will now be done to meet the want. The importance of the city warrants a building of considerable architectural pretensions.

AN important judgment was lately given in the Leicester County Court by His Honour Judge Wightman-Wood which has construed and defined the precise

limit and conditions to be understood by the term "a building 30ft. in height," a term which has long been a much-vexed question in the administration of the Workmen's Compensation Act. As is well known, a "building 30ft. in height" is included along with factories and other places as one of the conditions under which the benefits of the Act may be obtained. A workman, for instance, who falls or otherwise injures himself on a building 30ft. or more high, in the course of his duties, can claim compensation under the Act, but he cannot make such a claim if the building in question should measure but 29ft.  $\frac{7}{8}$ in. in height. Such incongruities must, of course, appear in all Acts or regulations wherein a specified limit has to be stated, and the difficulties which have arisen on this matter and the number of cases involving this point which have come before the courts, have not turned upon any matter of actual inches in the measurement of the building, but upon the meaning of the term "a building 30ft. in height." The question whether men who fell less than 30ft. from a building 30ft. high, who injured themselves in working on the lower portion of a building, part of which was 30ft. high, and many others have successfully arisen, but have produced no clear statement as to the construction to be put on the terms to which we are referring. The case tried before the Leicester County Court judge was the claim of a labourer who had fallen less than 30ft. into the area of a building, which was, in another part, over 30ft. high, *measured from the area*, but less than the prescribed height measured from the ground or street pavement level. In giving his decision, the judge construed this ambiguity of the Act as follows: That the height of a building should for the purposes of the Act be measured from the point when the walls can first be seen above ground in a general view. The height of a building, therefore, having open areas may be computed from the pavement line of those areas. Any other construction of the Act the judge pointed out would lead to such an anomalous absurdity as that it should be necessary to say that a man fell 33ft. from a building 27ft. high. The judge also decided that the whole of a building, any part of which was 30ft. high, might be considered to be such a building as entitled a workman injured thereon to the benefits offered by the Workmen's Compensation Act. It must be considered that this construction of the Act is reasonable and fair, and it is well that some distinct understanding is at last come to as to the meaning which may be applied to this much debated phase of the Act.

## OUR COMPETITION.

### PREMIUMS AND DRAWINGS.

CHEQUES HAVE BEEN DESPATCHED TO-DAY to the winners of the three premiums in our recent Competition for designs for a Country House. The amounts of the Cheques and the names of the winners are:

20 GUINEAS.—HERBERT L. NORTH, B.A.

10 GUINEAS.—HARRY PERCY SHARPE.

4 GUINEAS.—WILLIAM MITCHELL.

This, as we said before, will conclude our responsibility in the matter. We hope soon to be able to announce the decision of the client for whom the Competition was instituted with regard to which of the designs he intends to have carried out.

We have received several requests for permission to see the designs from clients wishing to build houses of a similar character to that competed for, and probably other competitors will be commissioned to carry out their designs. We have, therefore, not yet returned the designs, but if any competitors would prefer to have their drawings back without delay, we will do so on receipt of application for them.





SCULPTURE PANEL SHOWING TREATMENT OF TYMPANUM.

## SCULPTURE IN RELATION TO ARCHITECTURE.\*

By T. DUNCAN RHIND.

IN speaking of sculpture, it is my intention to take figure work more than ornament, although the latter is only too often not carefully enough thought out.

Sculpture and architecture are always associated as the two arts which should go hand-in-hand; in the early and middle ages this was the case, as we can see from the buildings of those times. In the present era of commercial enterprise, they certainly do not go hand-in-hand. Looking at all the many big competitions that have taken place in the last few years, we study the premiated designs in one or other of our periodicals and find in nearly all the designs, grand groups of sculpture, showing fine figure friezes and other adornments associated with this art; but look a little closer, and what do we find? A small—very small—side note, saying that the sculpture and carving are not included in the probable estimate. And so it holds throughout, at least in this country, when an important commission is placed in one of our foremost architect's hands, there is always without exception a cutting down of the original estimates and Sculpture is the first thing that is knocked off. One can imagine the effect on the minds of a present day committee when their architect instead of submitting to them an estimate made up of prices of so much per cap and rate per foot of egg and dart + 150 swags at so many shillings a piece, asks them to give him permission to place a commission for say four groups of sculpture at £1,000 or £2,000 a-piece. They would begin to think the worry of the big commission had begun to tell on his brain. But this feeling is due a good deal to the sculptors themselves. In our art circles and in the public mind too, the notion is that the highest branch of the sculptors' art consists in the occasional execution of a portrait bust, varied now and again by an ideal figure 2ft. or 3ft. in height, and that anything outside of such routine is beneath the dignity of the great sculptor, and belongs more to the

domain of the monumental mason or the decorative stone carver.

I take this again to be very largely due to the class of work which for the last twenty or thirty years has formed the leading feature in the sculptural exhibits of Scottish Academy Annual Exhibition, where on the shelf allotted to this depressing show, bust after bust, and small ideal figure after small ideal figure, have succeeded and vied with each other in monotonous and wearying iteration. When we go to a great art centre like Paris, and visit the Salon or other art collections there, how obviously and forcibly the truth is brought home to us that the grand field of the sculptor lies, not in the productions of what Mr. Ruskin very aptly terms "furniture sculpture," but in the designing and execution of sculpture to adorn public buildings, monuments to immortalise great men and commemorate brave deeds or great events in national history.

That our painters and sculptors know little, and care less, about architecture is an undisputed and melancholy fact; but to those of them who have studied their art, it should be abundantly patent that in their arts when used in relation to architecture—that is, in executing sculptured decorations and mural paintings—lies the best sphere of the sculptors' and painters' usefulness, so far as the education of the masses is concerned. And they should remember that it is in connection with works of this character, works that did not appeal to cliques or classes, but to humanity at large, that all the great artists, men such as Michael Angelo, are known to us of this generation. Of course, the sculptors here may not be altogether to blame for their lack of appreciation of what I consider is their true art through the fact that in the ranks of our academicians, sculptors are, like architects, in a very small minority. The Scotch Academy's fatherly regard is lavished largely and munificently upon painting, and no space seems wide enough to allow of the paternal embrace. Towards sculpture and architecture it turns a cold, unsympathetic eye, and treats them as insignificant brats of the muses family, and keeps the one for filling up odd corners or making a centre to a group of palms, and the other is granted the high honour of the condemned cell, which is generally more appreciated as being a corner where at last the poor victim gets a rest from the glaring heterogeneous mass of colour as shown by some of our up-to-date impressionists.

To look at the earlier examples there is of course the one example that stands *par excellence* above all others, the Parthenon Frieze. There is no other piece of sculpture that there are more replicas of in our schools of art, the young sculptor is taught to look up to and revere it, and it is, one should always remember, sculpture that has been executed in relation to architecture; and not only that, but from authorities on the subject I understand that it was executed in position. But this was the case with most of the Greek sculpture. There is not, I think, one piece of antique sculpture that has been handed down to us that was not carefully studied as to its architectural surroundings, and the greater number were used in connection with one or other of the temples.

There can be no doubt whatever that they saw the desirability and necessity of surrounding themselves by work pregnant with thought and great in beauty, which would attract and please the eye and elevate and instruct the mind.

In their sculpture as in their architecture the Greeks had a very characteristic form. One of their greatest beauties is the way in which they manipulated folds of drapery generally clinging rather closely to the figure; it was modelled in a series of repeating lines, forming and carrying out the lines of the composition. This is very strongly shown in some of their bas-reliefs. In their ornament, the same thing applied. Their use of the flower, egg and dart, or acanthus leaf is always marked by what we might call the *liney* effect. Then the Greek also used that fine combination of figure and ornamental sculpture, the caryatide, as seen at the Temple of Erechtheum. It is in the South of Europe that sculpture seems to have had its home. In the earlier centuries, when we come from Greece eastwards, we strike Italy, the very name of whose capital—Rome—seems to spell sculpture whenever it is mentioned. The sculpture in the early ages here designed and executed by the Romans differed from the Greeks in the same respects as their architecture. It was not so refined, and much bolder. Their figure work poses were often very intricate and more voluptuous in comparison with the always simple pose of the Greek figure. Their drapery effects had the same characteristic crossing folds, and generally did not following the lines of the composition. As in figure, so it was with their ornament;

\* A paper read before the Edinburgh Architectural Society.



the acanthus was broader, not so liney and spiky; egg and dart rounder, and so on throughout.

As regards the later mediæval work, it is in the south of Europe generally and in Italy more particularly that the best examples will be found. There we have sculpture in all its different phases, the ideal figure or group, used in connection with architecture, and such grand and impressive work as the Ghiberti gates and the work of Michael Angelo and the later Renaissance. In Michael Angelo we have a man whose every name acts as a crushing blow against any argument that architectural sculpture is not the highest branch of that art. We all know the glorious memorials he has left behind, such as the façade of the Spado Palace at Rome, where the delicate and refined treatment of the sculptural decorations seems so much a part of the whole design, that one cannot help seeing how much sculpture may do for a building when properly used.

Another great master of this time was Della Robbia; his Madonna subjects and pediments have held their own long after their originator left the scenes of his labours. How miserably poor and insignificant is some of our present work of the same character and material when compared with it.

Coming further north, we find in France that the mediæval sculpture is lavished on the ecclesiastical buildings. How beautiful are some of the mediæval French doorways in their sculpture. At Chartres and Reims Cathedrals the classic influence is shown especially on the figure work. At Rheims the drapery has been treated in the exact manner of the ancient Greeks—a mass of what one might term lines running to a point. In later times we get more evidence of how the French have considered sculpture as almost indispensable in working out a design, as seen in the work at the Louvre. In one pavilion there is not one piece of the sculptural decoration that one can call a stock design from the fine frieze work up to the crowning group on the top pediment; the whole is studied in proportion to the surrounding architecture, and although there is a fair amount of sculpture on the front, yet it does not seem in any way overloaded. Therein, I think, lies the great secret of sculptural decoration.

Before departing from this period of work I should like to call attention to one of the finest examples of a fountain, of which there are so many in Paris, where architecture and sculpture have been blended together and produced a grand result—that is, the Fountain of St. Michael.

Germany is not so good as France. The sculptural decoration there is always to my mind carelessly designed as regards proportion in relation to the surrounding details, though some of the heraldic and ribbon work, as seen at Nuremburg, is exceptionally fine.

In our own country we have not many examples of the older work, most of them having been destroyed by the religious fanatics of our middle ages, though when we come a little later we have some very fine examples, such as Wren's London Churches. He, unappreciated as he was at the time, knew the value of sculpture in knowing where *not* to put it; and some of the ornamental and figure work of this period was well studied and artistic. When we come to Adam's work in a later age we find a distinct Greek tendency, the ornament having much less projection and more refinement. In Edinburgh there are many interesting examples of it. I am sure few can enter St. Andrew Square without unconsciously letting their eyes rest on that stately building, the British Linen Company Bank, one of the few public buildings in Edinburgh that you feel to be completed. Not overloaded by any means with sculpture, it appeals in its entirety to the intelligent eye as a work designed by an artist who thoroughly understood the position which sculpture should occupy in relation to architecture. I may also just mention as other satisfactory examples the Commercial Bank in George Street, with its imposing and completed pediment; and lastly, but not least by any means, the College of Physicians, in Queen Street, with its chaste and refined

façade. This always impresses me as a beautiful example of the result obtained when architecture and sculpture are harmoniously wedded together. Of course, it goes without saying that sculpture outside a building should tell in symbolical, yet easily understood language the uses contemplated for the building. But we have one or two examples which do not convey to anyone the idea of what they represent. One example in particular is the Scotch Academy Galleries. Think how different the case would be if each pediment were filled with sculpture, a frieze behind the columns or groups on pedestals at the corners of the building, giving an unmistakable indication of the purposes and the uses for which the building was erected. I have reason to believe that such sculptural treatment formed part of the architect's original idea. The very fact that this building—one which surely of all others should have been completed with all the appropriate sculptural accessories—has been left so conspicuously plain shows the spirit of indifference towards sculpture that was abroad at the time when it was being built, an indifference which unfortunately has been perpetuated to the present day. Had this building been erected in France for a similar purpose our Continental neighbours would have employed the best sculptors to breathe the breath of life into its great voiceless, silent body; in one pediment most likely introducing a group of figures representing Painting, another representing Sculpture, and a third Architecture, while Literature and Music would be illustrated as indicating the source whence so many artists draw the inspiration that gives birth to and animates the work of their hands. Such work as I have just described is what all true sculptors would consider the best of work—work on which a French sculptor of the highest excellence would put forth his greatest effort to produce something worthy of the subject and creditable to his name.

If it should seem to some that I am, on the subject of sculpture, unduly extolling our friends across the Channel, let me remind them that art has made itself a tremendous power in that nation; a National Association of artists, architects, sculptors, and painters arrange artistic matters. Just imagine the National Opera House and the Hotel de Ville providing work for some two hundred of the best sculptors, and you will understand the magnificent groups with which these buildings are adorned, an experience I hardly expect we, in this country, will ever gain. Of course, I know the architecture is perhaps not what everyone likes, but it is always good academic stuff and not the production of a man who is ignorant of half the essential points of design, backed up by officials who have no ideas on art, except economy. An example of this was not long ago brought to light in connection with the Museum of Science and Art in Chambers Street, where, when it was proposed to go on with the sculpture for the building, the Government officials in London tried to regain possession of the money which had been put aside for the purpose by the original votes for the building, doubtless striving to appear before the chiefs of their departments as careful economists in saving a sum which had already been voted by Government. Fortunately, the strong protests that were made prevailed, and the edifice was reluctantly allowed to be completed by the execution of the allegorical sculpture according to the original design. Authorities seem to ignore the fact that we can be taught by the sense of sight as well as by the sense of hearing, the one sense being kept in co-operation with the other. A leading sculptor, speaking on this subject at the Art Congress held in Edinburgh in 1889, said:—"It can by no means be maintained that the present condition of things is the fault of architects. On the contrary, all those who have relation with them have their sympathies constantly appealed to when they see the architect's designs destroyed, his ideas defaced, his intentions of beauty made mean and voiceless, by the unintelligent decrees of local committees and governments, whose barren utilitarianism and vicious economy are utterly opposed to the purposes of art."

Well, we have had a good deal of what should not be done. Let us look at what examples we have of the present time, and I think it will be agreed that a modern combination of architecture and sculpture is found Dr. Anderson's National Portrait Gallery in Queen Street, Edinburgh. Here we have not only a fitting home for the examples of Scottish art, but it tells its story to visitors. They see all the famous Scotchmen of bygone years placed in the outside niches and they will be handed down to future generations by these memorials when other artistic works of a different kind may be lost or destroyed. At the principal doorway are the allegorical panels of the Arts, the Scots' Arms, and, crowning all, the figure of Scotland, shielding and encouraging art. Let us hope that this building will do something towards educating those in authority who have the ordering of our public edifices in the direction of their ceasing to deny to architecture the company of her sister art.

In London there has been erected quite recently one of the best examples of architecture and sculpture, both excellently designed and executed, and the whole combined producing a dignified and harmonious design, the only fault being that the site is so placed that the public will pass quite near it without knowing that at their side is a lesson on art which would perhaps teach them to think with a recognised authority on art who says, "A great building decorated in a great manner is the supreme achievement of art. It is greater than any isolated picture or statue, and I am convinced that it is even also greater than any building, however great, which is not so decorated." I refer to the Institute of Chartered Accountants in Moorgate Place, London. The sculpture here was executed by two of our foremost sculptors, Hamo Thornycroft, R.A., and the late Harry Bates, A.R.A., as noted in the letterpress of the book published on this building; it says: "A dignified building of monumental character has been the chief aim, and, as in all classic buildings, a certain uniformity and regularity of parts is observed in the main features; but interest and vitality are secured by the change of detail and variation of the smaller parts." The upper storey is regularly divided by an order of a plain and substantial character, through the lower part of which passes a rich frieze, 140 feet in length. This frieze, the work of Mr. Hamo Thornycroft, R.A., representing those varied interests which look to the chartered accountants for financial guidance and order, is one of the chief features of the building, and forms an integral part of the design. It is a noble work, ably conceived and admirably carried out, and should go far towards encouraging a more extensive use of really good sculpture by sculptors of high standing. There are also the fine carved groups by Bates, and the figure of justice crowning the oriel by Thornycroft.

Another class of work on which I would like to say something is monumental sculpture, as exemplified by the public monuments in our streets and squares. During the first half of the present century the regulation monument consisted of the representative figure attired in classic costume, while in later years it was modelled in ordinary dress, nearly all the statues being erected on pedestals as plain and severe as it is possible to design. In the hands of an artist like Chantrey this was usually a success, as that very fine statue of Pitt, standing at the junction of Frederick Street with George Street shows. But, as a rule, I consider it forms as most uninteresting type of memorial. And this is more especially the case where, repeated so often as it is in Edinburgh, it becomes monotonous in the highest degree, and consequently attracts the attention of the inhabitants little more than the lamp posts they are constantly passing. When a memorial statue is erected in Edinburgh, all interest seems to vanish the moment it is placed in its allotted position. This is probably owing to the difficulty of making a portrait-statue, standing in an isolated position, of a decorative and interesting character. I presume that most people, who have given the subject any consideration, will be ready to admit that a



much greater variety of treatment in this matter is loudly called for, and that it would be far more artistic and effective were groups of sculpture erected to commemorate the deeds of the men we wish to immortalise. But, unfortunately, committees rise up and assert themselves, and lay down such laws to the sculptor as leave him little margin in which to give effect to his own ideas.

When it was first resolved to commemorate the worth and eminence of the late Dr. Wm. Chambers, as an individual, a public man and a citizen of Edinburgh, the first proposal was that this should be done by erecting a monument bearing his recumbent effigy in a memorial chapel at St. Giles' Cathedral. One would have thought that there could not have been a more beautifully appropriate method of commemorating the man to whom the restoration of the cathedral

the way, and his ignorance, backed up by doggedness, scored a most deplorable success. He scouted as preposterous the beautiful and becoming idea I have described, and triumphantly clenched and drove home his victory with the Doric exclamation, "What ever saw Dr. Chambers lyin' on his back?"

(To be concluded.)

**Workmen's Dwellings for Highgate.**—Tenders, amounting to £13,639, have been accepted for the erection of sixty artisans' dwellings at Highgate by the Hornsey District Council. The total cost of the scheme, including land and roads, will be £16,700.

**A New School for Boys at Worcester** has been erected at a cost of about £1,300. The main school-room is 45ft. by 22ft., and provides

## BENEDETTO PISTRUCCI.

### NOTES ON THE WORK OF AN ITALIAN ARTIST ONCE HONOURED IN ENGLAND.

By ALFREDO MELANI.

ENGLAND has often honoured loyally the genius of Italian art. For instance, there is Inigo Jones, admirer of Palladio and the diffuser in England of the Palladian theories; and then more recently Sir Christopher Wren has induced among English people a continual interest in Italian art. Perhaps it may be asked what Wren had to do with it, and I reply that Wren had a great deal to do with it, inasmuch as the architect of St. Paul's was very strongly impressed by Cavalier Bernienio



THE MADONNA AND CHILD: BY LUCA DELLA ROBBIA. NOW IN THE NATIONAL MUSEUM, FLORENCE.

is entirely due. By removing the obnoxious partition walls, and disinterring the original details from the uncouth and cumbrous dirt in which by ignorance and carelessness they had been buried, and thus presenting a resurrected cathedral wearing all its grand original lineaments, he did a work for his country and for the city which will ensure for him the remembrance and gratitude of many and many a generation to come. Now what could possibly have been a more fitting consummation to taking a friend (but a stranger to the city) on a tour of inspection through the "long-drawn aisle and fretted vault" than finally to turn to the memorial chapel, and, pointing to the monument, say: "There is the effigy of the large-minded, open-handed man who made it the crowning work of his long and well-spent life to sweep from the building around you the accumulations of centuries of Vandalism and ignorance, and gave it back to his country in all its pristine grandeur and purity of detail."

But the inevitable committeeman stopped

accommodation for ninety-six boys. There are two classrooms, 22ft. by 15ft., giving accommodation for thirty-two boys. Access to these class-rooms is obtained from the school-ground opposite the school-room. At the opposite end to the class-rooms there are a cap-room and a lavatory, approached from the entrance vestibule. Messrs. Henry Rowe and Sons, were the architects, and Messrs. J. Wood and Sons, of Worcester, were the builders.

**Mr. Thomas Bonnar** died last Wednesday at his house, 7, Ann Street, Edinburgh. He was the senior partner of the firm of Thomas Bonnar and Son, decorators and art designers, of 58, George Street, Edinburgh. He had a keen appreciation and knowledge of art in all its aspects. In addition to papers contributed to antiquarian, architectural and art societies, Mr. Bonnar wrote a biography of George Meikle Kemp, the designer of the Scott Monument, who was his uncle by marriage. Latterly he took an active part in obtaining the charter of the Imperial Institute of British Decorators. He was in his fifty-ninth year.

when he met him at Paris; and, again, Wren studied under Pietro Lescot and Filiberto de l'Orme. Having said this, it is quite unnecessary to speak of Dante Gabriel Rossetti, or of Ruskin's enthusiasm for Venice, or yet of the great interest of the English in the conservation of Italian artistic patrimony. My object here is to recall briefly an artist who it is possible might be forgotten in England, as he has almost been in Italy. I speak of Benedetto Pistrucci who gained a great reputation in the English metropolis, where he left diverse works of inexpressible taste and fineness.

Benedetto Pistrucci was born at Rome on May 24th, 1783. He was a pupil of the celebrated Academy of St. Luke, in which taught Raffaello Mengs, an enemy and an implacable critic of the Rococo style.

Even in his first steps upon the highway of art Pistrucci was a very able modeller, and at the age of seventeen he could engrave in hard stone as none other at that age. Whilst still very young he executed with such precision the great cameo representing the Apollo and





ARCO DE SANTA MARIA, BURGOS.

of Augustus, that it was believed by Baron Denon, of the Imperial Museum of Paris, to have been a work of great value.

It was Bonelli who wished to bring Pistrucci to England, but circumstances obliged the Roman artist to remain longer in Paris, where he had the modelling in wax of the retreat of the great Emperor.

Three months after the catastrophe of Waterloo, and the entry of the allies into Paris, Pistrucci resolved to go to London, where, by good fortune, he was commissioned to execute a portrait of Sir Joseph Banks. I say by good fortune, because, while in the house of Sir Joseph Banks, he met the celebrated antiquary, Payne Knight, who, in the presence of Pistrucci, judged a certain cameo belonging to Sir Joseph as being of Greek workmanship. "See here," remarked the antiquary, "this is how the Grecian artist worked; how beautiful, how delicately executed!" To such exclamations as these Pistrucci could not resist a smile. "But, my dear sir," said he, "you are mistaken; this cameo was executed by me, and if you just glance between the leaves which are interlaced in a crown upon the head of Flora, you will see the initials of my name." In spite of this, however, the antiquary would not be persuaded. "Very well, then," replied Pistrucci, "I will do another like it," which he did; and that cameo was acquired by Mr. Henry Hamilton, and Payne Knight was convinced. In his will Payne Knight left to the British Museum the whole of his priceless collection, among which is the celebrated cameo of Flora, which even now is so much admired as a piece of Greek workmanship.

In 1816 the Roman artist, at the request of the head of the Mint, cut in hard stone the originals of the dies for the coinage. After this he was nominated head engraver of the Mint, and executed the dies for the coinage of George III. and George IV.

Pistrucci succeeded admirably as a die engraver, yet it was only in 1816 that he set up as such.

In consequence of the great victory of 1815, George IV. ordered that a medal should be struck in commemoration of so memorable an event. Flaxman, who enjoyed a stupendous

renown, was chosen to design the medal. Pistrucci was given the work of engraving it. Either from pride or the laudable sentiment of dignity, the head engraver of the Mint refused the work of engraving the medal of Flaxman. It seemed to him that he should be not only the engraver but the designer of the medal; and he designed a model. This gave so much satisfaction that the Roman artist was charged with its execution, and was afterwards nominated chief engraver of the medals to His Britannic Majesty. However, some hitch occurred which spoiled the effect of the triumph, so that the work, though commenced, was soon abandoned by Pistrucci, who in 1839 left the English capital and returned to his own country. Whilst in Rome he was offered the post of chief engraver of the Roman Mint. Very shortly after this, however, he returned to London. But he no longer enjoyed that satisfaction which, in the past, rendered so genial his sojourn in that great and populous city.

Therefore he retired to Windsor, where, far from the roar of the metropolis, he took up once more his work upon the Waterloo medal. Circumstances, however, had changed, and the public regarded the battle of Waterloo under a different light. George IV. had intended to have the medal executed in gold and to offer a model to each of the Allied Sovereigns, and also to the great commanders, Wellington and Blücher. Others were to be struck in silver and others in bronze. An account of this celebrated work was given in the "Illustrated London News" of June 22nd, 1861.

Pistrucci worked at Windsor for about twelve years—years of close application, since the Roman artist was accustomed to work fourteen hours per day. He also practised statuary, executing several busts in marble, among which was one of the Count Pozzo di Borgo, Russian Ambassador in London, and also one of the Duke of Wellington.

Benedetto Pistrucci died at Englefield Green on September 16th, 1855. At Rome, in the Academy of St. Luke, may be seen the casts of the Waterloo medal. Many of his precious wax models are in the possession of his family, to whom many offers have been made for their purchase. Among the many groups and

figures in wax, I must mention Napoleon III., the Coronation of Queen Victoria, George IV. in Ireland, George IV. in Hanover, the Empress Eugenie in England, and an equestrian figure of George IV.

Such was then, briefly, Benedetto Pistrucci, who lived in an epoch when the classical taste was universally robust, and of which taste he was one of the greatest representatives in England.

## SPAIN:

### Picturesque Cities & Monasteries in the North.

#### No. IX.—BURGOS.

By F. HAMILTON JACKSON, R.B.A.

(Continued from page 355, No. CCXXXII.)

In the house of the Conde de Villariego, which was built in the tenth century, the great Alvaro de Luna was imprisoned. In the town hall, a building in the Plaza Mayor, is a collection of antiquities, which include some ancient metal and enamel work, Moorish arches, and sculptured tombs, and the bones of the Cid enclosed in a sort of urn made of walnut wood. The principal gate of the city is the Arco de Santa Maria. It is a portion of the ancient Gothic fortifications, and was decorated by Charles V. with his own statue, surrounded by five others of Burgalese worthies, grouped in niches. These worthies are Diego Porcelos, who founded the city in 884, Fernan Gonzalez, The Cid, Nuño Rasura, and Lain Calvo, the last two judges in the period before Gonzalez.

Passing out under this gate and crossing the river Arlanzon, one reaches the Esplanade, gardens laid out with walks under the shade of tall trees. A little way on, following the road to Valladolid, the convent of Las Huelgas appears. It was founded by Alfonso VIII. in 1180 for his Queen, Leonora, daughter of Henry II. of England, on the site of some pleasure grounds, whence the name. The church was consecrated in 1279, and was the work of Ferdinand III. Santo. It is good, pure Gothic, but has been much added to and altered. It contains a gilded iron pulpit, destitute of structural steps, with repoussé panels, from which St. Vincent Ferrers preached. The church also contains the banner of Alfonso VIII. which waved at Las Navas de Tolosa. Through a grating one looks into the nun's choir. At high mass on Sundays the nuns may be seen seated in the finely carved stalls, but not at any other time. The abbesses used to be most powerful, and were inferior in dignity to no one save the queen, having power of life and death over the dwellers on their extensive property. The building was intended as a burial house for the Kings of Castile, and here are the tombs of Alfonso VII., Alfonso VIII. and his queen, Alfonso the Wise, Enrique I., and others. In this church took place the marriage of the Infante de la Cerda with Blanche, daughter of St. Louis of France, at which were present the Kings of Castile, Aragon, and Navarre, the Moorish King of Granada, Prince Edward of England (son of Henry III.), the Empress of Constantinople, the French Dauphin, and twenty or thirty other crowned heads and princes. In the interior is the Chapel of Belem, which is built in a sort of transition style, between Gothic and Moorish, and a cloister called La Claustrella, a part of the founder's palace. There is in the chapel of Santiago a figure of the saint, which moves its arms by means of springs, which on some occasions placed the crown on the heads of Spanish monarchs, and in the sacristy is a pretty little fountain in the centre of a room.

Turning the other way, at a distance of about two miles, is La Cartuja, the Carthusian convent of Miraflores, which dates from 1441. It was built on the site of a palace of Enrique III. by his son Juan II. for a royal burial place, but having been burnt in 1452, was restored by Enrique IV., and finished in



1488 by Isabella the Catholic, after designs by Juan de Colonia in florid Gothic. She also raised the magnificent *retablo*, the *Coro*, and the sepulchre of her parents, which is one of the wonders of the world. The sculptor was Maestro Gil de Siloe, the father of the Diego who designed the staircase in the cathedral, and it was completed in 1493. Here lie Juan II. and his second wife, Isabella, and his son the Infante Alonso, who died at Cardenosa in 1470, thus opening the succession to his sister. The Infante kneels at a *priedieu*, in front of a richly-diapered background. He is within a niche, which is bordered by an elaborately designed lacework of vine stems and leaves, amid which little genii disport themselves. On the base are angels supporting coats of arms, and rising in front of the effigy and occupying niches flanking the arch are smaller statues. Above the arched niche the mouldings are still more enriched, and the tympanum has a small group sculptured in high relief. The point of the arch, which is ogee in shape and enriched with wonderful crockets, rises to a sort of pinnacle, as do the side piers, all bearing figure sculpture, the space behind them being filled with panelling. It is protected by a wrought iron grille, enriched with armorial bearings in colour.

In front of the high altar is the monument to Ferdinand II. and Isabella, carved in white marble, and looking as if it had been made yesterday, save for the damage wrought by the French. The figures lie side by side, separated by a crested and pierced cloison, with a canopy at the head and figures of lions at the feet of each. The plateau upon which they rest is of the shape of two inter-penetrating squares set anglewise to each other, and on the projecting angles are placed small seated figures. From each inward angle rises a small shaft bearing a standing figure. All round runs a border most elaborately carved and undercut, with the same *motif* of vine leaves and little genii, with shields and little angels at the angles. The base is also elaborately worked with

figures in niches under beautiful canopies, and with pierced buttresses, and lions supporting coats of arms and royal crowns. In the principal figures the detail of embroidery and pattern on the robes and jewel work in collar and border is most exquisitely rendered, the whole work being just on the line which divides extravagance in detail from extreme richness. In this case the heads and hands of the figures are so well and delicately worked that the flesh keeps its place, and the eye goes direct to the most important part. The whole monument is surrounded with a well designed railing, with standards of pierced work at each angle surmounted by prickets for tapers. It is crowned with a pierced cresting of most beautiful design, enriched with coats of arms at intervals, which are coloured.

The *reredos*, though on the whole an impressive work, and containing a specially fine crucifix, is scarcely architectonic enough in its design, and looks almost as if made at two different times. The crucifix is surrounded by a circle of angels, the quarters being filled in with scenes from the Passion. The rest is covered with subjects contained in circles, and with many standing figures beneath canopies, the whole being surrounded by an elaborate, lace-like border interrupted at the top by more figures under canopies. It was finished in 1499, and gilt with gold brought from America in the second journey of Columbus. The fine prior's stall was carved by Martin Sanchez in 1488. The church is divided into three parts by *rejas*—the monks' choir, the lay brothers' choir, and the part allotted to the people.

**British Archaeological Association.**—The members of the British Archaeological Association met in congress for several days last week, at Buxton, and visited various places of interest around the town, addresses being given on the history and architecture of each. Papers on various subjects were also read.

## ARCHITECT v. ARTIST.\*

By J. JERMAN, F.R.I.B.A.

IN this short paper my desire is to investigate the particular object in view which actuates many architects of the present day in tacking on a lot of subordinate titles and qualifying expressions to the distinguished and comprehensive title of "Architect." There are many varieties of qualifying titles, all, I assume, more or less intended to "catch the eye" of the public; in plain language, an aggressive advertisement pure and simple. It would be out of place in a short paper to attempt to state and consider the number of appellations actually used by the architectural and allied professions. Before going into actual definitions, one may refer to the rigid line drawn by artists themselves in the departments of graphic art. A sculptor, a painter, an engraver, as a rule, considers his own department sufficient for his concentrated efforts. I say as a rule, because there have been, and always will be, notable examples of men, great in every sense of the word, whose powers have enabled them to excel in more than one of the recognised branches of art. I need only here refer to Raphael and Michael Angelo as notable examples. In these modern days, however,

### A Professional Man's Particular Sphere of Work

becomes more limited, and he is, more or less, strictly tied down to the sphere of his own operations, the only opportunities of individualising his work, as a rule, being to specialise in one or more departments. This tendency to specialise, as far as my experience is concerned, limits the practice, and prevents the specialist from standing on all fours with the man who has an "all round" knowledge of the profes-

\* A paper read before the Devon and Exeter Architectural Society.



MONUMENT TO DON JUAN AND ISABELLA OF PORTUGAL, LA CARTUJA, BURGOS.



sion. I hold, however, that it is not possible to separate the divisions of an architect's work. The preparation of drawings and designs, however skilfully and artistically executed, does not make an architect, and *per contra*, the knowledge of construction and business matters alone does not fulfil the conditions necessary for making an architect. It may be urged that no person would seriously contend that one who has the necessary skill in draughtsmanship alone would pose as an architect—yet there are many who would leave the "business" part of the professional work in other hands—holding that the working out of formulae, the nature of materials, the superintendence of work and the preparation of accounts can well be left to others. This tone of mind seems to be the prevailing one amongst many who wish to rid our profession of

#### The "Business" Side.

It seems to me that such a position is untenable, and that there is no parallel to such a position in other professions. It may be urged

to detract from the important duties following on the development and execution of any building. The public have a very general idea that making "catchy" designs is the chief qualification of an architect, often forgetting the serious responsibilities devolving on architects in bringing their work to a successful issue; it is probably not such

#### "Taking" Work,

but infinitely more professional in the best sense of the word. It may be well at this stage to see what are the respective descriptions of each:—

*Architect.* We are told that the word means chief of the works, *i.e.*, chief builder. He is a professor of the art of building, skilled in planning and designing buildings. One writer observes "that the study of Architecture is to be ranked among the highest branches of human knowledge, has dignified the excellent among its professors, and has enlisted in its ranks enlightened men from every class of society." Grinlt says: "an architect is a

such who practise a liberal art after a liberal manner. From this it appears to me that

#### An Architect Should be an Artist

in the broad sense of the word, seeing that he is a professor of one of the fine arts, which he practises as an art; he does not mix up his work with trade, or lower it by assimilating it with the most sordid parts of commerce. In this sense "Artist" is a comprehensive term including many professions studying the fine arts, of which architecture is one. Why then introduce the term at all, seeing that the exact position of an architect is so well defined? Cannot we be content with the comprehensive title of architect? Is it necessary to throw a sort of glamour over the title by incorporating artist with architect, as if that could add lustre to an already famous title? The fact is apparent that the profession of architecture is a complex one, and I cannot do better to illustrate this than by giving the pith of

#### Mr. Norman Shaw's Argument

in his famous letter to the *Times*, summarised as follows:—That architecture is an art or precisely the same footing as painting and sculpture; that artistic qualities make an architect; that the scientific construction already exists in the engineer, the business man in the surveyor and commission agent.

So that if the public want an "artistic" work of architecture, they must employ three men, not one as hitherto, namely:—The artist to design, the engineer to construct, and the surveyor to do the "business." But which architect is not clear!

All this "one-sided" view of an architect's work is reflected in the exhibitions of the Royal Academy, where it is exceedingly rare to see an architectural drawing, the exhibit for the most part being by

#### Professional Draughtsmen

("artists"), who work for architects, men, pictures, more or less true to the results. To return to our subject: Architecture is an art as well as a science, and the architect who holds he is chiefly artist, or all artist, ignores the factor which helps to make the whole.

To sum up:—I wish to state (1) that additions or qualifications to the title of architect is altogether unnecessary; (2) that the assumption of such titles as artist-architect or specialist, on the purely *art* side of the profession, detracts from the dignity and completeness of the title of architect; (3) that the artistic faculty, fully allied to trained constructive ability, together give the qualifications necessary for making a true architect.



DRAWN BY F. HAMILTON JACKSON, R.B.A.

that engineers sub-divide their work into mechanical, electrical, naval, and other sorts of engineers. This, however, is only a differentiation of work, all based on the same leading principles. But the divorce, the entire separation of the smaller branches of our profession, seems to me to be an impossible condition, as the preparation of the design and the execution thereof, is, and should be, inseparable if one master mind is to fulfil the whole work. The tendency to treat the designer as an independent and superior individual unnecessarily puffs up one phase of our work and endeavours

person competent to design and superintend the execution of any building."

*Artist.* Now as to the artist, he is broadly speaking the professor of an art, and is distinguished from the workman. An artist is one who professes or practises a liberal art; hence the mason, carpenter, smith, decorator, cabinet-maker, are artisans, but the architect, sculptor, painter, engraver, &c., are artists.

The word "Artist" has been used in rather a loose manner, and it follows that the honourable title of artist should only be allowed to

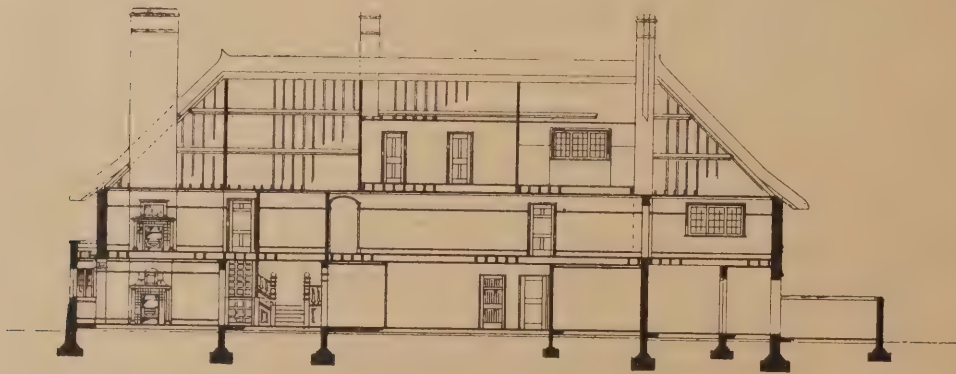
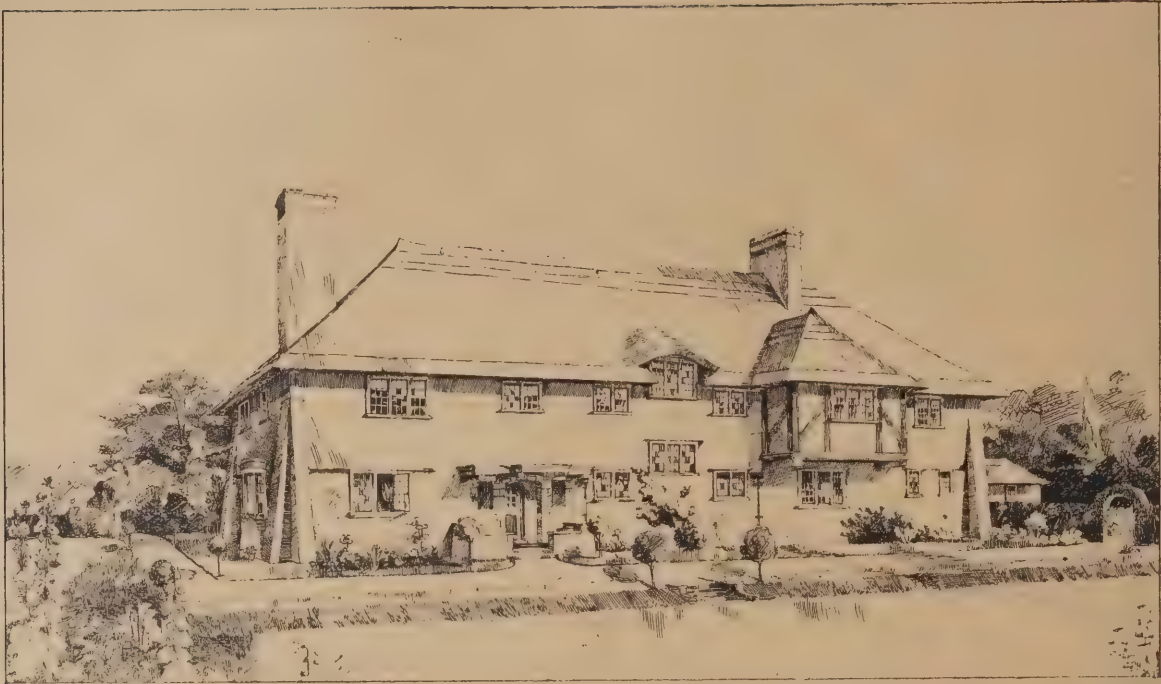
**The Birmingham Association of Mechanical Engineers** visited London recently to inspect some of the engineering work and objects of engineering interest. They inspected the Blackwall Tunnel and the works of Messrs. Maudslay, Sons and Field, Ltd., who are supplying the Belleville boilers to a large number of battleships. After dinner a visit was paid to the works of Messrs. Humphrey Tennant and Co., who are building some large marine engines for the Japanese Government, and subsequently to the Tower Bridge, permission having been secured to inspect the machinery.

**The Excavators in the Roman Forum** discover something of antiquarian interest nearly every day. A discovery of importance was made recently by Signor Giacomo Boni in the Forum, on the site of the Basilica Æmilia. Five or six huge blocks of white marble were found in the positions which they must have occupied since falling from the façade of the original structure. One of these blocks, which is broken into two parts, bears an inscription, stating that the Basilica was restored in the fourteenth year of the reign of Augustus by Tiberius, son of Augustus, and nephew of Divus Julius Caesar. The discovery of this important fragment on the outskirts of the area now in course of excavation constitutes evidence that the remainder of the edifice will shortly be brought to light. Some of the blocks discovered bear traces of fire. Several columns of red Egyptian granite were also unearthed on the same spot.

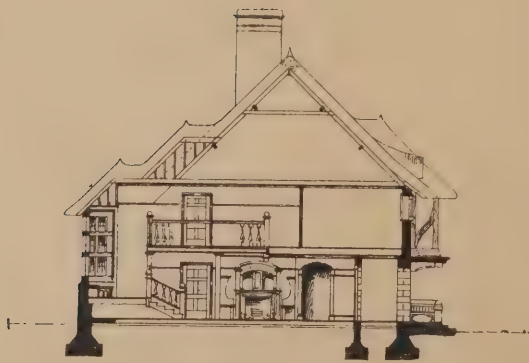


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SCALE OF 1/4" = 1'-0"



"PIPA"



SOUTH EAST ELEVATION



SOUTH WEST ELEVATION

DESIGN OF A COUNTRY HOUSE



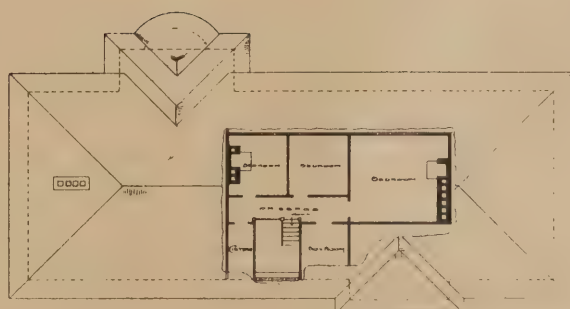
NORTH EAST ELEVATION



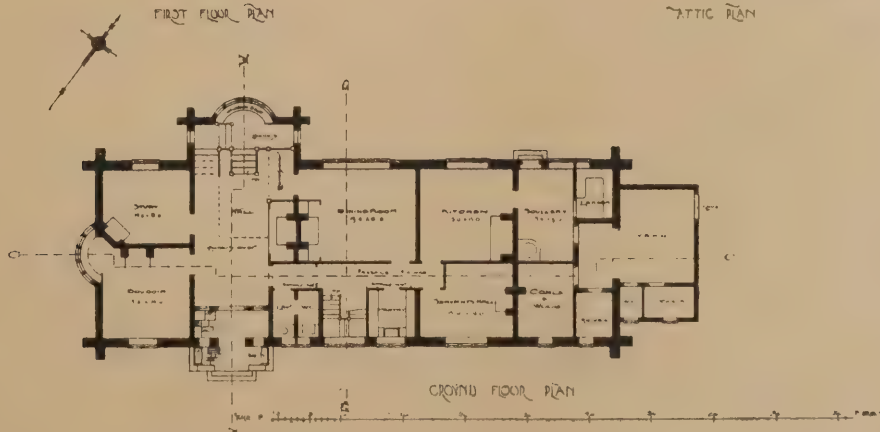
NORTH WEST ELEVATION



FIRST FLOOR PLAN



ATTIC PLAN



GROUND FLOOR PLAN



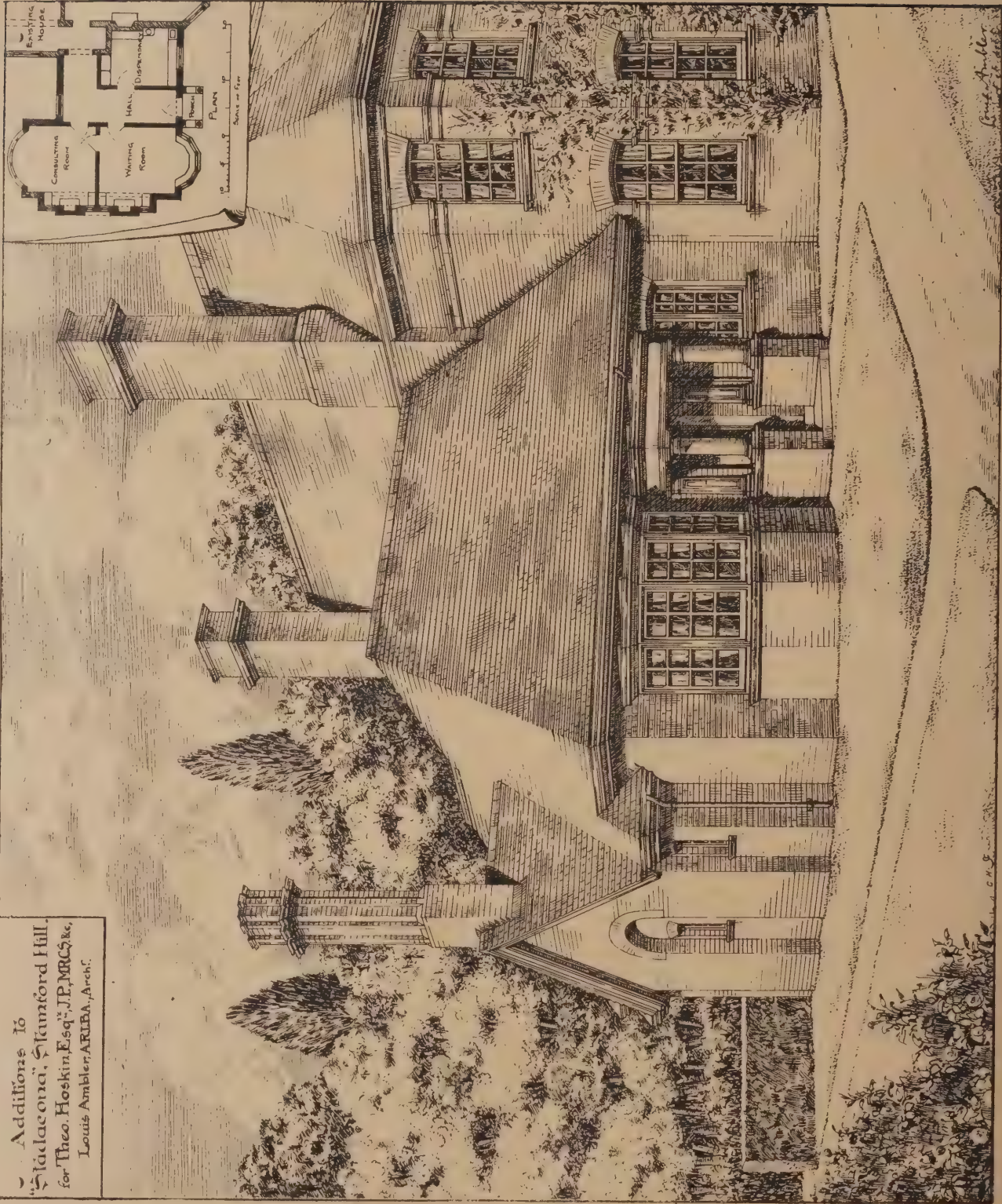
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— Additions to  
"Stradacona," Stamford Hill,  
for Theo. Hoskin, Esq., J.P., M.R.C.S. &c.,  
Louis Ambler, A.R.I.B.A., Archt.



ADDITIONS TO "STRADACONA," STAMFORD HILL. LOUIS AMBLER, A.R.I.B.A. ARCHITECT.





KEW BRIDGE. DRAWN BY H. F. WARING.



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## "BUILDERS' JOURNAL" COMPETITION.

DESIGN BY "PIPPA."

WE reproduce this week in one of our inset plates the design for a Country House submitted by Messrs. W. L. Downton and Alick Horsnell ("Pippa") in our recent competition. The following explanatory notes accompanied the design:—

GROUND FLOOR contains the following rooms and offices:—Dining room, study, boudoir, hall sitting-room, with gallery over and ingle nook to fireplace, so designed that it may well be used as a sitting-room. The stairs are so placed so as to lead up to the bay window, the floor of bay being level with the landing. The bay could be utilised for comfortable window seats. The main entrance is at the other end of hall, and opens into same from a paved porch. To the right of the entrance there is a lavatory and w.c., approached through an archway, which cuts them off from the hall. The passage through this archway also leads to the kitchen, scullery, servants' offices and back stairs. The scullery opens onto a covered way, with a yard adjoining.

The internal decorations of principal rooms will be of simple character, the woodwork generally being finished white.

FIRST FLOOR.—This floor contains six bedrooms, and the best bedroom with bath dressing-room adjoining. There is also another dressing-room. The other bath room is so placed as to be central with remaining rooms. Housemaid's closet and w.c.

ATTIC FLOOR.—Three bedrooms for servants, box room, cistern room.

Note.—The sizes of principal rooms will be found to be figured on the drawings. The heights are as follows:—Ground floor to ceiling, 8ft.; first floor, 8ft.; rooms in roof, 8ft.

DESIGN.—The building has been so designed as to give it a quaint and picturesque appearance, due care being taken in placing the principal rooms so as to command a fine view, and as far as possible a warm aspect.

MATERIALS.—We have provided 18in. external walls to front and back elevations up to first floor, and the remainder 14in. all finished externally with rough cast. The half-timbered projection on S.E. elevation would be constructed in oak and rough cast.

Note.—Hollow walls can be substituted externally if desired.

The windows, with the exception of the bays and entrance windows, are to have wood frames and iron casements, and will be glazed with leaded lights. The other windows to have stone dressings and iron casements. The porch, &c., is to be paved with stone slabs, and a seat is provided at each end of same. The pent over porch would be covered with lead. The roof will be thatch composed of wheaten straw. The chimneys are finished with stone caps and bands.

FLOORS.—Wood block flooring would be used for ground floor rooms, and it is proposed to tile such as scullery, larder, w.c., and lavatory.

The yard and coal cellar would be brick on edge.

ESTIMATED COST.—Cubic contents of building, 56,024 at 8d. = say, £1,880; yard, £50; total, £1,930.

**Electric Lighting at Radcliffe.**—Colonel Marsh, R.E., inspector of the Local Government Board, held an inquiry last week at the District Council Offices, Radcliffe, into an application made by the Urban District Council of Radcliffe for sanction to borrow £16,000 for the purchase of land in Irwell Street, and the erection thereon of an electric light station, together with distributing mains, &c., the amount borrowed to be repaid in thirty years. There was no opposition. The £16,000 will cover plant sufficient to run 4,000 eight-candle power lamps, and the summary is as follows:—Buildings, £2,750; boilers, engines, and dynamos, £3,702; station electrical plant, £870; feeders, distribution mains, &c., £7,060; land, £1,100; contingencies, £518; total, £16,000.

## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### LIABILITY FOR DAMAGE TO NEIGHBOURING PREMISES.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—A. and B. have adjacent plots of building land on chief rent. A., a few years ago (twenty perhaps), built a three-storey uncellared workshop close on his side boundary, and his footings are only 12in. deep. B., who has only just purchased his plot, desires also to build right up to his boundary so that the two side walls will touch; but cellars are wanted, and the foundations will be 5ft. below those of A. The land is sand, and possibly even with the greatest care some slight damage to A.'s gable may result. Will B. be liable?—Yours, &c., M. M.

Yes, if A.'s house is twenty years old.—H. P. B.

### MEASURING-UP PLASTERING.

To the Editor of THE BUILDERS' JOURNAL.

FELTHAM.

SIR,—Will you kindly recommend me a work upon measuring-up plastering? I am given to understand that four mitres only are allowed in a room, and that all others count extra. It is this sort of thing that I wish to master.—Yours, &c., SPREAD.

It was formerly the custom only to count mitres above four in a room, but this practice is now not always followed. All mitres and stop ends should be numbered. Mitres and stops over four in number are generally charged each at the price of a foot, lineal or superficial, of moulding. Instructions in measuring plasterers' work and squaring dimensions are given in "Plastering Plain and Decorative," published by B. T. Batsford, 94, High Holborn, London.

WILLIAM MILLAR.

### CONSTRUCTION OF BREWERIES, &c.

To the Editor of THE BUILDERS' JOURNAL.

CHIPPENHAM, WILTS.

SIR,—Would you kindly inform me what are the best works and their prices on the planning and construction of breweries, malthouses, warehouses, &c., from the point of view of an architect who wants information of the subject?—Yours, &c., S.W.

The only book we know of on any of these subjects is "Brewery Construction," containing chapters on breweries and maltings, their arrangement, construction, machinery, and plant. The author is G. Scammell, F.R.I.B.A., F.G.S. The second edition has been revised, enlarged, and partly re-written, by F. Colyer, Mem.Inst.C.E., Mem.Inst.M.E. The cash discount price of the book is 10s. 6d., post free, and can be obtained from Mr. B. T. Batsford, of 94, High Holborn, W.C. No recent book has been published on the construction of warehouses.

### TAKING OFF QUANTITIES.

To the Editor of THE BUILDERS' JOURNAL.

LONDON, N.W.

SIR,—In your review of "The Student's Guide to the practice of Measuring and Valuing Artificers' Works," which appeared in your issue for July 5th, the following passage occurs:—"In London, particularly, the system of 'taking off' in trade sequence has long been abandoned in favour of the group system." Will you please explain the "trade sequence" and the "group system"?—Yours, &c., G. S.

An exhaustive reply to this apparently simple question could only be given in a series of articles, or an entire volume, devoted to the subject of quantity surveying. Possibly it

may suffice, however, for present purposes, to state that under the "trade" system quantities were "taken off" almost in bill or specification order, trade by trade, little use being made of an "abstract." Some surveyors would even go so far as to follow the specification item by item, thinking that thereby the liability to error was reduced to a minimum; but in reality the possibility of omission was considerable, except in works of the very smallest kind. Under the "group" system, which is developed differently in different offices, the trades are allowed to run into apparent confusion on the "dimension" sheets, the "abstract" becoming of extreme importance for the purpose of arrangement into trades for the eventual bill. For example, when a doorway and door are being taken, they would not be left until everything connected with them had been "taken off"—first, the deduction of brickwork, then the relieving arch, the lintol, the jamb linings or frame, and the door itself with its hinges, lock, and furniture.

THE REVIEWER.

### OWNERSHIP OF WORKING DRAWINGS AND DETAILED ACCOUNTS.

To the Editor of THE BUILDERS' JOURNAL.

CHESTER.

SIR,—I shall be glad of replies to the following:—1, Can a client legally claim the original working drawings, specification and contract, as soon as he has paid his architect's account for professional services rendered, but before the builder has been paid his balance? 2, Can a client claim these documents if both the architect's and builder's accounts have been settled? 3, Is it usual for an architect to furnish detail particulars of his account if requested so to do?—Yours, &c., P. A. S. I.

1, Yes. 2, Yes.—H. P. B. 3, The request is one which it is almost impossible, and certainly impolite, to refuse, and which is certain to be made by public bodies, if not often by private clients.—G. A. T. M.

[We shall be pleased to insert opinions on these points from any of our readers who may have different views to the above.—Ed. B.J.]

**Errata.**—In the article on the Central School of Arts and Crafts, which appeared in our last week's issue, "Astin" Whiting should have been "Aston;" Charles "Spinner," "Spoooner;" and "Netch" design, "Vetch."

**The Restoration of Sidcup Parish Church.**—Dr. Tristram, Q.C., Chancellor of the diocese of Canterbury, held a court last Thursday at the parish church, Sidcup, Kent, in reference to a faculty for the rebuilding and enlargement of the parish church there. Several witnesses were examined, and the Chancellor gave special directions as to the removal of the remains of twenty-one persons, and the preservation of over thirty memorial tombstones. The work, when completed, will cost £10,000.

**A Statue of Washington at Paris.**—A body of American ladies are desirous of presenting an equestrian statue of Washington to the Municipality of Paris. The monument is in bronze, and has been sculptured by Mr. Daniel French, the height of the statue, including the pedestal, being close on 10 metres. The question is to know where to erect the monument. The preference of the donors is to have it in the Avenue Bois-de-Boulogne, facing the streets Chalgrin and Rude. This site the Administration will no doubt grant.

**Hexham Abbey Church.**—Mr. Turner, Secretary to the Society for the Protection of Ancient Buildings, states that the Society examined the fabric of Hexham Abbey Church in December last, and forwarded a report on its condition to the Rector. The examination, Mr. Turner says, revealed a serious state of things, several points of weakness having produced movements in the building, which it is feared are still going on, and which are shown by extensive cracks. It was urged in the report that the first money expended should be devoted to securing the foundations.



## FOLKESTONE PIER.

### EXTENSION WORKS.

AN interesting and instructive visit was made by over fifty members and associates of the Society of Engineers, last Tuesday week, to the Folkestone Pier extension works. These works comprise the extension, widening, and strengthening of the existing pier, and are being carried out from the design and under the control of Messrs. Coode, Son, and Matthews, Mr. W. Rigby being the contractor for the work, Mr. H. T. Ker the resident engineer, and Mr. J. Grice the contractor's agent.

The existing pier is being extended for a length of 900ft., 300ft. of this being in continuation of the line of the present work, and 600ft. canted at an angle of 36deg., so as to form a sheltering arm. The extension of the pier is composed throughout of Portland cement concrete blocks, weighing on an average seventeen tons, the heaviest blocks used being twenty tons. The work is built from a staging, covering the width of the pier, in two spans of 53ft. The centres of the spans longitudinally are 40ft. apart.

When the work covered by the innermost bay is completed and the girders are available, the staging is taken down and re-erected at the outer end. Piles, 18in. square, in clusters of four and six, are driven to form dolphins, this being accomplished by steam winches from cantilever pile engines. When the dolphins are completed, the lattice girders, which have been removed from the inner end, are floated out on a barge and lifted by the piling winch into position. The road on top of the girders is then laid, and the pile engines are ready to be run out for the next bay. Upon the top of the staging there are four travellers or Goliaths; the two outer ones, from which the diving bells are suspended, are capable of dealing with a working load of 30 tons. The two inner travellers are used for block-setting only, and their maximum working load is 20 tons.

The mode of procedure adopted for preparing the foundation is as follows: The sand, shingle and soft material are removed by 1½ cubic yard grabs, worked from the 30 ton travellers. After the soft material has been removed, the bells are lowered, with four men in each, to excavate the hard stratum and to level it so that the foundation blocks may be set on a perfectly level and even bed. The diving bells are 12ft. 9in. by 10ft. 6in. by 6ft. 6in., and weigh 26 tons. When the beds have been prepared, the 20 ton travellers, which in the meantime have been working at a higher level, are brought forward to set the foundation blocks, after which the bells resume work.

The work is brought up in lengths of about 60ft. at a time. The blocks in the underwater portion of the work are laid block on block without mortar joints, and the face blocks are joggled together and to the next blocks in from the face by round concrete joggles, which are deposited in bags by divers. Above L.W.O.S.T., the outer blocks are faced with granite blockers, and the blocks are bedded in mortar and the joints grouted.

Berthing places for the steamers are provided, and these have two landings, one at cope level, for use at high tide, and one at 13ft. below cope level, for use at half and low tide. The upper landing is supported by greenheart piles, which carry girders to form the deck. A sheltering parapet will be built on the west side of the pier, covering the railway platform, for the protection of passengers during rough weather. The level at which the pier is now being founded is 34ft. 3in. below L.W.O.S.T., and at the extreme end of the pier the depth of the foundation will be 42ft. below L.W.O.S.T. The total height of pier at the head, from foundation to top of parapet, will be 86ft. 6in.

The blocks for the pier are made in a yard conveniently situated. The concrete is made by two of Messent's mixers, each of one cubic yard capacity. It falls from the mixer into a hopper, from which it drops as required into

Decauville wagons, which run on staging fixed at a height sufficient to allow the wagons to tip freely over the top of the block moulds. The moulds are struck three days after a block has been made, and the block, when six days old, is lifted by the yard traveller and stacked. The blocks remain in the stacking ground for four weeks, and are not set in the work until they are five weeks old. The cement shed has a capacity for 1,300 tons. It is divided into 100 ton bins, and each bin is large enough to give room for turning.

Subsequently, the members of the society paid a visit to the site of the sinkings for the Dover collieries, and went over the works.

## Views and Reviews.

### THE MATRICULATION DIRECTORY.

This directory for June 1899 has just been published, and deals with the examinations of the London University for January and June 1900. The calendar for 1898-9 of the University Correspondence College is bound up with the directory. This college is now the recognised head of all preparatory institutions for candidates for the examinations, and anyone going in for them would do well to buy the directory, which gives most useful hints to the student. The directory itself contains articles on the matriculation regulations, text books for study, special subjects for January and June 1900, and the papers set at the examination held in June last, with solutions to them. These solutions must prove very helpful to the student, for they are clearly and well written.

"The London Matriculation Directory: No. XXVI., June 1899. With Special Articles on the Special Subjects for January and June 1900." Price 1s. net. London: W. B. Clive, University Correspondence College Press, 13, Booksellers' Row, Strand, W.C.

### FOR WOODWORKING STUDENTS.

It is a hopeful sign of the times that the artisan and craftsman more fully appreciates the value of drawing, and that facilities are now more fully granted him for studying this subject. A book might easily be filled with a recital of the advantages of drawing to all and sundry, and to the artisan in particular. So far as geometrical drawing is concerned, it has always, of course, been quite understood that some knowledge of this subject is an absolute necessity, as much to the craftsman as to the architect; but even in this branch there is much room for improvement, though we are free to admit that in the ranks of the masons and carpenters are to be found practical geometricians of no mean order.

We look forward to the day, which we believe to be not far distant, when freehand drawing—the training of the eye and powers of observation—will take its proper place in the usual training of the craftsman.

The City and Guilds Institute, the Company of Carpenters, and the Technical Education Board of the L.C.C. recognise, to some extent, in the examinations which they hold, the value of geometry to the carpenter and joiner, and for the purpose of assisting students to pass these examinations these "Notes on Carpentry and Joinery" (Vol. I., Elementary Course) have been compiled by Mr. T. J. Evans. A syllabus issued by the City Guilds, and one issued by the Carpenters' Company, have been taken as a guide in arranging the book, and specimen examination papers are given, with answers to some of the problems.

Such a book as this, compiled for such a purpose, must necessarily have its limitations and defects. Knowledge acquired by such means is generally swallowed unthinkingly and never digested. The process is too much akin to "cramming."

Considering that this work is limited to preparation for certain examinations, it is evident that if they are partial, incomplete or one-sided, the book must share their defects. However, taking it as we find it, and considering its avowed object, we think it will be found useful for its purpose. The author starts off with a chapter on draw-

ing instruments and material, and some hints on drawing, which will be found useful by the beginner, though we should like to take exception to such things as the use of HHH pencils, and the habit of sharpening them like a chisel. Also to the method given for mounting paper; ordinary glue is a terrible thing to use for this purpose, the paper has to be cut up, and the board is ruined. Mouth-glue, though rarely used in this country, is the best, it is cleaner and handier, and the paper can be taken up without tearing by running a thin knife blade under its edges. In damping a sheet of paper it is sufficient to wet one side only, the under side, which preserves the surface on which the drawing is to be made. Before being laid down it should be stretched.

It is impossible to follow the author in detail through the whole of his book, which gives chapters on various phases of plane geometry, such as proportionals, the properties of circles, scales, the construction of polygons, conic sections, areas of plane figures, &c., &c.; and again on solids, and isometric and oblique projection, illustrated by the ordinary joints in carpentry. We then get the practical setting out of windows and doors, and the construction of roofs, floors, and partitions. Several chapters are also devoted to graphic, arithmetic, and mechanical contrivances, stresses in framed structures, shearing stress, bending moment, systems of measurement, mensuration, &c., and the book ends up with a chapter on a few of the ordinary kinds of timber.

Although one can hardly expect such a text book as this to be a masterpiece of literary art, yet one can—without being hypercritical—call attention to the loose and careless way in which much of it is written. This carelessness is most noticeable in the chapter on timber, which, being more descriptive in character, demands greater care in the construction of the sentences. For instance, we read, apropos of Northern pine: "Scotch fir because it is frequently found in Scotland, of which it is supposed to be a native of the highlands." Again, apropos of teak: "It has the peculiar property of containing a resinous oil which preserves iron fastenings, and that of resisting the attack of ants." Is it the oil that resists the attack of ants, or is it some other property of the wood? Again: "The walnut is extensively used by the cabinet maker for innumerable purposes, both of an ornamental character as well as for articles of utility. The burred walnut, and that of the roots, are cut up into veneers."

We have frequently had occasion to express our dissatisfaction with any system of education designed simply to enable the student to pass a given set of examinations. We have always held that such is no true education. It is therefore impossible for us to approve of the method and aims of the great number of text books which are now being brought out. Doubtless there is much useful information to be found in their pages, many practical labour-saving methods for the use of the artisan and much knowledge that he is bound to acquire; but the student who uses such books must bear in mind their limitations, and realize that, however much he may learn from them, he is not necessarily educating himself thereby. They rarely teach him to think for himself.

A. R. J.

"Notes on Carpentry and Joinery," (illustrated) By Thomas Jay Evans. Vol. I. Price 7s. 6d. London: Chapman and Hall, Ltd.

The Site of St. Mary's Church, Moorfields, E.C., has been sold for £202,000. It is expected that £100,000 of the amount realised will be devoted to the completion of the new Roman Catholic Cathedral at Westminster.

The London Hospital New Medical College Building was formally opened last week by Lord Knutsford. In the basement of the new structure is the department of public health, professors' room and class rooms. The ground floor contains the biological laboratory and museum. On the upper floors there are laboratories, theatres, and class rooms. The new buildings, with the fittings, will cost about £10,000.



## Correspondence.

### TYPEWRITERS FOR SURVEYORS.

G. F. S. (Nuneaton), referring to Expedition's inquiry in our issue of July 12 for the name of a good typewriter for use in a surveyor's office for typing schedules of quantities, writes: "I can, with confidence, recommend the 'Empire,' with which I have taken from six to a dozen carbon copies at one time. This typewriter is a most powerful manifold. It has visible writing, and its cost, including office case, is but £13 2s. 6d."

E. R. (Sevenoaks) writes: "Having used an 'Empire' typewriter in an architect's and surveyor's office for over twelve months, I can speak with confidence respecting its sterling qualities as a reliable duplicator, both for stencil and carbon work. I have written several bills of quantities with it, the last one, which I finished a week ago, consisting of over eighty pages. It is eminently suited for this class of work, as every letter is visible to the eye of the operator immediately he has struck the key, and at the same time it is almost impossible for it to get out of alignment."

### THE REGISTRATION OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.

SIR,—If, as may be inferred from your having published the opinions and letters from well-known London architects in your last issue, this correspondence is likely soon to be closed, I would ask the favour of your indulgence once more. Anyone who has carefully followed the matter must have been struck with the practical unanimity of opinion expressed as to the desirability of Registration, and this also applies to the remarks of those whom your representative has interviewed, though it is obvious that some of them have not studied the question as it deserves, and have been unprepared or unwilling to commit themselves to any very definite opinion. Nothing is easier than to criticise and express opinions which a little reflection would considerably modify. One gentleman suggests amalgamation of the advocates of the Bill with the R.I.B.A. Well, it will be remembered that the Society of Architects has always insisted that the Institute is the proper body to take up the question, and it is for them to take the first step towards co-operation, and our object in holding provincial and other meetings on this question is to show that provincial architects, at any rate, really desire registration, and to urge the Institute to take the matter up. It would be interesting to learn how many of all those who oppose the measure have read the Bill carefully; and if it is the principle and not merely the Bill they object to, then their opposition can only be the result of self interest, and not of real conviction. Now, what is to be the result of all this correspondence? Is it to be merely a flash in the pan, and the matter to then drop, or is something practical to result? Surely the latter. To me it is incomprehensible how any society or individual can be so inconsistent as to express by resolution and statement their or his approval of a principle, and yet not be prepared to back it in a practical way. What is it which holds back architects, more particularly members of the R.I.B.A., from plain speaking in this matter? What have they to fear from the Institute? Surely it is not a misdemeanour to hold different views from those in high places, and who in many instances have neither the inclination nor desire to face the question or to take a definite stand either one way or the other. The opponents of registration make a fatal mistake in ignoring or undervaluing the importance of this question, or of supposing that the profession will much longer be content with the present order of things: the coming generation is a power to be reckoned with; the time has gone by for half-hearted measures; dogged does it, and the framers and supporters of the Bill have already overcome too many difficulties to be easily turned from the path they have marked out for themselves. There can be no

two ways about the matter: either we do or we do not want registration. The Society of Architects do not desire to force the matter on the profession, but they do point out the evil and show a practical cure, and knowing well that their efforts must eventually be crowned with success, go on their way with unabated determination.—Yours, &c.

C. McARTHUR BUTLER,  
Secretary of the Society of Architects.

## Keystones.

**A New Wesleyan Chapel at Ilkley** was opened recently. It is a corrugated iron structure, lined with wood, and has cost about £200.

**Mr. Herbert E. Bellamy, M. San. I., M.S.I.**, of Truro, has been appointed Surveyor to the Northam (N. Devon) Urban District Council.

**The New Church Schools at Kidderminster** will accommodate 250 children, and will cost nearly £2,000. Last Wednesday evening the Bishop of Worcester laid the memorial stone.

**The Ancient "White Hart Hotel,"** situated in Cornmarket Street, Oxford, is about to be rebuilt from designs by Mr. Stephen Salter, F.R.I.B.A., of Oxford, Maidenhead and the Isle of Wight.

**The National Eisteddfod of Wales** was opened on Tuesday, last week, by Professor Herkomer. The judges in the Competitions in Art Subjects are Sir Laurence Alma Tadema, R.A., and Mr. Goscombe John, A.R.A.

**Munificent Gift to a Rhyl Hospital.**—The Duke of Westminster has presented the sum of £10,000 to the Royal Alexandra Hospital, in order to enable the Committee to proceed at once with the erection of the administrative block.

**The New Nurses' Home of Queen Charlotte's lying-in hospital, in Marylebone,** was opened last week by the Duke and Duchess of York. The cost of the building, which is of red brick and terra-cotta, including the furniture, has been about £12,000.

**The Memorial Stones of a New Baptist Chapel in Bradford** were laid recently. The new chapel is to be built in Carlisle Road, and will be in modified Gothic style. It will accommodate about 800 persons, and the school buildings adjoining are to hold 550 scholars.

**A New Free Library for Leeds.**—The Leeds Free Library Committee have decided to advertise for designs for a new library at Stocks Hill, Armley. The cost of the building is not to exceed £5,000. In addition to the library, there is to be a general reading-room, a boys' reading-room and a ladies' reading-room.

**A New Mission Chapel at Swanland** is now being erected. The chapel is being built of red bricks, with gable ends filled with timber work. The roof is to be covered with red tiles, and furnished with a bell-cote. The estimated cost of the building is £840. The architects are Messrs. Brodick, Lowther and Walker, of Hull, and the builder is Mr. Kirby, of Swanland.

**A New School at South Levenshulme** is being erected, from designs by Mr. W. E. Stelfox, by Mr. George Macfarlane. The building is to be of brick, faced with Accrington bricks throughout, with stone dressings. School accommodation will be provided for 200 children, and there will be a mission room to hold over 300 persons. The estimated cost of the building is £1,600.

**Bungalow at Sleights, Yorkshire.**—Mr. Fletcher, builder, of Whitby, has commenced the erection of a large one-storied bungalow at Sleights for Mr. J. Brooks, of Whitby. The walls will be executed in pressed bricks and timbered gables. The site overlooks the River Esk. Higher up the village, Mr. G. Wallace's bungalow, built of stone, is nearing completion. Mr. G. Scaife French, of Whitby, is the architect of the buildings.

## A CURIOUS COMPENSATION CASE.

IN the Queen's Bench Division, last Thursday, before Mr. Justice Darling and a common jury, the case of Endacott v. Snow and Mackay and Co., Limited, was heard. This was an action by Mrs. Rowena Endacott, a widow, to recover damages for personal injuries, alleged to have been caused by the negligence of the defendants or their servants. The defendant Snow is a builder and contractor, and the defendants Mackay and Co. own a stationer's shop at New Brompton, Kent. The plaintiff's case was that on November 29th last she went to the shop of Mackay and Co. to get some writing-paper, and was told to call next day for it. Next day she called at about four o'clock, opened the shop door, and fell into a hole in the passage behind the door and broke her leg. It was admitted that there was a hole in the passage behind the door, the boards having been cut away for the purpose of lowering the floor; and that one of Snow's workmen was at work at the time on the job, under instructions from Mackay and Co., Limited. The evidence for the plaintiff went to show that there was nothing in the appearance of the shop to lead her to suppose it was closed, or that there was a trap at the back of the door.—The manager of Mackay and Co. was called for the defence, and stated that before Snow's workman came to do the work he pulled down the blind of the door and bolted it.—Snow's workman was called, and admitted that the door was bolted when he came to work upon the floor, and that he unbolted it, as he had to open the door in order to get more light just before the accident.—Mr. Kemp, Q.C., for the defendant Snow, contended that there was no negligence or breach of duty on the part of Snow's servant. It was necessary for him to open and close the door in order to do the work for the defendants, Mackay and Co. If there was any negligence it was on the part of Mackay and Co. in not giving proper warning. Mr. Robson, Q.C., for the defendants Mackay and Co., contended that as the shop was closed there was no invitation to the plaintiff to come in. So far as Mackay and Co. were concerned, they had done what was necessary to close the shop by bolting the door and pulling down the blind. Snow was liable if anyone was, as the unbolting of the door by his servant led to the accident. Mr. Rufus Isaacs, Q.C., for the plaintiff, contended that there was a clear case for both defendants. It was Mackay and Co.'s duty to put up a rail in front of the door, or notice stating that the shop was closed. He could have taken proper precautions to prevent anyone entering the shop, and had not done so. With regard to Snow, his servant had admitted unbolting the door, which enabled the plaintiff to fall into the trap. His negligence was clear. Mr. Justice Darling, in summing up, said the liability depended on whether the defendants or either of them did or neglected to do something which a careful person, under all the circumstances of the case, would have done. In conclusion he left the following questions to the jury:—(1) Were the defendants Mackay and Co. through their manager guilty of negligence? Answer.—Yes. (2) Was the defendant Snow through his servant guilty of negligence? Answer.—Yes. (3) Was the plaintiff herself guilty of negligence, but for which the accident would not have happened? Answer.—No. (4) Was the plaintiff injured by reason of the negligence of Mackay and Co., or Snow, or both, or either of them? Answer.—Yes. (5) Was the shop door being unlocked or left unlocked by Snow's servant a circumstance which made it negligent of him to unlock it or leave it unlocked? Answer.—Yes, but we think Mackay and Co.'s manager should have been there to see the shop was safe. The jury assessed the damages at £200. Upon these findings judgment was entered for the plaintiff for £200. The point of law upon the question of liability between Mackay and Co. and Snow was reserved.



## Bricks and Mortar.

"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."—JOHN RUSKIN.

**"Stadacona,"** We illustrate this week in one of our centre plates, additions to "Stadacona," Stamford Hill. These additions comprise the professional portion of the residence of Mr. Theo. Hoskin, J.P., M.R.C.S. The house is in Amhurst Park, and has been considerably altered and added to, the principal internal alteration being the formation of a large hall in the centre of the house, by the removal of a small room, and lobby, which were of no importance. The additions are carried out externally in red brick, to correspond with the existing house, and the roof covered with Broseley tiles, the old roof being also tiled. The moulded work to chimney stack and window sills, &c., is of Portland stone. The porch, windows, bargeboard, and eaves cornice are of wood painted white. Internally the principal features of the waiting-room and consulting-room are the ingle-nook fireplaces, and the bay windows with fixed seats. The floors of the additional portion are of wood blocks stained to match the woodwork; that in the consulting-room and dispensary being "palm-leaf" green and in the waiting-room "American walnut" colour. The other woodwork in the halls, staircase and corridors throughout the house, is painted white, and the doors red, the darker tint being that of De Morgan lustre tiles, from which the colours of the paper are copied. The chimney-pieces for the new rooms and the new hall were supplied by Mr. Aldam Heaton, the grates by Messrs. Elsley and Co., and Messrs. Steel and Garland, and the fireplace tiles by Messrs. De Morgan and Co. The slips and fenders are of antique marble. Mr. T. W. Rhodes, of Stoke Newington was the builder, and Mr. Louis Ambler, A.R.I.B.A., of 7, Arundel Street, Strand, W.C., was the architect.

**Kew Bridge.** The view of this graceful structure illustrated in one of our central plates will in a few weeks be no longer obtainable. The work of driving in the piles of the temporary bridge is now rapidly being pushed forward, and as soon as this is completed the new work will be put in hand. It certainly is to be regretted that so graceful a bridge is doomed, but we are told the new one, from designs by Mr. E. Wolfe Barry, will in no way be inferior as far as appearance goes, and certainly in point of utility will be far superior. Until 1758 no bridge united the two counties, a ferry serving the needs of travellers, but in the following year an Act of Parliament was obtained authorising the erection of a bridge, the only one preceding the present. This was erected as private enterprise, and was largely built of wood, but the expense of repairing it made it necessary that a more lasting structure should be erected, and the present bridge was built in 1789. This structure of stone and brick has been an ornament to the river ever since. Our illustration is from the pen of Mr. H. F. Waring.

### An Old Coffin.

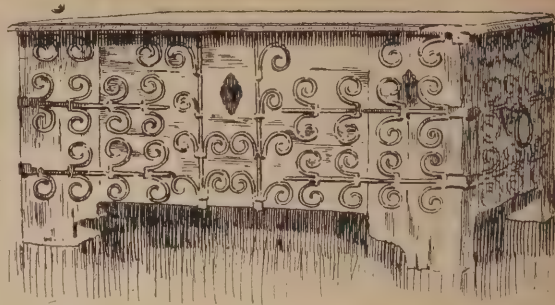
THE old oak coffin which we illustrate on this page is of French design and make, and is now in the South Kensington Museum. It is of 13th Century date and was purchased by the authorities for £100. Although the ornamental wrought-iron work with which it is strengthened is considerably broken and the woodwork is much battered, it is still a highly interesting and decorative piece of furniture. One peculiar feature which it possesses is that of having three locks, as can be seen from the three key-holes, one being in the centre and the others upon each side. The woodwork at the front and back corners is continued to form legs which raise the bottom of the chest, a desideratum in a chest used for the storage of valuables, both for safety and the preservation of the bottom from damp when standing upon an earthen or stone floor. South Kensington Museum is very rich in many similar artistic relics of bygone ages, which would repay the careful study of the present school of artists and craftsmen who are trying to improve our minor crafts, one of the most important of which is furniture-making. Unfortunately the present congested state of the museum militates against the careful study of many of these examples of artistic work through being crammed together in dark passages, but it is to be hoped that when the new museum is completed they will be given sufficient space to afford facilities for the proper study of them. Our illustration is from a sketch by Mr. Sydney Filmore.

### Mr. Walter Crane's Successor.

It is being asked who will be chosen for the thankless position of Principal of the Royal College of Art. Mr. Alfred Gilbert and Mr. G. C. Haité have been mentioned as suitable men, but the question is not so much who is suitable, as who will be allowed a chance of doing himself justice in the position. In the present state of affairs such an artist of standing as either of the two suggested would surely not accept the offer if he is to be bound over to endorse the action of those identical officials who have so freely stultified themselves in the past. Perhaps Mr. Haité is the best person to fill the vacant post. His qualities are well known, and as head of an art school which is supposed to exist principally for the training of decorators, he would probably produce results of the greatest importance. But to appoint him and give him no authority whatever would be a mistake. It would result in a direct loss to the art world, and South Kensington would be in the same condition as before.

### Bexley Heath Asylum.

At the usual meeting of the London County Council last week the Asylums Committee recommended "That the supplementary estimate for a further expenditure of £70,000 on the Bexley Heath Asylum be approved." The Finance Committee said this represented an increase of twenty per cent. on the original estimate for the building of the asylum. The Committee added that "In July of last year the Asylums Committee foresaw that the vote of £350,000 for the erection of the asylum would be exceeded, and warned the Council to that effect without giving any indication of the amount of the excess. The Finance Committee understand that the expenditure contemplated by the present estimate has in great part been already incurred, and they are of opinion that by the action of the Asylums Committee the terms of standing order No. 259 have not been fully complied with, and that the Council has not secured that financial control which it was the object of the standing order to provide." The report of the Asylums Committee which dealt with the matter was as follows:—"The estimate of the total cost, as now sub-



OLD OAK CHEST IN SOUTH KENSINGTON MUSEUM.

mitted, with a provision of £6,034 19s. 8d. for contingencies, amounts to £420,000, or £70,000 in excess of the grant. It will be thus seen that the total cost of the asylum will amount only to about £210 a bed, or with cost of land and equipment to £252 a bed, which we think a satisfactory sum when compared with other recently constructed asylums. For instance, we are informed that the new West Somerset Asylum has cost £377 a bed, including land and equipment, and the contract price for the building alone of the new North Staffordshire Asylum, exclusive of farm and other out-buildings, electric lighting and architect's commission, was £280 per bed. Other instances are the new Lincolnshire Asylum and the Hill End Asylum, St. Albans, which will, it is stated to us, be likely to cost £300 and £250 a bed respectively. The Council's asylum at Claybury cost some years ago, when building operations were less costly, £236 a bed, exclusive of land and equipment. Finally, we are of opinion that the Council will have in this building full value for the money expended, although the procedure adopted in fixing a definite sum for expenditure before a single plan was prepared has had its disadvantages." Mr. N. W. Hubbard, chairman of the Asylums Committee, explained the details of the excess, and held that the building would be well worth the expenditure.

**Amendments.** Mr. BEACHCROFT considered the recommendation, and moved as an amendment to it:—"That a special committee be appointed to inquire into the circumstances which have led the Asylums Committee to involve the Council in so large an expenditure for the provision of the Heath Asylum, Bexley." He explained that the foundations of the asylum were put in by the Works Department at a higher cost than that of the estimate. The committee were wrong, as the excess of £70,000 on the whole building could not have arisen from the increased cost of materials and labour. The committee said that improvements had been introduced, and extra works added; but these were not sanctioned by the Council, and, therefore, the standing orders were infringed. He thought the matter ought to be specially inquired into. The amendment was seconded by Mr. Westmacott, and opposed by Sir A. Arnold, as a vote of want of confidence in the Committee. It was suggested by Mr. Dickinson that after the money had been voted, the General Purposes Committee should look into the matter. On the division of the Council it was found that thirty-eight were for the amendment and sixty-eight were against it. Mr. Dickinson then moved to add to the recommendation a rider that the General Purposes Committee report upon the circumstances of the case. The recommendation of the Committee, with Mr. Dickinson's amendment, was agreed to.

**St. Paul's.** THE dome of St. Paul's Cathedral is gradually being made more pleasing to the eye and less garish than it was. Workmen have been busy undoing portions of Sir William Richmond's scheme of decoration. The red stencilling, with black letters over, on the stonework is being removed; certain of the small panels above the quarter domes have been made less obtrusive, by having their mosaic translated into a



quieter key of colour; and also a considerable number of the objectionable gilt bosses have been removed. We are informed that ever since the stencilling was begun there were grave doubts as to its suitability. It is very satisfactory to have these panels toned down, and to obtain only this concession would have fully justified the outcry raised. But there is still much that is unsatisfactory; the mosaic on the pillars should be entirely done away with, as it falsifies the appearance of strength and stability requisite for the support of the dome; the gilding on the mouldings in the choir should be removed. It can hardly be expected that the stained glass windows will be either removed, or replaced by others conceived with a notion of the art of working stained glass, but at any rate, let us hope that future ones will be entrusted to specialists in this line, and that they will admit more light than those of Sir William Richmond which are composed of such small pieces of glass. The glass windows in the dome should be left of clear glass, as they are at present.

### An Architectural Visit.

A PARTY of about twenty-five members of the Exeter Architectural and Archaeological Society took part in the annual summer excursion last Wednesday. The trip was arranged by the secretaries, Rev. R. M. Fulford and Mr. James Jerman. They made Newton Abbot their centre. The first old building visited was the typical Elizabethan mansion of Forde, about half a mile from the station, where the members were allowed to see the whole of the house, including the bedrooms occupied by Charles I. and William of Orange on his way to Exeter. The oak panelling, staircase, and beautiful plaster ceilings with pendants were much admired. The house was the seat and property of the Reynell family, and afterwards of the Earl of Devon. Leaving this, a lovely drive of about three miles brought the party to Hacombe, where the church of St. Blaize was inspected. The church has on plan a nave, chancel, and north aisle, south porch, and bell turret at the west end. There is an arcade of Transitional Norman work between the nave and north aisle, and many of the windows are of Early English date. There are many interesting monuments of Hacombes, Courtenays and Carews (the present owners). Close by is Hacombe House, the present residence of the owners, the Misses Carew. The house was rebuilt about 100 years since, judging by its style. From Hacombe the party drove to Wolborough, where they were shown over the church, dedicated to St. Mary the Virgin. The duty here was formerly provided for by the Abbots of Tor. There is a handsome screen stretching across the nave and aisle, though the groining has been removed, and some of the canopies which originally adorned the rich parapet of the rood loft have been fastened up against the front spandrels. On the north and south just outside the screen are two chantry chapels, around which the screens are carried. In the south porch is a recessed niche like a fireplace with a flue, probably used as a place to put "processional candles" in before entering the church. A similar one can be seen at East Ogwell. There are handsome tombs to the Reynell families.

### The Conclusion of the Visit.

THE next halting-place was at the interesting church of East Ogwell. It has nave, chancel, north aisle, south transept, and south of the chancel a chamber over the vault of the Reynell family, for the repair of which some land was given by the family in 1723. It was erected in 1650. The screen does not seem to be the original one, as it never had any groining, whereas the "newel" staircase to the rood-loft points to there being a groined screen at one time. The church was restored just as the present Archbishop was leaving Exeter for London and the present Bishop arrived, and the fact is commemorated by the heads of both being carved as terminals to a string underneath the sill of the east window. A short drive brought the members to

the rectory where tea was provided. Time prevented a visit being made to West Ogwell, so the next building visited was Lower Bradley. Here the perpendicular chapel with its "cradle" roof and the many quaint windows in the same style were examined, one little "oriel" being, as a member said, quite a "dream." A beautiful drive through the woods soon brought the party to Highweek Church. This church, dedicated to All Saints, stands on a lovely site to the north-west of Newton, and consists of nave, north and south aisle, and west tower; the tower arch is the oldest part of the church, dating from about 1200, and there is an interesting Perpendicular font with the arms of the Yardes, Ferrers, Bushell, and Bishop Lacey on the panels. The windows, south aisle, and west window of tower are of the Tudor style, inserted probably in the older walls. In the centre of nave roof is a large, richly carved "boss" with St. George and the Dragon on it. From this the party drove into Newton and returned to Exeter.

### Audley House, Salisbury.

THIS old house is of considerable interest, and contains some good carving and wood chimney-pieces. The premises have been adapted by Mr. Crickmay, to meet the needs of the clergy, and is now, we believe, a

but fortunately passed without causing loss of human life. Several minor casualties are reported. A workman was injured by a falling brick; a horse was killed by the collapse of a stable, and a fragment of masonry fell from a church, smashing four paving-stones and narrowly missing a passer-by. The Palazzo Sciarra and the Palazzo Chigi in the Corso were slightly damaged; a large stone fell from the Law Courts; several blocks of stone fell from the Colosseum; the columns in the Forum were seen to rock, but remained intact; a small fissure appeared in the recently-discovered Lapis Niger, but quickly closed again; and some unfinished jerry-built houses in an outlying quarter of the city collapsed. At Monte Compatri, half a church collapsed. The churches, being high buildings, suffered severely. At Monteporzio the cemetery and church were entirely destroyed. The marble coating of the façade of Marino Cathedral fell.

**London** THE annual report of the Works Committee of the School Board for London has just been issued, and deals with work done during the year ending March 25th. It shows that compulsory powers were obtained in the Session of 1897-98 over ten sites for new schools, and additional land for



church house for the diocese. Our illustration is from a sketch by Mr. Frederick Chatterton, who informs us that he cannot guarantee the spelling, as he obtained it from a neighbouring shopkeeper.

### Earthquake in Italy.

THE city and environs of Rome were visited last Wednesday by a severe shock of earthquake which damaged various edifices in Rome itself, and did considerable harm at Frascati, Rocca di Papa, and other towns on the Alban Hills,

thirteen existing schools. The number of sites for new schools scheduled in the present session is twenty-four, and the number of sites for enlarging schools or playgrounds or for general improvements is fifty. During the past year the Board have agreed to purchase several interests in sites, at a cost of £199,741, the surveyors' fees in connection therewith amounting to £1,382. The total cost of sites purchased up to the end of the year under review is £23,488,038, and the costs, £459,654. Nine additional schools have been opened



during the year, and thirteen enlargements were also opened. The cost of the new schools was £240,239, and the enlargements cost £95,767. With reference to the provision of accommodation in the future, tenders were accepted during the year for erecting ten new schools, giving accommodation for 9305 children, at a cost of £208,484. These schools will be situated one each in Chelsea, Finsbury, Hackney, Marylebone, and Tower Hamlets, two in Greenwich and three in East Lambeth. Tenders have also been accepted for erecting eleven enlargements, providing a total accommodation for 2,997 children, at a cost of £87,575. These enlargements will be carried out, one each in the City, Chelsea, Hackney, and Marylebone, two in Finsbury, two in Greenwich and three in Southwark. With regard to the new schools, it should be stated that the tenders include the provision of halls, which are not counted in the accommodation of the schools, the provision of centres for cookery, laundry, manual training or schools for special instruction, and also in all cases a drawing class-room. In three cases a playground is being provided on the roof; and three of the schools are being erected under special arrangements with a view to reducing the cost. As to the enlargements, the variations in cost arise mainly from the fact that in enlarging the buildings the opportunity is taken to improve the existing schools by providing halls, &c., so as to make them thoroughly efficient; and in some cases the tenders include centres for cookery, laundry, manual training, drawing class-room, a chemical laboratory, a new house for the school-keeper, and a new drainage system. Various other work was done in connection with the improvement of existing schools, and drainage and sanitary matters received especial attention. At Lady day last the following schools were in course of provision:—Sixteen schools, to accommodate 14,216 children, and twelve enlargements, to accommodate 3396 children, were being erected; thirty-five additional sites had been or were being purchased, the schools to be erected on twenty-eight of which would accommodate 21,759 children; six sites for new schools, accommodation not yet determined; and twenty enlargements of schools, to provide additional accommodation for 5,962 children. The educational department had also sanctioned the provision of sites in four districts, on two of which schools will be erected to accommodate 2,094 children. It will thus be seen that the Works Committee has not been idle during the past year.

#### Manchester Technical School.

DR. J. T. NICHOLSON, D.Sc., M.I.C.E., head of the mechanical and electrical departments of the Manchester Municipal School has presented to the Technical Instruction Committee an interesting report of his visit to some of the larger technical schools and engineering works in the Eastern States of America. Dr. Nicholson was much struck by the close practical bearing the technical schools generally have upon everyday engineering work, more especially in regard to their experimental departments; in all cases the professoriate were in the closest relation with practising engineers. The professors also have large influence with the employers of their district in securing positions for their students. "It is strongly believed," says Dr. Nicholson, "that this spirit of helpfulness on the part of the technical schools towards the manufacturers (which is so marked a feature in America and in Germany) would be of great assistance to the industrial development of England. Such helpfulness can be encouraged only by securing the confidence of manufacturers, and this can best be done by a close association between the school and their work, in order to find out what problems they are attacking, and how the experimental plant at the technical schools may be adapted to the study and solution of these problems for the benefit of the whole industrial system. When our engineers and manufacturers realise that we are in a position to construct apparatus and carry on researches on questions of immediate interest to them we shall be in a

position to justify our important relation to the industrial and commercial progress of the country." Dr. Nicholson believes that the experimental department of the Technical School is by far its most important side, and he asserts that the large expenditure and the increased area for laboratories now proposed for the Manchester School are by no means too great to correspond with the industries directly connected with the engineering profession which those laboratories will represent.

## Professional Practice.

**Edinburgh.**—The corner stone of a large new Episcopal church, in course of erection in Murieston Road, Dalry, was laid by Bishop Dowden recently. At present, only a portion of the church will be erected, the cost of this part of the structure being about £7,000. In its architecture the church follows the early French Gothic style, having an arrangement of nave, aisles, and sanctuary, with large hall, class-rooms, and vestries below. The extreme length of the portion of the nave at present being erected is 63ft. by 49ft. The sanctuary, which will be so constructed as to be easily altered when the church is completed, is 19ft. 6in. by 11ft. 6in. The seating area of the church will be for 500 persons. The large hall below will accommodate about the same number. The main entrance to the church will be approached by a broad flight of five freestone steps, over 30ft. in length—the church being entered by deeply recessed arched doorways, having enriched arched traceried windows grouped in on each side, divided by turreted buttresses. The doorway entering from Murieston Road, will also be of a very effective character. Another feature of the church will be the roof, which will be of open timber with a series of massively arched main spandril couples filled in with enriched arched tracery resting on clustered moulded pillars. The whole interior walls of nave and aisles are to be built of dressed warm-tinted freestone. The exterior walls are also to be finished with warm-tinted freestone dressings, and filled in with random rubble work to harmonise with same. The roofs are to be covered with green Westmoreland slates, and the windows filled with cathedral glass. The lighting throughout will be by electricity, and the heating by hot water small bore pipes. The architect is Mr. John Robertson, of Inverness.

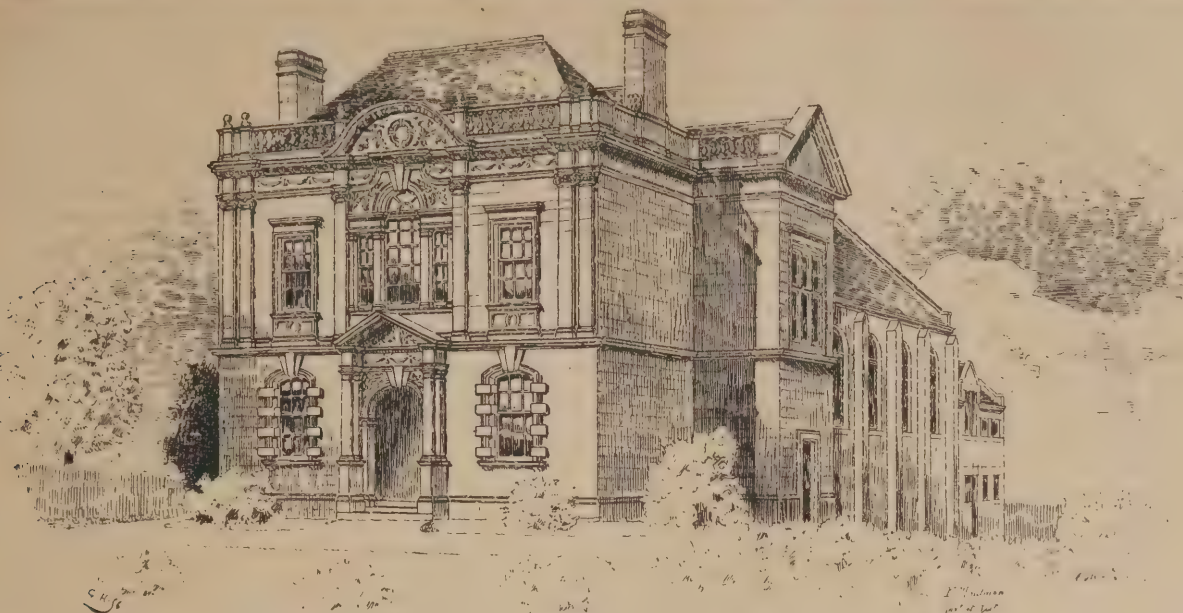
**Hollinwood.**—The four memorial stones of the new Bethesda Particular Baptist Chapel were laid recently. The style of the new chapel will be Early English Gothic, and the front will be built of Halifax stone dressings and Hipperholme pierpoints. The entrance doorway is to be formed with moulded and deeply recessed jambs and arched with label mould and coping. Over the doorway will be a large rich traceried four-light window, with label mould and carved bosses. Flanking the doorway are to be mullioned windows with moulded transoms and heads, and over these will be minor ones with traceried heads, label moulds, and carved bosses. At the middle and sides will be buttresses panelled in upper parts with gablet stones and pinnacles and carved apex stones, the main coping being finished at apex with a carved ornament. In the entrance to the chapel will be a porch with panelled and moulded dado framing, and a vestibule framing and door of an ornamental character, which will be glazed with lead lights to upper portions. On each side of the vestibule will be separate cloak rooms for ladies and gentlemen. The principal lighting is to be obtained from the lower part of the roof, with lights glazed with ornamental glass, on account of the sides having to be built to extent of land and other property erected thereon. There will also be a gallery at each end of the chapel. The one in front will be for scholars, and the other at the back for choir and organ, each gallery to be approached by staircases. The back part of the premises will be occupied by minister's vestry, a

room for general purposes, and a smaller classroom, with a fireproof heating apparatus in cellar under same. All necessary lavatory accommodation will also be provided. The whole of the general internal woodwork will be selected pitch pine. The roofing will be of pine and red deal. The ceiling to roof will be semi-circular, with plaster cornices to eaves and side lights. In front of the pulpit will be the baptistry, enclosed within a moulded mahogany rail and ornamental standards. The seating accommodation, including galleries, will be for about 400 persons. The contractors for the work are Messrs. Squire Ashton and Sons, of Oldham, and the whole of the work is being carried out from the designs of Mr. David Taylor, of Hollinwood. The cost of the building, and other things in connection with the same, is estimated to be close on £2,000.

**Liverpool.**—The new General Post Office, which was opened by the Duke of York last Wednesday, stands on a site of nearly two acres. To Victoria Street the building has a frontage of 226ft., to Sir Thomas Street 254ft., and to Stanley Street 260ft. It is built of Portland stone, and was designed by Mr. Henry Tanner, F.R.I.B.A., architect to the Board of Works, who adopted the style of the Italian Renaissance. The front of the building is decorated with sixteen statues, four large figures representing England, Ireland, Scotland, and Wales, and ten smaller ones, Canada, Newfoundland, British Columbia, Barbados, West Indies, East Indies, Africa, Straits Settlements, New Zealand, and Australia; below are figures typical of commerce and industry, electricity and engineering. The site, with property facing Whitechapel, intended to provide for future extensions, cost £200,000, and the building and fittings £160,000. The height from the street level to the road is 83ft., and from basement to roof 96ft. The foundations are laid on a bed of solid concrete 2ft. thick, covering the whole site. The principal contractors were Messrs. Thornton and Sons, Liverpool. The building is of a very substantial character and fireproof, the floors, which are carried on steel girders, being of fireproof asphalt. The main entrance from Victoria Street gives access through a vestibule lined with marble, to the public office, 69ft. by 66ft., round three sides of which is a counter nearly 200ft. in length. On the same floor is the letter-sorting office, 244ft. by 64ft.; the parcels sorting-office, 220ft. by 64ft.; the foreign mail office, 74ft. by 61ft.; and the registered letter office, 67ft. by 22ft. The postmaster's entrance, also in Victoria Street, leads by a principal circular staircase to the first floor, on which are also situated the offices of the numerous departments concerned with accounts, district surveys, correspondence, public inquiries, missing and returned letters, as well as the postmaster's office, the office of the engineering staff, rooms for postmen, clerks, &c. The second floor is occupied by the telegraph and telephone services. The telegraph instrument room, with accommodation for 500 operators, has an area of 13,910 square feet, occupying the whole width of the building. The telephone room is 108ft. by 63ft. On this floor are a complete suite of dining-rooms, kitchens, cloakrooms, &c. On the top floor is situated the electrical storage apparatus. The basement is occupied by the electric and pneumatic machinery and storing accommodation. In the interior of the building, for the purposes of light and ventilation, is a courtyard, 174ft. by 102ft. At the rear is a spacious yard for the reception and delivery of mails. The yard is partially covered by glass roofing.

**Nottingham.**—A new county asylum is being erected near Radcliffe by the Notts. County Council. The complete area of the land is over 130 acres, and the main buildings are designed to cover some ten of these. The main entrance will be on the westerly boundary of the site, and the drive will communicate with the main buildings, which stand well in the middle of the expanse, due north and south. The centre of the block is to be utilised for the administrative depart-

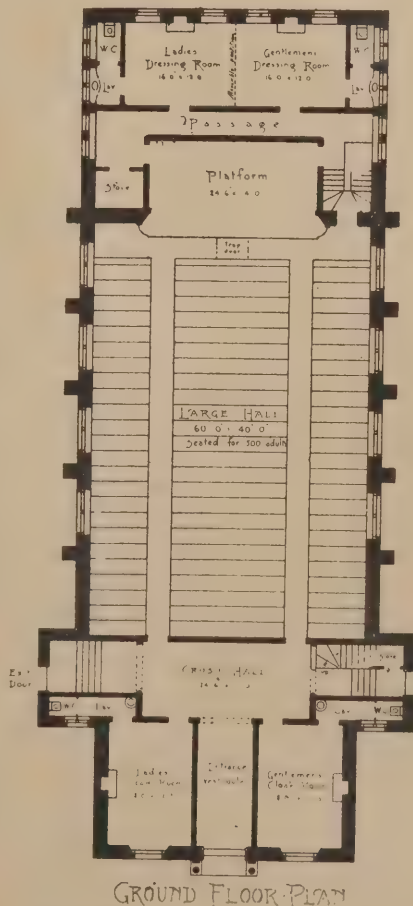




DESIGN FOR PUBLIC HALL, PITLOCHRY, N.B. EDWARD C. MAIDAN, ARCHITECT.

ment, consisting of a large recreation hall, which will have a stage measuring 47ft. by 20ft., and dining hall and servery and kitchen department to the south, with their numerous larders and stores, while on the north side of the kitchen court will be the general stores and outhouses. Ranged along each flank of the dining hall will be the apartments for male and female attendants, comprising mess-rooms, day and club rooms, and sleeping accommodation. The northernmost part will consist of the entrance block, which will jut out from the main building, and will contain the various offices, visiting rooms, &c. The patients' blocks will occupy a southern position, with that for males on the east side and for females on the west, both to be built on the echelon principle, and identical in size and arrangement. Accommodation will be provided for 225 patients in each, in addition to eighteen attendants, with separate wards for the sick and infirm, recent and acute, epileptics, and chronic; but should necessity occur the structure is so designed that additions could speedily be made which would bring the provision up to 600, the administrative blocks being already ample for that number. To the rear of the male quarters will be placed the workshops for the various craftsmen required on the premises, together with the boiler and engine houses and dynamo room, for the asylum is to have its own electric light installation. The mortuary, a small detached building, will also be situated on this side, also the laundry, which is to be equipped with all modern machinery, and a sewing room in the rear of the female department, adjoining a large court corresponding with that on the male side. Baths are to be provided on both sides of the asylum, and the whole of the departments will be connected by a covered corridor. North of the entrance block, on the opposite side of the drive, will be the chapel, to seat some 360 worshippers. It will have two entrance porches, organ chamber, vestry, and spacious chancel. The medical superintendent's house will be almost due west of this, with the isolation hospital stationed about 150 yards west of the main building. Spacious airing courts are to be provided for those patients who must be confined, but otherwise the premises will not be walled off. In close proximity to the entrance gates will be built a porter's lodge and houses for married attendants, while a little further to the north excellent farm buildings are to be erected, where it is eventually intended to accommodate some twenty working patients. The heating and ventilation are to be on the Plenum system, and will be carried out by Messrs. Ashwell and Nesbit, of London and Leicester. The foundations have been put in by Messrs. Fish and Sons, of Nottingham, and the superstructure, which is to be of plain

brick except so far as concerns the entrance block, the chapel, and the medical superintendent's house, which are to have stone dressings, faced with pressed bricks, has just been placed in the hands of Messrs. Pattinson and Sons, of Ruskington, Sleaford. The patients' wards will have wood dados with plaster above, and the sanitary annexes, kitchens, laundry, &c., are to be lined with tiles, glazed bricks, &c. The whole of the asylum will be practically on a dead level, and with the exception of the patients' and attendants' blocks, the buildings will be one storey in height. The plans have been designed, and the whole of the arrangements carried out by Messrs. E. P. Hooley (surveyor to the County Council) and J. Sander, engineer and architect. Mr. J. J. Bird is the clerk of works.



GROUND FLOOR PLAN

DESIGN FOR PUBLIC HALL, PITLOCHRY.

**Pitlochry, N.B.**—On this page we illustrate a design submitted by Mr. Edward C. H. Maidman, architect, of 13, Charlotte Street, Edinburgh, in a competition for a public hall to be erected at Pitlochry. Mr. Maidman's design shows a dignified design eminently suitable for the purpose it was intended. The ground plan shows a fine hall capable of seating 500 adults, with ladies' and gentlemen's cloak-rooms, lavatories, crush hall, and ladies' and gentlemen's dressing-rooms.

**Tomintoul.**—The Parish Church of Tomintoul is being entirely reconstructed from designs by Mr. John Robertson, architect, of Inverness. The whole of the interior of the building is to be gutted out, and the front walls taken down and rebuilt. The front of the building facing the roadway is designed with a series of arched Gothic windows, fitted in with mullions and arched tracery, between massive buttresses, having pinnaced buttresses on all angles. A new porch, the full height of the building, finished with buttresses to match those on the church, is placed next the roadway, forming the main entrance to the church. In the interior the ceilings will be all ground arched and pannelled with a series of dressed and varnished main arched couples, fitted in with tracery, resting on clustered moulded pillars. The church is also to be refloored with narrow dressed flooring. The body of the building is to be fitted up with massive and comfortable seating of varnished pitch pine, with moulded haggets and choir seats to match. The windows are to be fitted with stained glass, while the walls and ceilings are to be painted with soft, subdued church tints. The renovations are estimated to cost about £1,000.

#### Peterborough Cathedral Restoration.

—The completion of the restoration of the west front of Peterborough Cathedral was effected last week by the placing in position of the huge cross at the summit of the southern gable.

**The Wesleyan Chapel at New Hindley, Wigan,** the memorial stones of which have just been laid, is being erected at a cost of £6,000, by Messrs. Preston and Hirst, builders and contractors, of Wigan, from plans by Messrs. W. Waddington and Son, of Manchester.

**The Masonic Hall at St. Budeaux, Cornwall,** the memorial stones of which were laid recently, will be a one-storey erection. The front will be of dressed limestone. The retiring room will be in front, and the large room immediately behind. Mr. J. H. Nunn, of Plymouth, is the architect, and Mr. J. E. Carter is the builder.



## Trade and Craft.

### SANITARY FITTINGS.

Messrs. Oates and Green, Limited, of Halifax, have sent us their new catalogue of sanitary fittings for schools, public buildings, barracks, &c. It is extremely well printed on good paper, and is fully illustrated. Perhaps the most striking features of the catalogue are the pages containing illustrations of their plain glazed and moulded majolica bricks. The appearance of these bricks is excellently reproduced in colours. On pages six and seven the various shapes of glazed bricks are illustrated, and opposite each are given the prices of the different qualities of bricks. On page eighteen is a reproduction showing the arrangement of a patent automatic trough closet, with improved self-contained inlets, which prevent fouling. This closet is very suitable for factories, workshops, schools, and like places, and is made of heavy, highly-glazed nalcetric ware. Two pages further on is an illustration of their patent automatic flushing latrine. This is an isolated closet answering the purpose of a trough closet, but ensuring more privacy. Another patent automatic flushing latrine has the advantages of possessing a flushing rim and of being made in one piece of ware, thus avoiding any possibility of leaking joints. The catalogue gives the prices of these closets, as well as those of the lavatory basins, taps and tanks, closet seats, urinals, sinks, gullies and traps, channel bends, and other sanitary fittings supplied by the firm.

### KEY'S VENTILATION.

Messrs. Key and Tindall, ventilating and heating engineers, of Central Chambers, 109, Hope Street, Glasgow, have sent us a pamphlet dealing with Mr. William Key's system of ventilation. This system has now been before the public for some years, and has made a good deal of stir. The system consists first in impelling air upon an air-washing screen of cords, formed of horsehair and hemp, closely wound over a top rail of wood and under the bottom rail. There is a constant trickling of water down the screen, keeping it continually wet, and the air is filtered through it, all dust and soot particles being removed as they adhere to the wetted surfaces, the stream of water carrying them down into the drain. After passing the screen the air is warmed by contact with steam-heated coils, and then enters the living compartments by wide, shallow ducts, placed about 5ft. above the floor, where the incoming air is directed towards the ceiling and diffused. This incoming air drives out the air which has previously filled the compartment through openings at the floor level. Fog is completely removed by Mr. Key's system, and smut and dust are reduced. If a higher temperature is required in any particular room, secondary coils are introduced in the main air ducts to do this. Provision is made for tempering the incoming air by admitting filtered cold air with the warm, which is mixed while passing through the fan. Any given temperature can thus be maintained with ease. The whole air within the building is put under a slight pressure, so that it is claimed no air can enter except by the inlets provided for it, thus preventing any sewer gas from escaping into the building from faulty plumbing or soil pipes. The out-going air is taken by enclosed trunk flues to the roof ventilators, which are fitted with valve frames and valves in such a manner that in all weathers the air passes outwards uninterruptedly, even during gales. The air in any room may be renewed from six to eight or even ten times per hour as required. It is claimed that during summer the wet screen will condense any excess of moisture, and in winter, when the air is often too dry for easy respiration, the screen restores sufficient moisture to the air to give it a natural humidity.

### SEWAGE TREATMENT.

The Adams' Patent Sewage Lift Co., hydraulic engineers, and sanitary specialists, of Peasholme Green Works, York, are

now making special automatic apparatus for bacteria beds and sewage filtration. They send us a small pamphlet excellently got up upon the subject. Their automatic syphon for bacteria beds is controlled by the exit of air. On the expiration of any given interval of time they come automatically into work, discharging the contents of the filter bed, &c., in which they are placed. In this way the requisite intervals of work and rest required for bacteria beds are secured. The firm also supplies syphons which discharge alternately, distributing sewage to one of two filter beds, where two are used, or to one section of a series where a channel, &c., is used. We note a neat apparatus which allows of a free passage of sewage through it until the filter bed is full, when the supply is automatically cut off, regardless of the level of sewage in the filter bed. When the filter has discharged and stood for aeration, the apparatus is released automatically by the discharge of any connected bed; or, if by heat, the opening of an air cock. The apparatus has no complicated parts, the cut-off being effected by a valve. Any number of filter beds may be filled in this way, each shutting off as it fills. The firm also supply a patent adjustable wedge disc-valve for bacteria beds, &c. This valve, which has turned and ground faces, is adjustable in case of wear, and is well fitted for use in filter beds. A wedge on the handle causes the valve to lock at once tightly, and yet to open freely. The firm's speciality for upwards of fifteen years has been the manufacture of flushing apparatus, which has been brought to a state of great proficiency. Their syphons are made for every kind of work, drawing from 12in. upwards, and from 3in. to 36in. diameter of outgo, and are treated of in a neat little pamphlet. The company have also sent us another pamphlet dealing with their automatic sewage lifts. These sewage lifts automatically raise any liquid from a lower to a higher level by the air being compressed by a column of sewage or water. In effect, a sewage lift is an automatic engine, compressor, and pump combined, but requires only one moving part—a plain flat valve. Its use, where conditions are favourable, means the substitution of a self-acting lift, worked by waste liquid, entailing practically no annual expense for the costly engines and pumping plant usually employed. The firm desire us to state that they will send these pamphlets to anyone applying for them.

**New Technical Schools at Redditch** are shortly to be erected. The site in Easemore Road has been purchased, and the plans have been passed.

**The Norfolk and Norwich Archaeological Society** made a visit last week along the coast. The party started from Thorpe, and visited Cromer, East Runton, Beeston, Sheringham, Wayborne, and Felbrigg Hall.

**Memorial to Edmund Spenser.**—The Merchant Taylors' Company have decided to erect a stained-glass window in the great hall at the Merchant Taylors' School in memory of Edmund Spenser, who was educated at the school.

**The Birkett Memorial.**—Last Friday evening, Alderman Newton, the chairman of the Parks Committee of the Newcastle Corporation, inaugurated the new clock, which has been placed in the Armstrong Park in memory of the late Mr. James Birkett.

**The Como Exhibition.**—As we stated last week, this exhibition, destroyed by fire, is to be rebuilt. The construction of a new gallery has been decided upon, and Signor Linati, the architect, has already presented the plans for the new façade, which will be in Renaissance style.

**Clacton Cottage Hospital** was opened last Wednesday by the Lady Rayleigh. The building comprises two wards and a "paying patients" room, a central hall and nurses' rooms, with kitchens and other accommodation. The cost, including purchase of land and furnishing, will be £3,000.

## Keystones.

**Change of Address.**—Mr. Edgar G. C. Down, A.R.I.B.A., has moved into new premises at 31, High Street, Cardiff.

**Parkhurst Theatre, Holloway,** is to be pulled down, and a new one—to be called The Marlborough—erected on its site.

**New Nurses' Quarters for Norwich Hospital.**—The Earl of Leicester has sent to the Governors of the Norfolk and Norwich Hospital a cheque for £5,000, for the building of new nurses' quarters in connection with the hospital.

**The New Wing of Plymouth and Stonehouse Bethel,** the foundation of which was laid recently, is being built from plans by Messrs. H. J. Snell and M. A. Bazley. The building will consist of four storeys of brick and Portland stone.

**A Municipal Technical School for Leeds.**—The Finance Committee of the Leeds Corporation will shortly hold a conference with representatives of the various educational bodies in Leeds upon the subject of establishing a municipal technical school.

## CURRENT PRICES.

FORAGE.		2 s. d.	2 s. d.
Hay, best	per load	3 10 0	4 0 0
Sainfoin mixture	do.	3 10 0	4 5 0
Clover, best	do.	3 10 0	5 0 0
Beans	per qr.	1 6 6	
Straw	per load	1 4 0	1 16 0

OILS AND PAINTS.		2 s. d.	2 s. d.
Castor Oil, French	per cwt.	1 2 2	1 4 0
Colza Oil, English	per cwt.	1 3 3	
Copperas	per ton	2 0 0	
Lard Oil	per cwt.	1 8 9	1 9 0
Linseed Oil	per cwt.	1 0 6	
Neatsfoot Oil	per gal.	0 2 6	0 4
Petroleum, American	per gal.	0 0 6½	
Do., Russian	per gal.	0 0 5½	
Pitch	per barrel	0 8 0	0 3 6
Tallow, Town	per cwt.	1 5 0	1 7 3
Tar, Stockholm	per barrel	1 6 6	
Turpentine	per cwt.	1 10 6	
Glue	per cwt.	1 14 0	2 18 6
Lead, white, ground, carbonate per cwt.		0 19 0	
Do. red	per cwt.	0 17 3	
Soda crystals	per ton	2 15 0	
Shellac, orange	per cwt.	3 5 0	3 6 0
Do. sticklac	do.	2 2 6	2 15 0
Pumice stone	do.	0 8 9	

METALS.		2 s. d.	2 s. d.
Copper, sheet, strong	per ton	88 0 0	
Iron, bar, Staffs. in London	do.	8 0 0	9 10 0
Do. Galvanised Corrugated sheet	do.	13 0 0	13 10 0
Lead, pig, Spanish	do.	14 11 3	
Do. English common brands	do.	14 15 0	
Do. sheet, English, 6lb. per sq. ft. and upwards	do.	16 10 0	
Do. pipe	do.	17 5 0	
Nails, cut clasp, 3in. to 6in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Foreign	do.	135 15 0	136 5 0
Do. English ingots	do.	134 10 0	
Zinc, sheets, English	do.	140 0 0	25 10 0
Do. Vieille Montaigne	do.	81 0 0	
Do. Spelter	do.	25 12 6	25 17 6

TIMBER.		2 s. d.	2 s. d.
Soft Woods.			
Fir, Dantzic and Memel	per load.	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Laths, log, Dantzic	per fath.	4 10 0	5 10 0
Deals, Petersburg	do.	4 0 0	6 10 0
Do. Archangel 2nd & 1st per P. Std.	do.	9 0 0	13 10 0
Do. do. 4th & 3rd. do.	do.	12 0 0	13 5 0
Do. do. 2nd. do.	do.	7 5 0	8 5 0
Do. Riga	do.	6 15 0	8 10 0
Do. Petersburg 1st Yellow do.	do.	10 10 0	14 15 0
Do. do. 2nd do.	do.	10 10 0	12 0 0
Do. do. Unsorted do.	do.	10 0 0	10 15 0
Do. do. White do.	do.	7 15 0	11 5 0
Do. Swedish	per P. Std.	9 5 0	16 10 0
Do. White Sea	do.	12 5 0	
Do. Quebec Pine, 1st. do.	do.	18 0 0	19 0 0
Do. do. 2nd. do.	do.	12 0 0	
Do. do. 3rd & 4th. do.	do.	7 15 0	9 15 0
Do. Canadian Spruce, 1st. do.	do.	9 0 0	10 5 0
Do. do. 3rd & 2nd do.	do.	6 5 0	7 15 0
Do. New Brunswick do.	do.	7 5 0	8 0 0
Battens, all kinds	do.	7 5 0	8 15 3
Flooring Boards, 1 in. prepared, 1st	per square	0 9 6	0 12 0
Do. 2nd	do.	0 10 9	
Do. 3rd & 4th	do.	0 9 6	

HARD WOODS.		2 s. d.	2 s. d.
Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 12 6	3 17 6
Box, Turkey	per ton	0 0 0	15 0 0
Cedar, Lin. Cuba	per ft. sup.	0 0 4	0 0 4½
Do. Honduras	do.	0 0 3½	
Do. Tobacco	do.	0 0 5 3/32	
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 4 7/8	
Do. African	do.	0 0 5	
Do. St. Domingo	do.	0 0 6 17/32	
Do. Tobacco	do.	0 0 5 3/16	
Oak, Dantzic and Memel	per load	8 5 0	3 5 0
Do. Quebec	do.	4 13 6	5 0 0
Teak, Rangoon, planks	do.	8 15 0	13 15 0
Wainscot, Giga (Bauk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cub. ft.	0 2 6	0 4 2



## COMING EVENTS.

Wednesday, July 26.

ROYAL ARCHEOLOGICAL INSTITUTE.—Annual meeting at Ipswich.

SOCIETY OF ARCHITECTS.—St. James's Hall, Piccadilly, W., at 8 p.m.

Thursday, July 27.

ROYAL ARCHEOLOGICAL INSTITUTE.—Annual meeting (continued).

Friday, July 28.

SANITARY INSTITUTE.—Examinations in Practical Sanitary Science and for Inspectors of Nuisances, at Liverpool.

ROYAL ARCHEOLOGICAL INSTITUTE.—Annual meeting (continued).

Saturday, July 29

SANITARY INSTITUTE.—Examinations in Practical Sanitary Science and for Inspectors of Nuisances, at Liverpool.

ROYAL ARCHEOLOGICAL INSTITUTE.—Annual meeting (continued).

SOCIETY OF ARCHITECTS.—Visit to Canterbury and St. Margaret's Bay, Dover. Leave Victoria Station at 10 a.m.

Monday, July 31.

ROYAL ARCHEOLOGICAL INSTITUTE.—Annual meeting (continued).

Tuesday, Aug. 1.

ROYAL ARCHEOLOGICAL INSTITUTE.—Annual meeting (concluded).

## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

ABERTILLERY (Mon.).—For rebuilding the "Bell" inn, for Messrs. Phillips and Sons, Limited. Messrs. Swallow and Creighton, architects, Steam Packet Chambers, Dock-street, Newport. Quantities by architect:—  
David Lewis ... £1,260 0 | D. Jno. Davies ... £1,068 0  
W. Smith ... 1,192 5 | Jenkins and Son, ...  
Lawson and Co. ... 1,177 0 | Newport\* 948 0  
C. H. Reed ... 1,168 0 | \*Accepted.

BURTON-ON-TRENT.—For additions to Edge Hill House, Stapenhill, for Mr. John H. Radford, of Llandudno. Mr. Thomas Jenkins, architect, 35, High-street, Burton-on-Trent. Quantities by the architect:—  
J. T. Varlow ... £232 0 0 | W. Gee ... £275 2 6  
Henry Edwards ... 276 12 6 | George Kennard\* 272 12 7  
\*Accepted. Additional work at schedule of prices.

CHIPPENHAM (Wilts).—For technical and secondary schools for the Education Committee. Mr. Robert E. Brinkworth, F.S.I., of Chippenham, Wilts, architect:—  
William Bicozley ... £5,774 18 | Smith & Light, Chip-  
Downing & Rudman 4,877 0 | penham\* ... £4,310 0  
\*Accepted. Architect's estimate, £4,500.

LONDON.—For the brickwork and cast-iron sashes of superstructure of proposed new shops for Messrs. Yarrow and Co., Limited, at London-yard, Cubitt Town, E. Messrs. Bradshaw, Brown, and Co., architects, of Billiter-square-buildings, E.C.:—

T. H. Jackson ... £4,600 | Harris and Wardrop ... £4,027  
Dove Bros. ... 4,335 | G. Minter ... 3,697  
Mowlem and Co. ... 4,196 | Chafen and Newman\* 3,495  
Colls and Sons ... 4,169 | \*Accepted.

## LONDON PLATE-GLASS INSURANCE CO. Ltd.

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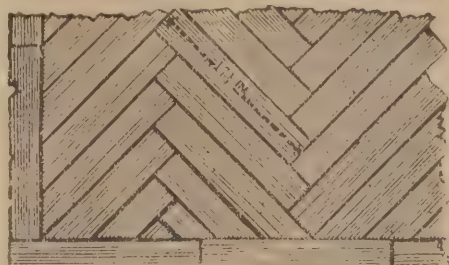
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17 1/2 x 3 x 2	8 10	8 0	11 8	
17 1/2 x 3 x 1 1/2	6 9	6 1	9 1	



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1 1/2 x 4 Oak, 50/- Pitch Pine, 24/6 per square.  
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LONDON OFFICE HAMBRO' WHARF, UPPER THAMES ST. E.C. 7 BURNLEY, LANCASHIRE.



LONDON.—For paving with wood blocks portions of the carriageways of Duncan-street and Hornsey-rise, at present macadamised, for the Vestry of St. Mary, Islington. Mr. J. Patten Barber, Chief Surveyor:—

E. H. Jackson ... £1,979 2 10 | Acme Wood  
W. Griffiths ... 1,833 18 11 | Flooring Co.,  
Victoria Park\* £1,773 10 3  
\* Accepted.

LONDON.—For erecting shop, meat stores, and flats, Nos. 30 and 31, Little Marylebone-street, W., for Messrs. W. and A. Curnick. Messrs. White and Page, architects. Quantities by Messrs. Nortoncroft, Son, and Neighbour:—  
Lawrence and Son ... £7,388 | C. Wall ... £6,954  
Holloway ... 7,342 | Patman & Fothering-  
G. H. and C. Bywaters ... 7,218 | ham\* ... 6,831  
Lidson and Son ... 6,970 | \* Accepted.

LONDON.—For engineering works, Poplar Union. Mr. F. J. Warden-Stevens, consulting engineer, 34, Victoria-street, S.W.:—

Electric Motors.  
General Electric Company\* ... £231 0 0  
Battery of Accumulators.

Hart Accumulator Co.\* ... 456 3 8  
(Maintenance, £22 10s. per annum for eight years.)

Electric Cables, Wiring, and Fittings.  
Speedy, Congdon, and Co.\* ... 1,975 0 0  
Main Switchboard and Distribution Boards.  
Verity's, Limited\* ... 533 0 0

Artesian Wells.  
Harvey and Williams, Limited\* ... 1,600 0 0  
\* Accepted.

LONDON, E.—For additional premises at Morris-road, Bromley, E., for Messrs. Spratts, Limited. Mr. Max Clarke, A.R.I.B.A., architect:—  
Patman & Fothering-  
ham ... £13,963 | T. Boyce ... £12,389  
Shummar ... 13,860 | Howell J. Williams ... 12,376  
L. Whitehead and Co. ... 13,700 | Jerrard ... 12,150  
H. and H. F. Higgs ... 13,485 | Beer and Gash ... 11,543

LONDON.—Accepted for the erection of six shops in Philip-lane, Tottenham, for Mr. D. Burnett. Mr. E. Howard, architect:—  
W. Hawley, Tottenham ... £2,150

## THE BUILDERS' MATERIAL SUPPLY STORES,

92, BERWICK-STREET, OXFORD-STREET, W.,  
, HOPKINS-ST., BROAD-ST., GOLDEN-SQUARE, W., and  
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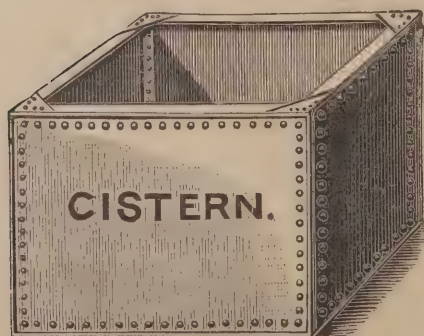
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CISTERN.

NEW BROMPTON (Kent).—For the supply of Cherbourg quartzite and Kentish ragstone, for the Gillingham Urban District Council. Mr. C. Candler, Surveyor, Council Offices, New Brompton:—

Kent Road Maintenance Supply (Cherbourg s. d.  
granite) ... 11 0  
Cherbourg Quartzite Company, Mark-lane,  
London\* ... 10 10  
Raystone.  
F. A. Hughes ... 6 2  
Bensted and Son ... 6 1  
Constable and Co. ... 6 1  
Chittenden, Lake, and Co., Maidstone\* ... 5 11  
\* Accepted.

SOUTHWOLD.—For Cliff Protection Works, Southwold. Mr. F. Ball, Borough Surveyor:—

Pedrette and Co. £7,990 0 0 | Moran and Son ... £6,720 0 0  
Truman ... 7,272 0 0 | Double, Ipswich\* ... 6,400 0 0  
Cooke and Co. ... 7,147 0 0 | King ... 5,943 6 0  
Prestwich ... 6,834 7 6 | [Surveyor's estimate, £6,600.]  
\* Accepted.

SURBITON.—For making up Victoria-avenue and St. Andrew's-square, for the Urban District Council. Mr. S. Mather, C.E., Surveyor's Offices, Victoria-road, Surbiton:—  
Victoria-avenue.

J. Nicholas ... £1,261 17 0 | S. Kavanagh ... £1,073 10 0  
H. Dally ... 1,190 3 6 | S. Atkins, Kings-  
Killingback and ton-on-Thames\* ... 967 0 0  
Co. ... 1,190 0 0

St. Andrew's-square.  
Killingback and S. Atkins ... 1,170 0 0  
Co. ... 1,280 0 0 | S. Kavanagh,  
J. Nicholas ... 1,188 7 6 | Surbiton\* ... 1,106 2 0  
\* Accepted.

WALTON-ON-THE-NAZE.—For the erection of floral hall and conservatory buildings, Round Garden, for the Coast Development Company, Limited. Mr. C. H. M. Mileham, architect, 1, Lincoln's Inn-fields, W.C.:—

Shillitoe ... £3,750  
Everett and Son, Colchester\* ... 2,682  
\* Accepted.

IS the Best Material for Roadways, Footways, Damp Courses, Roofings, Warehouse Floors, Basements, Stables, Coachhouses, Slaughterhouses, Breweries, Lavatories, Tennis-Courts, &c., &c.  
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BLACKWALL TUNNEL  
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TO BUILDERS and CONTRACTORS.  
TENDERS for the ERECTION of new COAST-GUARD BUILDINGS at Kirkwall, Orkney, N.B., consisting of quarters for an officer and four men, will be received by the Director of Works of the Navy before NOON, on FRIDAY, AUGUST 18th, 1899.  
Copies of the drawings and specification will be supplied on application to this Office, or may be seen at the Watch-room, Coastguard Station, Kirkwall, N.B.  
Director of Works Department.

Admiralty,  
No. 21, Northumberland-avenue,  
London, W.C.

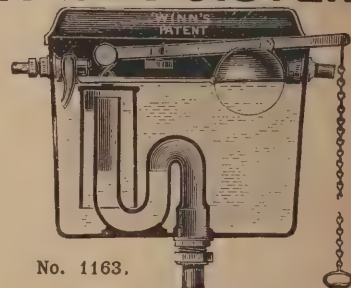


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WINDOW HEADS from 5s. each.

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*See Large Advertisement, Back Page, Monthly.*

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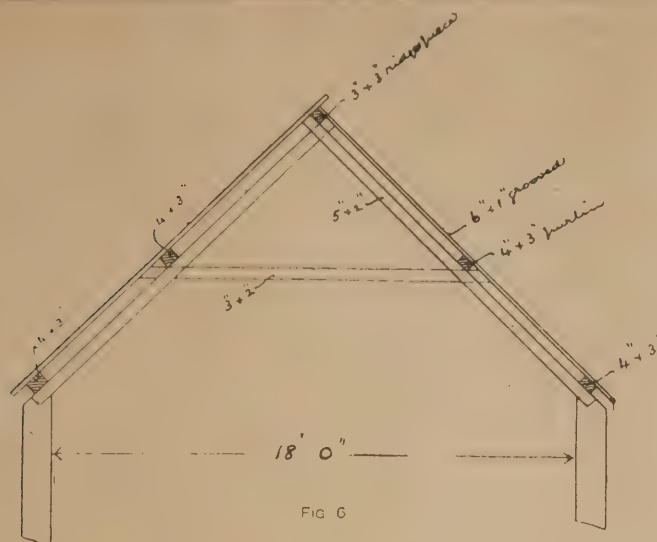
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CHEAP ROOF TRUSS FOR TEMPORARY PURPOSES. (DETAILS EXAGGERATED).

wall-plate. The rafters are 5in. by 2in., crossed and nailed together at the top, and spiked on top of the posts at the bottom. One tie of 3in. by 2in. is nailed on at such height as will give the necessary head-room. One purlin, 4in. by 3in., is set just over this tie. A piece of 3in. by 3in. is spiked on the top of the truss to form purlin and ridge-piece in one.

Over all a covering of boards, 6in. by 1in., grooved both sides, is laid with the slope of the roof, and nailed top, bottom, and centre,  $\frac{1}{2}$ in. spaces being left between each board. The upper end of one side is made to sail over 3in., to form protection at ridge as shown.

I built a shed in this manner three years ago for the purpose of brick drying, and have found it answer admirably, and it is, to all appearance, as substantial now as the day it was built. In this case I did not use a purlin midway up the roof, but in its place I strained a seven-ply galvanised fencing wire with stiffening struts at either end, to enable the end rafter to take the strain; and though this has answered fairly well, I do not recommend it in preference to the timber, as I find the grooved boards sometimes buckle upwards. I, therefore, consider a timber purlin to which the boards may be nailed is an advantage.

**Pembroke House Schools, Lytham,** have been fitted by Messrs. John King, Limited, engineers, of Liverpool, with their latest improved hot-water "steam tube" heating apparatus, with special economical coil heater with waterway fire-bars.

**Purchase of Waterworks at Godalming.**—After a prolonged discussion the Godalming Corporation have resolved to purchase the undertaking of the Frith Hill, Godalming and District Water Company, the estimated outlay involved being £72,250.

**Accident at James Bridge, Darlaston.**—An accident occurred last Wednesday at the James Bridge Iron and Steel Girder Works, James Bridge, Darlaston, belonging to Messrs. E. C. Keay, Limited, which resulted in the death of one man, and shocking injuries to two others. A workman named Thomas Powell, assisted by James Rosker, had to rivet a girder section, which was on the ground under a gantry on which a crane was running. Several rails, weighing about three tons, had been lashed together at one end of the gantry, and were being run along to the other end. As the crane approached where the men were at work, they were told to clear, but for some reason they neglected to do so, and a portion of the chain which lashed the rails together broke, and the rails becoming liberated, fell against a girder and afterwards on to the two men and a youth named James Clifford. When they were liberated it was found that Rosker was terribly crushed, and the other two were suffering from severe injuries. They were removed to a hospital, where Rosker died shortly after his admission.

## Engineering Notes.

**The Widening of Spencer Basin, Belfast,** at a cost of £31,000, has been decided upon by the Belfast Harbour Commissioners.

**Proposal to cut a Canal through a Mountain.**—G. A. Karwiese, the German engineering expert, who was consulting engineer in the construction of the Suez Canal, now proposes to build a still more remarkable ship canal across the isthmus between North and South America. His plan is to tunnel through a mountain range. By this plan full-rigged ships with masts reaching up to 180ft. high could sail right through the mountain range four abreast. The proposed canal would be eleven miles long, one and two-third miles of which would be the tunnel through the mountain. He claims that such a canal could be built in two years at a cost of 48,000,000 dollars.

**Large Engineering Scheme in Cumberland.**—About ten years ago nearly £200,000 was spent at the Hodbarrow iron mines on the building of a sea wall to keep the sea out of the workings of the mine. It is now proposed to go further seawards on a more ambitious scheme. The new wall will be in the form of an embankment with a puddled trench, and with rough squares of concrete tumbled down the bank as a breakwater for the sea. This new embankment will be 6,750 yards long, and will enclose 170 acres of land, under which the new extension of the mine will be worked. Ore has been proved to exist in vast deposits under this area, and although the cost of the proposed scheme will probably be from £400,000 to £500,000, it is well worth the enterprise, as Hodbarrow ore is the best hematite in England. There is no sign of the exhaustion of the mine, and it is believed that it extends well under the estuary of the Duddon.

**The Death of Mr. Henry Maudslay, M.I.C.E.,** occurred last week. He was a partner in the well-known firm of Maudslay, Sons and Field. During his life he carried out some important excavations in Jerusalem at his own expense. He also rendered much assistance to and frequently received the thanks of the Palestine Exploration Fund. A large portion of the paving which he discovered in Jerusalem was presented by him to St. Paul's Cathedral, another portion being placed in Freemasons' Hall. Mr. Maudslay was a very old and active Freemason, and appropriately was a member of a working engineer lodge, the Vitruvian, No. 87, which for many years met in Lambeth, and was largely composed of "Maudslay's men."

## Surveying and Sanitary Notes.

**The Widening of Cheyne Walk, Chelsea.**—At a meeting of the London County Council last week it was agreed, on the recommendation of the Improvements Committee, that the estimate of £4,400 submitted by the Finance Committee be approved, and that the Council should contribute, on the usual conditions, one-half the nett cost of widening Cheyne Walk, as shown by red colour upon the plan submitted by the Vestry of Chelsea, provided the contribution did not exceed the sum of £4,400.

**L.C.C. Loan and Alterations.**—At the periodical meeting of the London County Council last week, it was decided, on the recommendation of the Finance Committee, to lend the Lewisham District Board £700 for paving works. The same committee recommended, and it was agreed, that the estimate amounting to £1,450 for alterations at the Central Works be approved, and that an expenditure of a sum not exceeding that amount be authorised in regard to alterations in connection with the fixing of additional machinery at the Central Works. The work is to be carried out by the Works Department.

**Street Improvements at Gainsborough.**—Mr. Robert H. Bicknell, M.Inst.C.E., Local Government Board inspector, conducted an inquiry last Wednesday at Gainsborough into an application by the Urban Council to borrow £4,500 for purposes of street reconstruction, and also into an application for leave to deviate from a scheme of street improvement already sanctioned and for which loans amounting to £1,450 had been granted, so as to permit of a new road through Threadgold's yard instead of through Barnaby's Yard. Eventually the inspector said the loan would be granted subject to a satisfactory report that the underground services in each street were examined before the surfaces were reconstructed. The inspector agreed that Threadgold's yard was the better place for a new street, and then viewed the streets under discussion.

**Mr. Lewis Angell,** who for thirty-two years has held the position of borough engineer and surveyor to the West Ham Corporation, was called upon last week by the Town Council to resign, and has been offered a quarter's salary in lieu of notice. The report containing the recommendation was brought up by seven members who had been appointed to consider the reorganisation of the engineer's department. Although no reason for the dismissal was given in the report, it was stated that the committee thought the time had arrived when a younger man should be appointed. The debate in the council was of the most noisy character, and at times members almost came to blows. Alderman Kidd appealed to the committee to reconsider their decision, as Mr. Angell's services were imperative in the coming great sewage dispute with the London County Council. After several disorderly scenes, the recommendation of the committee was carried, with the addition that Mr. Angell be appointed consulting engineer without salary, but that he shall be paid adequate remuneration for any services he may be called upon to perform in connection with work in hand and in the sewage dispute with the London County Council. Notice has been given to rescind the resolutions.

**Improvements at Leicester.**—On Wednesday morning last an inquiry was held at the Leicester Town Hall by Mr. W. O. E. Meade-King, M.I.C.E., on behalf of the Local Government Board, with reference to the applications of the Town Council for the Board's sanction to the borrowing of £31,926 for street improvement purposes, and £2,600 for laying out the Western Park. Mr. Tin-



dall and Mr. Staines conducted the inquiry. —Mr. Tindall explained that the first set of proposals had reference to the purchase of several properties in the High Street for the widening of that thoroughfare, and he mentioned the buildings it was necessary to acquire. The next item was in reference to the purchase of a warehouse and shop in High Street and Cart's Lane, from Messrs. Staines, at the price of £16,975, exclusive of any compensation for disturbance, which would be settled by arbitration. The total ground area was 643 yards, of which 564 square yards would be available for resale. The last item dealt with the purchase from Messrs. Bonner of the premises, No. 50, High Street, for the sum of £2,024. Mr. Tindall added that these purchases completed the widening of High Street on the south side, between Cart's Lane and Highcross Street, but there still remained a small portion to be acquired on the north side. —Mr. Staines stated the case with respect to the loan of £2,600 required for the laying out of the Western Park. The works comprised the construction of an entrance, a roadway through the park, alterations of fences, a band stand, &c. A portion of the work had already been carried out, and the park was opened to the public a few days ago.

## Masters and Men.

**Newcastle Joiners returned to work** last Monday, the masters having decided to give the advance of  $\frac{1}{2}$ d. per hour demanded.

**Dalkeith Plumbers**, at a meeting held last week, resolved to demand an additional half-penny per hour on the present wages scale.

**Masons at Waterville, Ireland**, working on the new works which are being erected at the Commercial Cable Company's station, struck work last week for an advance of 6d. per day on their wages, which are at present 5s. 6d. per day.

**Strike at Gibraltar.**—The men working on the dockyard extension struck last week because water for drinking was refused. When they were paid the same day, one half day's pay was deducted from their wages. They now claim an increase of wages. On the other hand, it is rumoured that the contractors intend reducing the actual wages and making the workmen pay for the water they consume for drinking. Five hundred men are on strike.

**Building Trade Dispute.**—The past week has been very quiet. Since the settlement between the Yorkshire Federation of Building Trade Employers and the London Order of Bricklayers, the National Association of Master Builders have decided to meet the Associated Trade Unions to discuss any questions that may be raised by either party to the conference. If these matters are satisfactorily disposed of, then the Federated Employers will be ready to consider the scheme formulated by the Trade Unions for the establishment of a Joint Conciliation Board, with an ultimate reference of disputed questions to independent referees. The joint conference will take place at the Salisbury Hotel, Fleet Street, E.C., tomorrow, and will be taken part in by twelve representatives from each side.

**The Halifax Joiners' Strike.**—In the Chancery Division of the High Court of Justice, recently, the case of Charnock v. Court, which we reported in our issues of April 12th and April 19th last, came before Mr. Justice Stirling. Counsel for the plaintiff said he was instructed to move, pursuant to special leave given by the Court for the purpose (1) that the action, which had already been ordered to be tried at the Assizes at Leeds during the present month, be transferred to the Queen's Bench Division for that purpose, and that it be tried by the learned judge with a special jury; and (2) for directions as to costs of an application for an

affidavit of documents, which was before his Lordship on July 5, when the costs were reserved pending the filing of an affidavit by the defendants. The application was refused; as to that part of it relating to the affidavit of documents, the judge made no order, except that the costs should be the costs in the action.

**The Federated Trades Unions.**—The first meeting of the National Council of this newly-formed Federation was held at the Westminster Palace Hotel last Wednesday. Mr. W. J. Davis, chairman of the Parliamentary Committee of the Trades Union Congress occupied the chair at the opening of the proceedings. There were 44 unions, with a united membership of nearly 350,000, represented. Mr. S. Woods, M.P., secretary *pro tem.*, submitted a report as to the constitution of the Federation, and the following officials were appointed:—President: Mr. Pete Curran, Gasworkers; vice-president: Mr. Allen Gee, West Riding Textile Workers; secretary: Mr. J. Mitchell, Engineers; treasurer: Mr. J. Maddison, Ironfounders. It was decided to hold an adjourned meeting of the Council at Birmingham in January, when the place for the annual meeting in the following August will be decided. The Council fixed on London for the headquarters, the voting being—London, 162,000, Manchester, 142,000.

**Accident at Christ Church, Birmingham.**—His Honour Judge Whitehorse, sitting at the Birmingham County Court on July 5th, was asked to fix the amount to be paid to one of the workmen who was injured by the falling of the Christ Church roof on February 7th, 1899, an account of which appeared in our issue of February 15th. Applicant, who made his application under the Workmen's Compensation Act, was George Hood, described as a clerk of works and a workman, of 66, Birchall Street, and the respondent was James Benton, builder, of Great Barr Street, who trades as Benton and Son. Mr. Stubbins was for the applicant, and Mr. Ellison was for the respondent. Mr. Duffell represented the Life and Health Assurance Company, who were before the court as third parties. Applicant, who was earning 30s. a week, was on the floor of the church when the beams gave way, and was pinned to the ground by the fallen timber. He sustained a compound fracture of the left thigh, and a comminuted fracture of the left forearm, besides flesh wounds and bruises, causing him to become an in-patient of the General Hospital for two months and since then an out-patient. —Mr. White, the house surgeon, who attended the injured man at the hospital, told the Court that up to a fortnight ago Hood was totally incapable of working. He was now able to do light clerical work, but would never be as strong as he was before the accident. His Honour, in reply to the suggestion by Mr. Ellison that any sum his Honour awarded should be divided—one portion for the time the man was totally incapacitated, and the other portion to be the allowance after that date, which should be something less,—said he was not in a position to assent to an aggregate sum; applicant must leave himself in the hands of the Court. Applicant, recalled, stated that he had a wife, but no children, though he had an adopted daughter to support. His Honour awarded the applicant 15s. a week compensation up to June 20th (less fourteen days after the accident), and 10s. a week for life after June 20th. —Mr. Ellison applied for an order that the Assurance Company should not be entitled in any further proceedings to dispute the validity of the award. —Mr. Duffell pointed out that the company repudiated any liability. —His Honour acceded to Mr. Ellison's application.

**A Dependency Case.**—In the First Division of the Edinburgh Court of Session, last week, before the Lord President and Lords Adam and Kinnear, the case of Robert Murdoch v. Patrick Fagan was stated by Sheriff-Substitute Strachan in an arbitration brought before him, in which he was asked to find the respondent, Patrick Fagan, labourer, of 45, Adelphi Street, Glasgow, entitled to a sum of

£200 under the Workmen's Compensation Act in respect of the death of his son John Fagan, who was fatally injured on January 11th last, while in the employment of the appellant, Robert Murdoch, builder, of 91, Maxwell Road, Glasgow. The respondent averred that he was entirely dependent for support on his son, against whom he had obtained a decree for aliment at the rate of 2s. per week. The deceased John Fagan was survived by a widow, who received compensation from the appellant for the death of her husband. The widow was wholly dependent on the deceased, and the appellant understood that she was the only person entitled to compensation in respect of John Fagan's death. The Sheriff-Substitute held that the respondent was partially dependent on his son, and awarded him £25 compensation. The questions in the case were: (1) Whether the fact that the respondent held a decree for aliment against the deceased and received payment of aliment from him constituted the respondent a part dependent within the meaning of the Act; and (2) whether the fact that the deceased left a dependent wholly dependent on him, excludes the claim of the respondent as a part dependent on the deceased. The Court answered the second question in the affirmative, and found the appellant entitled to expenses. The Lord President said that in his opinion no one who was partially dependent on the deceased could claim compensation under the Act of 1897 if a person existed who was wholly dependent on the deceased. He could not say that was perfectly clear, or at least so clear as might be expected, one way or another, on a point of this importance. But it seemed to be the necessary result of the part of the Act relating to this subject. After summing up the provisions of the Act he answered the second question in the affirmative, and that superseded the first question, which was not debated. Their Lordships concurred.

**Amalgamated Society of Engineers excluded from the Trade Union Congress.**—A very curious situation has arisen in connection with the Trade Union Congress, which is to be held at Plymouth in September next. The Parliamentary Committee of the congress has informed the Amalgamated Society of Engineers that it will not be allowed to send delegates on account of its attitude towards the Co-operative Smiths Society. This means that the 84,000 members of the A.S.E. will, for the first time in its history, be excluded from representation at the Trade Union Congress. It seems that on April 5th, 1898, the Co-operative Smiths, a small society on the Tyne, had a dispute with the firm of Mail, McFarlane and Co., of Newcastle, with reference to the employment of a lad who, they complained, was "put to the fire" at the age of twenty years. Because of this, two members of the Co-operative Smiths struck as a protest. Their places were taken by two members of the A.S.E. The Smiths appealed to the Federation of Unions engaged in the shipbuilding trades, and that body advised them to take advantage of the 20th Standing Order of the Trade Union Congress, which says: "Any society engaged in a dispute, and considering themselves aggrieved by reason of the members of another society taking the place of the men on strike, may report the circumstance to the Parliamentary Committee, who may then take such steps as the circumstances may warrant, and should the charge be proved, the offending society shall be charged with all costs and suspended from representation at congress for two years." The Parliamentary Committee appointed some of its members to inquire into the matter, and these gentlemen, having gone into the charges, expressed the opinion that the A.S.E. took the right and proper course, but they recommended them to withdraw their members from Messrs. Mail, McFarlane and Co.'s works. This the Council of the A.S.E. refused to do, and the Parliamentary Committee, last Thursday, instructed Mr. Woods to inform Mr. Barnes that the A.S.E. would not be allowed to send delegates to the Plymouth Congress, in consequence of their infraction of the Standing Order 20.



Builders' Notes.

**The Aston Union Cottage Homes**, near Birmingham, are being warmed and ventilated by means of Shorland's patent Manchester stoves, with descending smoke flues and patent Manchester grates, supplied by Messrs. E. H. Shorland and Brother, of Manchester.

**The Contracts for Dundee Parish Council Offices**, which were accepted at a meeting of the Offices Committee of the Dundee Parish Council last week, were tendered by the following, being in each case the lowest: Mason work, Mr. Robert Laing; joiner, Messrs. Garvie and Farquharson; slater, Messrs. Alexander and Thomson; plumber, Messrs. William Mitchell and Son; plasterer, Messrs. Kirk and Coutts. The total amounts to £5,557.

**Glasgow's Municipal Enterprise.**—A site was recently acquired on the eastern outskirts of the city for the erection of new gasworks. On the site a large deposit of clay suitable for making bricks has been discovered. A committee of the Corporation recommend that plant, at a cost of £8,000, be erected for the utilisation of the clay. Not only will the bricks necessary for the gasworks be made, but it is estimated that a large profit will be derived from the sale of the surplus.

**Builder Fined for Keeping a Carriage.**—At the Nuneaton Police-court last Thursday John Simpson, contractor and builder, of Nuneaton, was summoned by Hubert Alexander, Inland Revenue officer, for keeping and using a carriage at Nuneaton on June 4th without a licence. He pleaded not guilty, and said the vehicle was one which he used primarily to convey his men to and from jobs some distance out. He did not let it out on hire. Hundreds of builders did the same. Defendant was fined 5s. and 11s. 6d. costs.

**Accident to Painters at a Lancashire Theatre.**—At the Theatre Royal, Ashton-under-Lyne, last week, an accident occurred to three men, employed by Messrs. Binns, of Halifax, while painting and decorating the interior. The men's names are John Midgley, H. Fletcher and James Riley. It appears that they were at work on the ceiling on scaffolding supported by stepladders which had been erected in the gallery. One of the stepladders suddenly gave way, with the result that the three men fell—Fletcher and Midgley into the upper circle, and Riley on to the gallery edge. Riley was seriously injured, and had to be conveyed to the infirmary.

Midgley and Fletcher were removed to an adjoining hotel, being not seriously injured.

**Arbitration Case at Hathersage.**—Mr. Edward M. Gibbs, architect, of Sheffield, published his award last week in an arbitration heard by him as umpire on June 5th and 6th. The case aroused considerable interest in Hathersage and the adjoining neighbourhood. Mr. Ambrose Melland, builder, of Hathersage, claimed that there was a substantial amount due to him from Mrs. E. A. Whitworth, wife of Mr. F. H. Whitworth, of Hathersage and Sheffield, over and above his contract price for the erection of two villas for Mrs. Whitworth on the Castleton Road. Mrs. Whitworth's case was that she had paid Mr. Melland all he was entitled to; and that he was liable to her for certain work which she alleged was unfinished. The umpire has ordered Mrs. Whitworth to pay Mr. Melland the sum of £169 within three weeks, and also to pay Mr. Melland's costs as between solicitor and client, and finds that there is nothing due to her from Mr. Melland.

**Scottish Building Trades' Federation.**—The quarterly meeting of the Executive of this Federation was held on Tuesday, last week, at the Caledonian Hotel, Inverness. Representatives were present from Glasgow, Edinburgh, Dundee, Aberdeen, and other Southern centres. The chair was occupied by the President, Mr. James Leslie, builder, of Aberdeen. The report of the Secretary, Mr. James L. Selkirk, C.A., of Glasgow, on the operations of the Federation during the quarter was submitted, and considered at considerable length. The discussion was of a thoroughly practical kind, and resolutions were arrived at that will lead to a more complete consolidation of the Federation in all parts of the country. In the afternoon the members visited the battlefield of Culloden. In the evening a meeting took place under the chairmanship of Treasurer Ross, President of the Inverness Branch, when addresses were delivered by the delegates dwelling upon the importance of organisation as desiderated by the Federation. Among the speakers were Mr. Leslie, of Aberdeen; Mr. Robert Lamb, of Edinburgh; Mr. Adam, of Glasgow; Mr. Shaw, of Dundee; and Mr. Selkirk, of Glasgow, Secretary of the Federation; and others.

**Fatal Accident Inquiry at Arbroath.**—An inquiry was held in Arbroath Sheriff Court last Wednesday by Sheriff-Substitute Lee into the death of Edward Docherty, jun., who resided at Ladyloan, Arbroath, and was a labourer in the employment of Messrs. J. Paterson and Son, Ltd., contractors, of 610, Pollokshaws Road, Glasgow. From the evidence of workmen it appeared that deceased,

who was employed on the surface of the Arbroath Waterworks extension, had received instructions to send a quantity of bricks and other building materials down the shaft, which is 60ft. deep. It seems that Docherty thought the cage had returned to the top, and fell down the shaft with a hutch and the building material. A juryman asked whether there should not be some definite system of signalling to be observed when the cage was at the bottom of the shaft. The sheriff remarked that acting on the assumption that the place was dangerous he would prefer, instead of any indication which might lead him astray, to look whether the cage was at the top of the shaft before stepping into it. A formal verdict was brought in finding that Docherty was accidentally killed on July 3rd, 1899, by falling down a shaft at the Warslay new waterworks, Arbroath.

**Builders and Contractors at Plymouth.**—The conference of the National Association of Contractors and Master Builders of Great Britain and Ireland was opened last Wednesday at Plymouth. The delegates, numbering between 300 and 400, were welcomed by the Mayor, Mr. J. Pethick, himself a well-known builder. A meeting of the council followed. The half-yearly meeting of the association was held in the afternoon, Alderman W. Holdsworth, of Bradford, presiding. The chairman, in an introductory address, referred to the dispute between the master builders and the plasterers. He regretted that some of the terms of settlement had not been observed by the plasterers, and announced that on the 26th inst. it was proposed to hold another conference with the plasterers with a view of adjusting differences and disputes arising over the interpretation of some of the terms of the previous conference. The principal topic of discussion was the builders' relation with the plasterers, and representatives from Manchester and Bristol complained strongly of the attitude of the latter towards the builders and their neglect to abide by the conditions of the conference terms. The Manchester representatives declared that the plasterers had demanded a rise of a penny in their wages as compensation for the lock-out, and the result was that members of the association refusing this demand had been boycotted for a long time past. It was said that unless the plasterers in these and other districts showed a different spirit from that which was at present being shown a general lock-out would soon be brought about. It was agreed to make a special point of the difficulties at Manchester and Bristol at the forthcoming conference. The association appointed twelve delegates to attend the general conference of trades' unions to be held to-morrow.

COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.		WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
BUILDINGS—				
July	23	Banstead—Latrine, &c....	Managers of School District	C. Sharpe, 11, Old Queen-street, S.W.
"	23	Clouakilly—Closets, &c....	Guardians	W. H. Spiller, Clerk to Guardians, Workhouse, Clouakilly.
"	23	Lancaster—Alterations, &c., to Church		R. Walker, Architect, Windermere.
"	29	Chorley—Cottage Hospital Wing		W. H. Dinsley, Architect, Cleveland-street, Chorley.
"	29	Garw Valley—Workmen's Institute	Ffaldau Trust Fund	P. J. Thomas, Architect, Bridgend.
"	29	Kingston-on-Thames—Alterations to Assize Courts	Property Committee	Borough Surveyor, Clattern House, Kingston-on-Thames.
"	31	Leeds—Raising Roof, &c., at Tramway Depot	City Council	City Engineer, Municipal Buildings, Leeds.
"	31	Leeds—Constructing Dwarf Wall and Extra Storey	City Council	City Engineer, Municipal Buildings, Leeds.
"	31	North Huish—Repairs, &c., to Cattle Houses		T. Wakeham, Court, Avelon Gifford.
"	31	Pontefract—Two Villas, &c....		Garside and Pennington, Architects, Pontefract.
"	31	Taunton—Enclosing Grounds	Town Council	J. H. Smith, Borough Surveyor, Municipal Bldgs., Taunton.
"	31	Kingston-on-Thames—Alterations to Workhouse	Guardians	W. H. Hope, Union Offices, Portsmouth-road, Kingston.
Aug.	1	Hereford—Extension of Platform Roofing		Joint Engineer, Woodside Station, Birkenhead.
"	1	Petersfield—Laundry	Laundry Company Limited	A. J. C. Muckarness, High-street, Petersfield.
"	1	Kingswinford—Partition at School	Urban District School Board	A. Price, Clerk, 34, Moor-street, Brierley Hill.
"	1	Marsh Brook, Salop—Four Cottages	L. & N.W. and G.W. Railway Cos.	Joint Engineer, Shrewsbury Station.
"	1	Strabane, Ireland—Business Premises	Corporation	A. Scott, The Hotel, Garrison.
"	1	Swansea—Electricity Generating Station		Kincaid, Waller, & Manville, 29, Gt. George-st., Westminster.
"	1	Garrison—Business Premises		A. Scott, The Hotel, Garrison.
"	1	Liverpool—Extension to Warehouse	Lanes. and Yorks. Railway Co.	Engineer, Hunt's Bank, Manchester.
"	1	Oldham—Boiler House, &c....	Electric Lighting Committee	A. Andrew, Gas and Water Offices, Oldham.
"	1	Peterston—Cottage	Great Western Railway Company	Engineer, Newport Station.
"	2	Brighton—Twenty-Eight 5-Roomed Artisans' Dwellings	Town Council	F. J. C. May, Town Hall, Brighton.
"	2	Caldbeck—Two Cloak Porches	School Board	W. H. Greenup, Clerk to Board, Caldbeck.
"	2	Darwen—Central Stores	Provident Co-operative Society	Sames and Green, Architects, Knott-street, Darwen.
"	2	Sutton-on-Trent—Laying Floor	School Board	T. E. Day, Clerk to Board, Sutton-on-Trent.



## COMPLETE LIST OF CONTRACTS OPEN—continued.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—Continued.</b>			
Aug. 3	London, W.—Underground Convenience	St. Marylebone Vestry	J. P. Waddington, Court House, Marylebone-lane, W.
" 5	Burntisland—Secondary School	Burgh School Board	R. Little, 4, St. Brycedale-avenue, Kirkcaldy.
" 5	Lisnaska—Five Labourers' Cottages	Rural District Council	J. O'R. Hoey, Clerk, Council Offices, Lisnaska.
" 7	Perth—Gasworks	Gas Commissioners	W. Campbell, 32, North Methven-street, Perth.
" 8	Sheffield—Car Sheds	Tramways Committee	C. F. Wike, City Surveyor, Town Hall, Sheffield.
" 9	Hendon—Repairs, &c., to Workhouse Buildings, &c.	Union Guardians	F. J. Seabrook, Clerk, Union Offices, Edgware.
" 10	Swansea—Engine and Boiler Houses	Harbour Trustees	A. O. Schenk, Engineer, Harbour Offices, Swansea.
" 10	London, S.E.—Alterations to Town Hall	Bermondsey Vestry	Surveyor, Town Hall, Bermondsey, S.E.
" 10	Mayford—Alterations to Swimming Bath	London County Council	Architect's Department, 13, Spring Gardens, S.W.
" 15	Tramere—Additions to Science and Art School	Birkenhead Corporation	C. Brownrigg, Borough Engineer, Town Hall, Birkenhead.
" 18	Filey—Coastguard Buildings	Coastguard Station, Filey	Coastguard Station, Filey.
" 18	Kirkwall, Orkney, N.B.—Coastguard Buildings	Corporation	Watch Room, Coastguard Station, Kirkwall, N.B.
" 21	Southend—Technical Schools and Fire Station	Town Council	W. H. Snow, Town Clerk, Southend-on-Sea.
Sept. 1	Malmö, Sweden—Electric Works	School of Science & Art & Technical Bd.	Clerk, Gasworks, Malmö.
" 12	Croydon—Superstructure of Asylum		Borough Engineer, Town Hall, Croydon.
No date.	London, E.—Thirty Cottages		H. J. Cundy, 91, The Grove, Stratford, E.
"	Stourbridge—Science and Art School		J. M. Gething, Architect, Oxford-chbrs., Kidderminster.
<b>ENGINEERING—</b>			
July 28	Durham—Boiler	Union Guardians	W. Leslie, Clerk to the Guardians, Durham.
" 29	Gisburn—Girder Bridge	Bowland Rural District Council	A. Burrow, Surveyor, Gisburn.
" 29	St. Annes-on-the-Sea—Laying Pipes	Urban District Council	H. Bancroft, 88, Mosley-street, Manchester.
" 29	Rugeley—Lighting Street Lamps	Urban District Council	R. Landor, Clerk, Council Offices, Rugeley.
" 29	Lidney—Water Mains, &c.	Rural District Council	C. E. Walker, Engineer to Council, Chepstow.
" 31	Rosehearty—Flushing Tanks	Town Council	W. Watt, 57, Pittsigo-street, Rosehearty.
" 31	Hapton—Electric Lighting	Parish Council	E. O'Shaughnessy, Clerk, 23, St. Anne's terrace, Padiham.
" 31	Rio de Janeiro—Lease of Railways	Brazilian Government	Commercial Department, Foreign Office, S.W.
" 31	Glasgow—Electric Cables	Corporation	W. A. Chaman, 75, Waterloo-street, Glasgow.
" 31	Edinburgh—Works at Electric Lighting Stations	Magistrates and Council	Professor A. W. Kennedy, 17, Victoria-st., Westminster.
" 31	Saffron Walden—Boring Artesian Well	Corporation	A. H. Forbes, Borough Surveyor, Saffron Walden.
" 31	Taunton—Heating Technical Schools	Town Council	Samson and Cottam, 1, Hammett-street, Taunton.
Aug. 1	Newton Abbot—Reservoir	Rural District Council	R. A. Rogers, Surveyor, Union-street, Newton Abbot.
" 1	Amsterdam—Copper Wire for Telegraphs	South African Republic	F. J. Belinfante, Pavejoengracht, 19, The Hague, Amsterdam.
" 1	Acton and Wycombe—Railway	Great Western Railway Co.	Engineer, Paddington Station, London.
" 1	Keyham—Steel Viaduct	Great Western Railway Co.	Engineer, Paddington Station, W.
" 1	Denbigh—Electric Lighting Asylum	Committee of Visitors	T. L. Miller, 7, Tower-buildings, N. Water-st., Liverpool.
" 1	Wington Vale, Somerset—Light Railway	Great Western Railway Co.	Engineer, Paddington Station, W.
" 1	Tilesford, Throokmorton—Bridge	Pershore Rural District Council	A. E. Baker, Clerk, Union Offices, Pershore.
" 3	Madrid—Insulators	Union Guardians	Post and Telegraph Department, Madrid.
" 4	Fasingstoke—Laying Water Main	Highways Committee	R. S. Wallis & C. Smith and Son, Architects, Basingstoke.
" 7	Blackburn—Steel Bridge	Rural District Council	R. E. Fox, Town Clerk, Town Hall, Blackburn.
" 8	Salford—Eight Dynamos	West Gloucestershire Water Co.	L. C. Evans, Town Clerk, Town Hall, Salford.
" 9	Kingswood Hill, near Bristol—Pumping Plant	Workhouse Guardians	E. D. Marten, The Birches, Codsall, Wolverhampton.
" 9	St. Albans—Laundry Machinery		H. E. Hansell, Architect, Granville-road, St. Albans.
" 12	Ibiza, Spain—Harbour Works	Wandsworth and Putney Gaslight and Coke Company	Government of the Balearic Islands.
" 14	London, S.W.—Gasholder	East Ashford Rural District Council	H. H. Jones, Engineer, Gasworks, North-street, Wandsworth, S.W.
" 28	Willesborough, Kent—Water Supply Works	St. Mary's Vestry, Battersea	Bailey-Denton, Son and Lawford, 9, Bridge-st., Westminster.
" 31	London, S.W.—Crane, &c.		Vestry Clerk, Municipal-buildings, Lavender-hill, S.W.
<b>IRON AND STEEL—</b>			
July 31	Leeds—Wrought-iron Railings and Gates	City Council	City Engineer, Municipal Buildings, Leeds.
Aug. 4	Hastings—Wrought-iron Fencing	Corporation	P. H. Palmer, Borough Engineer, Town Hall, Hastings.
" 12	Rio de Janeiro—Steel Rails, Bolts, &c.		Manager, Central Railway, Rio de Janeiro.
<b>PAINTING AND PLUMBING—</b>			
July 29	Blyth—Painting Police Station, &c.	Northumberland County Council	J. Cresswell, Moot Hall, Newcastle-on-Tyne.
Aug. 1	Luton—Painting, &c.	Town Council	Borough Surveyor, Town Hall, Luton.
" 1	Sligo—Oils, Paints, Brushes, &c.	District Lunatic Asylum Committee	J. Petit, Resident Medical Superintendent, Asylum, Sligo.
<b>ROADS—</b>			
July 28	London, E.—Concrete Flags	Walthamstow Urban District Council	G. W. Holmes, Engineer, Town Hall, Walthamstow.
" 28	Walthamstow—Concrete Flags	Urban District Council	G. W. Holmes, Town Hall, Walthamstow.
" 29	Huntingdon—Granite	County Council	E. Boussow, County Surveyor, Huntingdon.
" 29	Preston—Repaving Roadway, &c.	Commissioners	Myres, Veevers and Myres, 15, Chapel-street, Preston.
" 29	Swinton—Kerbing, Repaving, &c., Road	Urban District Council	H. Entwisle, Surveyor, Council Offices, Swinton.
" 29	Dewsbury—Materials	Corporation	H. Dearden, Borough Engineer, Town Hall, Dewsbury.
" 29	Horwich—Materials	Urban District Council	Surveyor, Public Hall, Horwich.
" 31	Chingford—Tar Paving	Urban District Council	W. Stair, Council's Surveyor, The Parade, Chingford.
" 31	Colchester—Unbroken Granite	Guardians	C. E. White, 57, North Hill, Colchester.
" 31	Harrow—Granite, Gravel and Cartage	Urban District Council	E. Lines, Surveyor, Council Offices, Harrow.
" 31	Isleworth—Paving with Wood Blocks	Urban District Council	W. A. Davies, Surveyor, Town Hall, Hounslow.
" 31	London, N.—Paving, &c.	Hornsey Urban District Council	E. J. Lovegrove, Surveyor, Council Offices, Hornsey, N.
Aug. 1	Tottenham, N.—Making-up Roads	Urban District Council	P. E. Murphy, 712, High-road, Tottenham.
" 1	Litterland—Completing Passages	Urban District Council	W. B. Garton, 25, Sefton-road, Litterland.
" 1	Luton—Paving Works, &c.	Town Council	Borough Surveyor, Town Hall, Luton.
" 2	South Shields—Road Work	Corporation	S. E. Burges, Boro' Surveyor, Chapter-row, South Shields.
" 2	Aldershot—Quartzite	Urban District Council	N. F. Dennis, Surveyor, District Council Offices, Aldershot.
" 5	Sunderland—Materials	Rural District Council	T. Young, Surveyor, Council's Offices, Sunderland.
" 7	Droxford—Hire of Steam Roller	Rural District Council	F. Clark, Clerk to Council, Bishop's Waltham.
" 7	Ogmore—Limestone, &c.	Urban District Council	Council's Surveyor, Office, Blackmill.
<b>SANITARY—</b>			
July 28	London, S.W.—Latrine and W.C. Accommodation	Kensington and Chelsea School District	C. Sharp, 11, Old Queen-street, S.W.
" 31	Clayton-le-Moors—Surface Water Drainage	Urban District Council	A. Dodgeon, Surveyor, Council Offices, Clayton-le-Moors.
" 31	Erdington—Intersecting Sewer	Urban District Council	H. H. Humphries, Dis. Surveyor, Public Hall, Erdington.
" 31	Isleworth—Cast-iron Pipe Sewer	Urban District Council	W. A. Davies, Surveyor, Town Hall, Hounslow.
Aug. 2	South Shields—Sewer Work	Corporation	S. E. Burges, Boro' Engineer, Chapter-row, South Shields.
" 4	Wanstead—Stoneware Pipe Sewers, &c.	Urban District Council	Surveyor, Council Offices, Wanstead, E.
" 24	Plymouth—Sewerage Works	Corporation	J. Mansergh, 5, Victoria-street, Westminster.
<b>TIMBER—</b>			
Aug. 1	Wandsworth, S.W.—Jarrah Wood Blocks	Board of Works	The Clerk, Offices, East Hill, Wandsworth, S.W.
" 10	London, E.C.—Ash Butts and Scantlings, &c.	General Omnibus Co., Ltd.	R. T. Kingham, Sec., 235, Upper-street, Islington, N.

## COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
Aug. 1	Halifax—Twelve Shops	£50, £25	Barstow and Midgley, Solicitors, 8, Harrison-road, Halifax.
" 8	Sydenham, S.E.—Band Stand	£31 10s., £15 15s., £7 7s.	W. Gardiner, Secretary, Crystal Palace Co., Sydenham, S.E.
" 17	Batford—Sewerage and Sewerage Disposal Schemes		C. J. Spencer, Clerk to R.D.C., Public Offices, Batford, Notts.
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Other appointments for intermediate Sales will also be arranged.

Thursday, July 27	Thursday, Oct. 26
Thursday, Aug. 3	Thursday, Nov. 16
Thursday, Aug. 10	Thursday, Nov. 23
Thursday, Sept. 21	Thursday, Dec. 7
Thursday, Oct. 12	Thursday, Dec. 14

Messrs. FAREBROTHER, ELLIS, and CO. publish in the advertisement columns of "The Times," "Standard," and "Morning Post," every Saturday a list of their forthcoming Sales by Auction. They also issue on the first of every month a schedule of properties to be let or sold, comprising landed and residential estates, farms, freehold and leasehold houses, City offices and warehouses, ground-rents, and investments generally, which will be forwarded free of charge on application.—No. 23, Fleet-street, Temple Bar, and 18, Old Broad-street, E.C.

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No. XXXIII., Vol. VI., of

## THE ARCHITECTURAL REVIEW,

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AUGUST 2, 1899.

No. CCXXXIV.

## An Architectural Causerie.

### An Architect's High Calling.

It is a commonplace amongst architects to say that none should enter the ranks of their profession unless possessed of special aptitude, and that those who are unpossessed of it and yet strive to enter drift almost of necessity into surveying and building. And thus it is in reality an accepted axiom, though men rarely put it in those words, that architecture is more than a mere business or profession—a calling of high order, which only the comparatively few have been given the necessary talents to follow with success. Granted that the talent exists, training may do much to aid in its development; but the power of designing with excellence of harmony buildings which are to stand for centuries to come as monuments of the genius of the present generation is one which no amount of training will develop if it has not been implanted in the nature of a man at his birth. On the other hand, if its presence be recognised its exercise becomes imperative, the possession of the talent, as of any talent, carrying with it the responsibility for its employment, and this in no niggardly spirit, but to the utmost extent that circumstances will permit. We accept this freely as regards the musician, the painter and the sculptor, yet the architect's work is more lasting than that of any of these, appealing to as high emotions, mutely but surely influencing, for good or evil, during decade after decade and century after century. We admit it freely of the medical practitioner, yet the architect's work, properly carried out, conduces to the health of the community to a greater extent than does the doctor's. We admit it, too, of the minister of religion; yet the architect's calling is not far behind even his in its nobility and its responsibilities. When dealing with secular buildings even, it is the architect's bounden duty to teach of honesty, of purity, of the everyday virtues of domestic and business life; but when dealing with buildings intended for the higher purposes of religion, his responsibilities become great indeed. Worship, glory and honour—the elevation of the spirit of the created in praise to the Creator—all have to be symbolised; the young and the old, the joyous and the sorrowing, all have to be helped. Whether he be designing a simple country church, or a great cathedral, the nature of the work demands the exercise of the architect's fullest powers, that he may render back with interest to Him who gave it the talent committed to his care. Before undertaking work of so high a character, so lasting, and so full of influence, the talent should have been developed

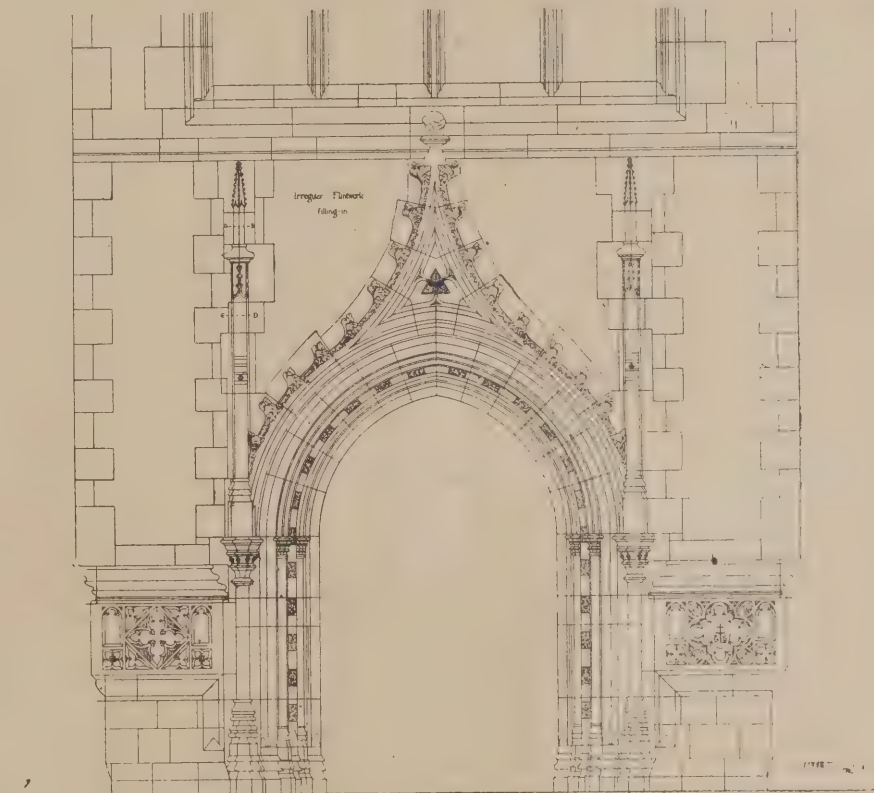
by unremitted training through many years, that when called upon to exercise it the architect should be found worthy of his high calling.

G. A. T. M.

### Commercial Architecture.

THAT a purely utilitarian building can, by the application of certain principles in art, be made satisfactory and pleasant to the eye; that a single material, simple design, and severe outline can produce a total effect which is generally good and often excellent—these are things which the public are loth to believe, yet eminently true. Forty years ago the rebuilding of "The City"—the old red or brown brick Palladian city which had arisen after the Great Fire—was commenced, and a fine commercial quarter arose, of which Cornhill may be taken

generally thought. A considerable number may be seen from the bridges or from a river steamer, modest structures in brick, plainly indicating their purpose by the large doors on every floor and cranes for hoisting or lowering materials, but relieved by a simple cornice and a few mouldings, the main lines of the building running vertically upward in brick, and having the effect of pilasters. Rising above wharves and steamers and tan-sailed barges, their architectural effect is admirable; they illustrate the power of simplicity and truthfulness. Some, indeed, are ugly, but in these cases we can always detect some want of proportion, some palpable mistake in design or the introduction of some misplaced ornament; in many cases they have been spoilt by huge tawdry lettering for advertising purposes, but take it for all-in-all, Thames-side can show some good specimens of simple commercial architecture. A little-known thoroughfare to most people is Southwark



DOORWAY AT LAVENHAM CHURCH, SUFFOLK. DRAWN BY PHILIP J. TURNER. (See p. 383.)

as a type, streets resembling those of Genoa with houses largely modelled upon the palaces of Italy, and, like them, often of rich and ornate material, the outward expression of the wealth of London, but restrained as a rule by the limits of proportion and fitness. These buildings were commercial in the sense conventionally attributed to the word in London; they were banks, offices of insurance companies, exchanges, and large private firms. But there is another kind of commercial architecture, more literally utilitarian, that of the warehouse and the factory, of the great buildings that line our docks and wharves and streets, which though busy are almost as little known to the average city man as they are to the clubman of the West End. Of these London contains more examples carefully worked out than is

Street, which was cut thirty years and more ago right through a maze of small dingy streets between the Surrey end of Blackfriars Bridge and the Borough, near London Bridge. It is a purely commercial street and intended from the first to be so, wide and well-proportioned; unattractive as being without shops or amenities of any kind but useful as showing that utilitarian structures are not necessarily ugly. It is specially worthy of note that many of the fronts are Lombard or Gothic, the small round arch of the former lending itself perfectly to modern purposes and especially to street fronts; the pointed arch of the latter is here evidently drawn from the same source—that is from northern Italy. Still more effective designs might have been possible however if our modern Acts of Parliament did not so systematically discourage all bold projections and thus prevent any striking effects of light and shade.

J. C. P.



## On Reflection.

### The New War Office Buildings.

A MEMORIAL has been circulated among the members of the House of Lords, at the apparent instigation of Lord Wemyss, and extensively signed, petitioning the Government to have the architect's design for the War Office buildings supplanted by an adaptation of Inigo Jones' design for Whitehall Palace—"which it is believed," says the memorial, "might without difficulty be made to meet all War Office requirements." It is possible that Lord Wemyss may have investigated the matter, and that he holds this belief, but it is incredible that the other signatories can have satisfied themselves of the plausibility of the suggestions made in the memorial. The action of the noble lord is not complimentary to the capable architect whose design is thus all at a discount; but it is questionable whether his reputation is so much concerned as the fame of the great seventeenth century architect. It is a distinct slight to the memory of Inigo Jones that a group of persons who have advertised their ignorance of the essentials of Architecture, as these memorialists have done, should declare an admiration for his design. We may imagine the poor shade wringing its shadowy hands and exclaiming after Johnson, but with a very different relish: "Have I then done something that *they* can understand!"

### An Opportunity that will be Missed.

A RECENT correspondent to the *Morning Post*, who preserves his anonymity by signing himself "Piccadilly," made a well-considered suggestion which we hope will be adequately presented before the proper authorities, and at least receive the consideration it undoubtedly merits. "The official position occupied by the Royal Institute of British Architects," says the writer in question, "entitles it to possess sufficient accommodation to display adequately the works of its aspirants to architectural fame when occasion requires," and he suggests that the Government, on the completion of the proposed removal of the London University to quarters at South Kensington, should instal the R.I.B.A. at Burlington House. Although the reasons the writer gives for his recommendation are precisely the wrong ones, and are destitute of any persuasiveness, the idea is useful and apt. It is useful and apt because it reminds people that a wider recognition is due to Architecture, and because it constitutes a plausible illustration of what would be conceded if Architecture held in England a proper place among the recognised arts. For all direct and practical purposes the idea is barren and useless. A brief for the Home for Lost Dogs, in a similar claim, would promise better than one for architecture in the present condition of culture in England. But by every means let this suggestion be urged with all possible conviction and gravity. It is impossible; but impossible things become possible and easy by dint of time and tenacity of purpose in much asking; and perhaps the next tenants of Burlington House may retire one day in favour of Architecture.

A GREAT deal has been spoken of late, Latest Intelligence! mainly by prejudiced or irresponsible people

it is true, of the decay of the building crafts; but for a final revelation of the dark and deadly fate which pursues those who adopt the habits of independence and easy self-indulgence, which characterise the modern artisan, we have to thank Mr. John Burns, M.P. The world's moralists have ever been frantically concerned to persuade a reluctant people that a too great moral latitude in matters of conscience and ideals, must, in any condition of life, call forth a corresponding physical degeneracy and incompleteness in the back-sliders; and in the case of the building trades, it would seem that Nemesis has claimed her own with awful precision and swiftness. Mr. John Burns' revelation is the more worthy of credence for being accidental, as will appear, and for being innocent of prejudice. There is no intimation that Mr. Burns has been building himself a house, for instance, or testing a drain. It came, about, then, that a party of excursionists from Stoke visited London and included the House of Commons in their round of sightseeing. Mr. John Burns saw them on his way to the House, covered them with an observant eye, and described them in the interests of his side of the debate to urge further legislation for the protection of those employed in the pottery trade. He said that with the exception of a contingent of bushmen from the wilds of Timbuctoo, he never saw a body of more miserably diminutive people. He said that on every face there were marks of suffering and bad conditions. He said they had heads like sugar loaves and shoulders like champagne bottles. According to the "*Staffordshire Sentinel*," however, which ought to know, the subjects of Mr. Burns' compassionate eloquence were not "potters" as he supposed, but members of a building trade picnic.

### An Architectural Side Show.

NOT the least of the wonders which may be looked for by visitors to the Paris Exhibition next year is a perfect house. A group of French architects and artists in various of the crafts and fine arts, propose to erect in the exhibition grounds a "*type de maison moderne*," which shall combine all the highest excellencies of science and art to which civilisation has recourse in procuring beauty and convenience for a dwelling-house. It is hard to imagine a more illusionary and will-of-the-wisp enterprise than this of building a perfect house. The perfect house is no more and no less than that house which, being soundly constructed, perfectly expresses the tastes, and fulfils the needs of those it is designed to accommodate. No house can therefore assume to any degree of perfection, save from the point of view of a very limited number of persons; and we are surely agreed that the house which satisfies the general tastes and necessities of the largest number of persons, must be very far from perfection, for it must disregard just that individual character which associates it with its human inmates, and which constitutes the essence of a well-designed house. Indeed, we all know the average house, and the more we know of it the wider it departs from our idea of perfection in a house. It stands in long ranks side by side with itself, in streets that are called "avenues," or "crescents," or "terraces," but never "streets." It is known as a "desirable semi-detached villa," and generally has a bay window and shares the name of a bloody battle or a great general

with its twin. A fish store—even a cow house—may be dealt with in generic terms, but a house never. All that the French architects may look to achieve in their enterprise will be to erect a house which shall fulfil hygienic conditions as now best understood, and shall have a plan which offers all convenience, without hindrances, to the modern type of man, who all the world over now springs up of mornings and scrambles to catch a train, flapping a newspaper. They may also decorate it upon sound principles of appropriateness and elegance, but it can hardly be hoped that such a temptation to produce something garish and ambitious of notoriety will be resisted. A large paying public would be disappointed else. Indeed, the whole project smacks somewhat of that gate-money foresight which has characterised many exhibitions of latter years. Nevertheless, the little building will be a curiosity to all, and instructive to many. Most people who see it will surely go and look inside it, and all who examine it will come away with a distinct idea of some things that are imperfections in a house. A negative virtuousness truly, but something not to be unthankful for in these philistine days.

## OUR NEW VOLUME.

Next week's number of *THE BUILDERS' JOURNAL AND ARCHITECTURAL RECORD* will commence a new volume, and will afford an admirable opportunity for new readers to begin subscribing to the Journal. With the beginning of the present volume the Journal was permanently enlarged, and a number of improvements were introduced, which, judging from the expressions of opinion that reach us from time to time, have been very generally approved.

The new volume which begins next week will prove even more attractive, we believe, than the current one has been.

Among other important and interesting articles that have been arranged for may be mentioned the following:—

### MODEL QUESTIONS AND ANSWERS

A series of questions actually set at recent examinations in architecture, surveying, and building construction, with model answers by G. A. T. Middleton and R. W. Carden, Associates R.I.B.A. These should prove invaluable to students, as the answers will in all cases be worked out from a practical point of view, the conditions and limitations of an examination being taken into consideration.

### FORTHCOMING COMPETITIONS

Notes on competitions that have been announced, and the conditions that govern them. These should prove useful to all who take any interest in architectural competitions. We shall continue as heretofore to publish from time to time criticisms on competitions that have taken place.

### WITH GREEK BUILDERS. BY JOHN A. MARSHALL.

This will be a series of well illustrated articles, explaining the constructive principles which governed the erection of the architectural masterpieces of ancient Greece.

### MOSAIC WORK. BY GEORGE BRIDGE.

In these articles both the artistic and the constructive sides of the craft will be treated in a comprehensive and thoroughly practical manner.

### NEW PATENTS.

A column devoted to brief abstracts of New Patents, specially prepared for *THE BUILDERS' JOURNAL AND ARCHITECTURAL RECORD*, is a new feature that will be introduced with the next number, and will no doubt prove generally useful.

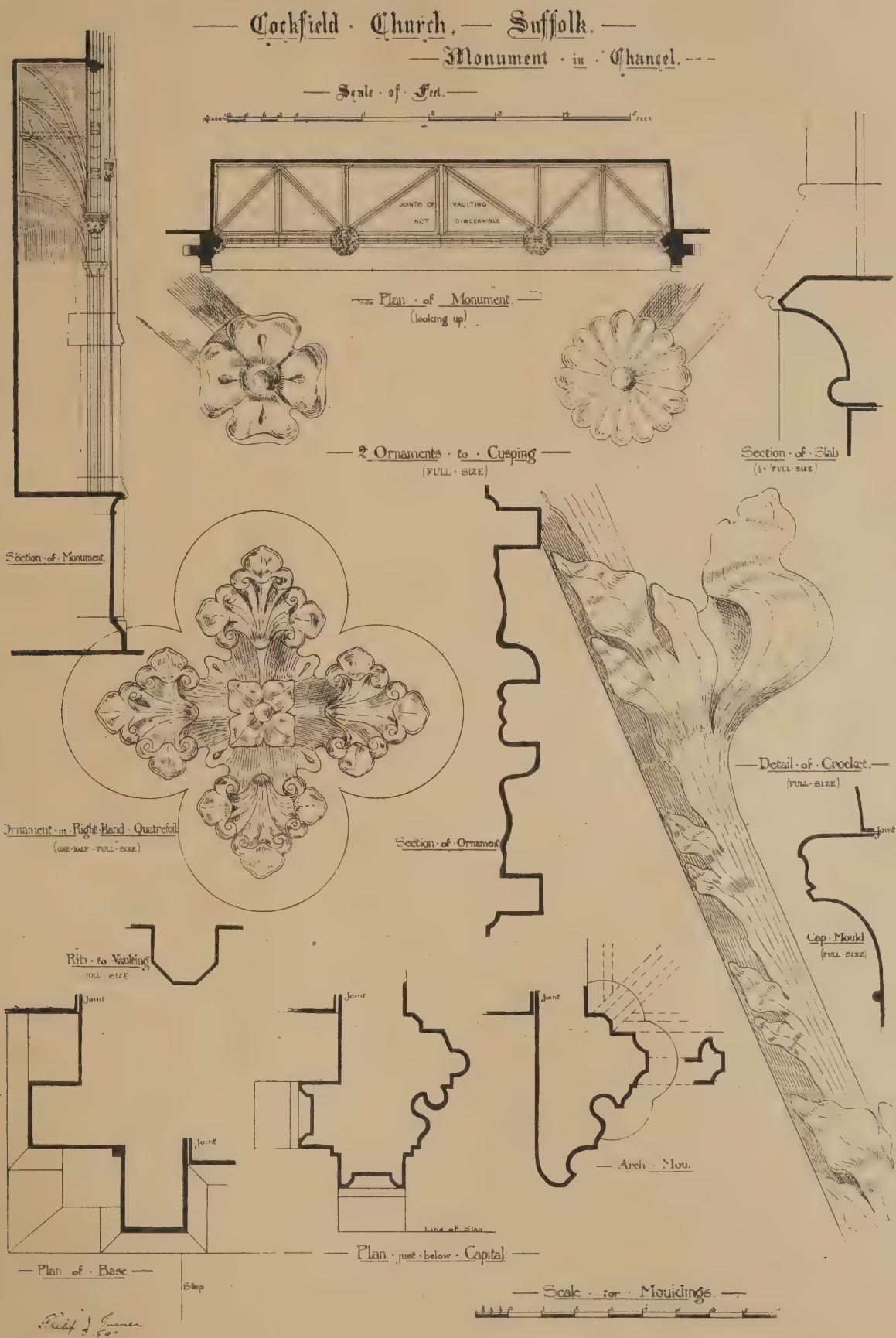


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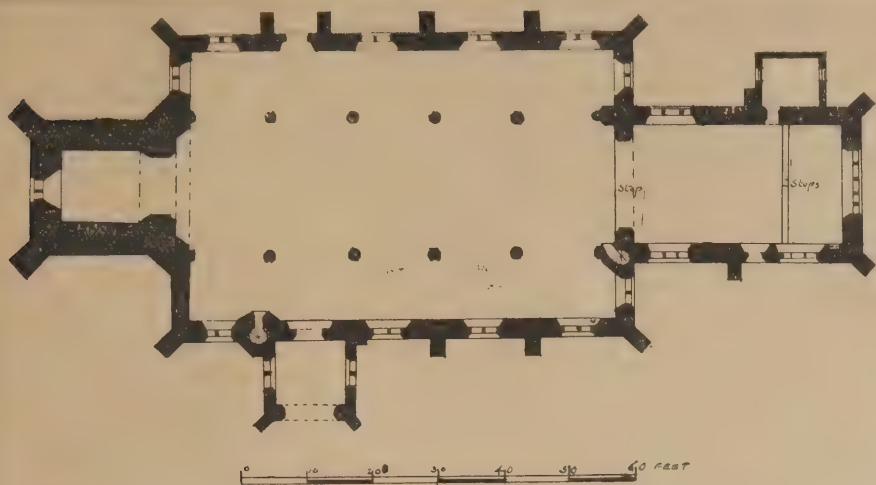






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SKETCH PLAN OF WOOLPIT CHURCH. DRAWN BY PHILIP J. TURNER.

## NOTES ON SOME SUFFOLK CHURCHES.

By PHILIP J. TURNER.



Stone Bench End at Woolpit Church.

**WOOLPIT CHURCH**, about eight miles from Bury St. Edmunds, is a decorated building with numerous Perpendicular additions, of which the south porch is the most important. It is a beautiful and elaborate design, richly groined with a parvise over it and fine open parapet. The interior, however, is deserving of the most attention. A lofty clerestory added during the Perpendicular period is spanned by a splendid double hammer-beam roof of the most costly description. The wall pieces are wrought into niches filled with figures of saints, supported by angels with expanded wings. The aisle roofs are of the same date as those over the nave, and equally rich in detail; happily, in this instance, they have all been well restored and appear now in good preservation. The seats are very perfect and beautiful, and are panelled and carved on the backs as well as the ends; the rood screen also is an excellent specimen of Perpendicular work, though somewhat mutilated. The easternmost window in the south aisle is lowered to form the sedilia, and an elegant piscina is cut out of the angles of the jamb, which is supported by a small shaft. The masonry of the church is composed of stone dressings with flints laid in random courses. The tower was struck by lightning about twenty years ago, and a new one has been built on the old site.

**ELMSWELL CHURCH**, which adjoins the parish of Woolpit, stands on the ridge of a high hill, and is principally Perpendicular in style. The tower is a grand example of the well-known

Suffolk flint work. The sacred monograms, Maltese crosses, catherine wheels, pots of lilies, and other devices which are worked on the buttresses, and round the base are executed with much grace and freedom. The church was extensively "restored" in 1872, and it was then that the old roofs and some of the screens were removed, so that the church appears to have lost much of the interest it originally had. In the south aisle is a chantry with a piscina and a very good Perpendicular carved oak screen. Against the east wall of this chantry is erected a very fine Renaissance monument to Sir Robert Gardiner, who died in 1619, and who was during the reign of James I. Chief Justice of Ireland. The Knight is represented life size, reclining under a canopy, with the costume and face coloured.

The font is a very good and interesting example of the Decorated style, octagonal on plan, and is supported on four figures of angels, the basin being panelled with shields, five of which are charged with the letters H E D G E consecutively, which form probably the name of the donor. There are some interesting oak benches in the aisles, typical of those with which the county abounds. These are of rather earlier date than those at Woolpit. Two of the poppyheads are here illustrated; they are somewhat different in shape from those at Woolpit, and are evidently of earlier date.

**LAVENHAM.**—Of all the fine churches to be found in Suffolk, that at Lavenham, dedicated to St. Peter and Paul, is generally considered to be the best.

With the exception of some decorated work in the chancel and vestry the whole church is a splendid design in the Late Perpendicular style, and was built between the years 1480 and 1530 (contemporary with King's College Chapel at Cambridge) by the De Veres, Earls of Oxford, and members of the Spring family, whose arms are dispersed in flint and stone-work all over the building. At the time the church was being built, Lavenham was a most

prosperous place, being the centre of the woollen industry, and it is on that account, no doubt, that so many fine churches are found just in this district.

The church is constructed of Free stone with very curious decorations of flint work. The east end between the altar rails is the oldest part of the building, and almost the only remaining part of the earlier church. The junction of the old and new work is very evident. The fine chancel arch and piers are also in the decorated period, and also the east window, which is an excellent example with fine flowing tracery (five-light). In the chancel are some fine old stalls with misereres.

Attached to the east end of the chancel is a vestry built by Thomas Spring the second, the date of which is recorded on a brass to his memory 1470-1486. On either side of the chancel are chapels, that on the south side is 35ft. 3in. by 20ft. 5in. wide. The roof of this chapel is very good; the cornice composed of foliage and shields bearing the arms and initials of Thomas Spring.

The woodwork throughout the church is singularly fine, and it is impossible to speak too highly of it, both as regards design, variety of detail, and the great merit of the workmanship.

The rood screen is of oak, and is the earliest woodwork in the church. In the north aisle is a chantry chapel (marked A on plan) enclosed with screen work of the most exquisite details. It is a rare specimen of the semi-classic style

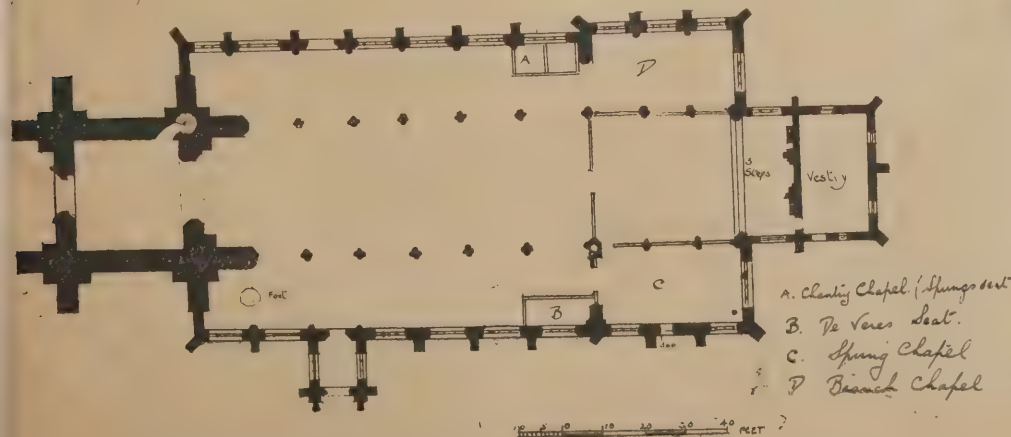


LAVENHAM CHURCH, SUFFOLK: SKETCH OF TOWER. BY PHILIP J. TURNER.

which came into fashion in the reign of Henry VIII., and is probably the work of Flemish workmen. This chapel is supposed to have been erected about 1530.

The nave measures 91ft. 6in. by 25ft. 9in., and is divided into six bays of very beautiful proportions. The capitals of the pier shafts are finished with a delicate Tudor flower, and the spandrels of the arches are filled with good panelling, above a rich cornice and a band of quatrefoils in lozenges and blank shields alternately. The roof of the nave was formerly painted. The clerestory has large three-light windows with transoms. The higher lights still contain traces of stained glass. The south porch is very rich in architectural and heraldic ornamentation. The front and buttresses are panelled, the decoration being quatrefoil and trefoil shaped flowers, similar to those repeated on the battlements.

The great feature of Lavenham Church is its unrivalled tower, 141ft. high and 42ft. wide. The interior of the tower is decorated with an arcade, beneath which runs a stone bench. A newel staircase with a good door, and handrail cut out of the solid masonry leads to the belfry



SKETCH PLAN OF LAVENHAM CHURCH. DRAWN BY PHILIP J. TURNER.



which boasts of a peal of eight bells second to none in the county. The large western doorway (illustrated on p. 381) has a segmental pointed arch, the soffit of which is richly panelled with quatrefoils. On the exterior the doorway is deeply recessed; it has an ogee dripstone beautifully crocketed, which passing through the string course appears again on the upper side, and was originally terminated by a finial. The mouldings are somewhat poor, and the bases are exceedingly stilted. The tower buttresses are richly panelled the whole way up, and all have shields bearing arms.

Round the base of the tower is a rich panelled band in compartments, which are ornamented with foil work of splendid and varied detail. The tower appears to have been left in an uncompleted state, and now ends in a parapet having panels with coarsely executed shields bearing the arms of the Spring family. The parapet to the nave is a pierced battlement with openings partly filled up with a large conventional leaf, perhaps a Tudor flower, rising upwards, the intermediate spaces enriched with boldly carved foliage in square panels. The coping is continuous. The length of the church is 156ft., the width 68ft.

COCKFIELD CHURCH, which is about three miles from Lavenham, although not so well known as the latter, is full of interest, and is principally of the Decorated style, with Perpendicular additions. The details throughout are very good, especially the chancel, with its richly moulded string courses, plinths, &c., and the groined niches in the buttresses, all in the pure late Decorated style. The Tower is 71ft. high, and of good proportion. There is an octagonal staircase on the south side, which is not placed at either of the angles, but near the middle.

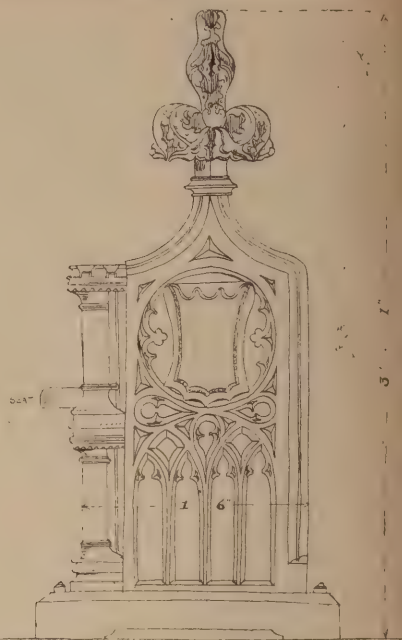
It is noticeable that the clerestory windows are not over the centres of the arches, but over the centre of the piers, and also that there is an additional window on each side, in the space nearest to the chancel arch. The east window is large, but the tracery has been restored. Against the north wall in the chancel is a fine altar tomb (illustrated on page 386) of late fourteenth century, panelled, and with shields; over it is a canopy of fine design, divided into three bays, and by

buttresses with rich pinnacles. There is a great variety of detail about this monument, but it is somewhat disfigured by whitewash. To whom this monument was erected is unknown; an ancient manuscript says it is erected to a knight named Howard. The matrices of the escutcheons are now coloured black. The tomb itself is of Purbeck marble, while the canopy is a soft limestone. The pulpit is a typical Jacobean specimen. There are a few good oak stalls in the chancel.

The roofs of the nave and aisles are simple in construction, but show an unusual amount of finish as regards mouldings, carvings, and applied colour. The nave roof is of pure Decorated date, of a good pitch, each principal truss being formed of a tie-beam, with king post above, from which spring curved braces, two being in connection with the longitudinal ridge under the collar beams, and the other two abutting against the upper strutted rafters, which help to make up the general polygonal form of the roof. The nave piers are octagons, with moulded caps. The tower buttresses are square, two of which, next the nave, project somewhat awkwardly on each side of the first nave piers. The font is a plain octagon.

**A New Baptist Sunday School at Cullingworth** has been erected at a cost of £1,650. The building has a seating capacity for between 500 and 600 persons.

**The International Art Exhibition.**—The promoters of the International Art Exhibition gave an entertainment last Wednesday evening in the galleries in aid of their new Art movement. A scene from "Beauty's Awakening," the masque recently performed by members of the Art Workers' Guild at the Guildhall, was enacted, the scene being that of the "Dance of the Forest Leaves." The music accompanying the dance was performed on ancient instruments, played chiefly by the Dolmetsch family. After this a concert of old English music was given on ancient instruments by the Dolmetsch family. Another concert and entertainment was given in the outer gallery, where distinguished musicians, actors, and actresses entertained a large audience.



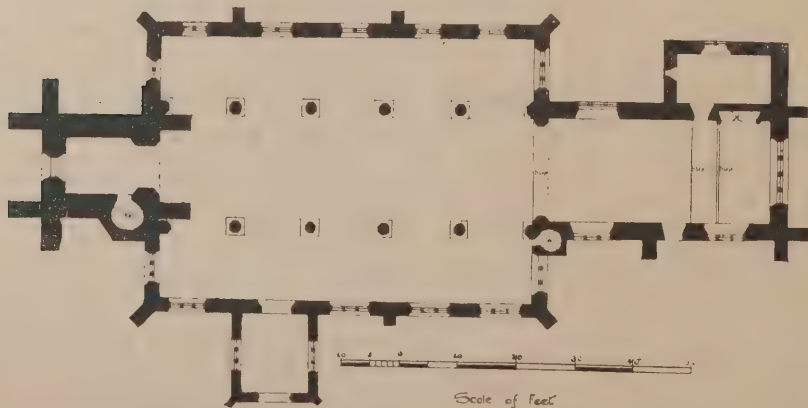
ELMSWELL CHURCH, SUFFOLK: SKETCH OF BENCH END. MEASURED AND DRAWN BY PHILIP J. TURNER.

## ROYAL ARCHÆOLOGICAL ASSOCIATION.

### RESTORATION AS A DESTRUCTIVE ART.

THE meetings for the year 1899 of the Royal Archaeological Institute of Great Britain and Ireland, were opened last Tuesday week at the Town Hall, Ipswich. At the outset, the chair was taken by the town clerk, Mr. Will Bantoft, in the absence of the mayor, Mr. E. P. Ridley. The company then visited places of interest in the town. The first place visited was Christchurch Mansion, of which an interesting description was given by Mr. J. S. Corder, who acted as guide to the party. St. Margaret's Church was next visited. The ancient house, in the Butter Market, was the next place of meeting. The Rev. J. T. Micklethwaite drew particular attention to the mouldings, and it was suggested by Sir Henry Howorth that these were a union of Italian and English; but Mr. Micklethwaite thought they were purely English. Through Wolsey's Gate, the company were admitted to the lawn in front of Mr. J. T. Rainer's residence, and here Miss Nina Layard read a valuable paper, giving the results of recent researches with regard to the great Cardinal's project in his native town, and the limits of St. Peter's Priory. At St. Peter's Church, Mr. V. B. Redstone read a few notes on some old wills. Mr. Micklethwaite showed many evidences that this was an old church of the fourteenth century, that had been restored and added to, but not pulled down and re-built, and he described the font as one of about 800 years old, and similar to others, wrought in Belgium, which are to be found at Winchester and Southampton. St. Mary Key was also visited, with other objects of interest in the locality.

In the evening the opening meeting of the Historical and Antiquarian Section was held at the Town Hall, under the presidency of Sir W. Brampton Gurdon, K.C.M.G., M.P. Sir Brampton Gurdon's discourse was on "Restoration as a Destructive Art." It had been very justly said by one of the most distinguished members of the County Archaeological Society that the modern restorer was a far more dangerous person than Dowsing, because Dowsing's work was only partial, whereas the restorer aimed at being thorough—that was, at destroying every vestige of architectural beauty and historical interest. They all agreed that a copy of an antique statue, or a picture by an old master was not so valuable as the original, and that a restored statue or



COCKFIELD CHURCH, SUFFOLK. MEASURED AND DRAWN BY PHILIP J. TURNER.



picture was reduced in value by the process, but they did not all seem to recognise that the same held good of an architectural building. In mediæval times the artists carried out the work themselves. Now we had only designers or modellers, and workmen carried out their directions with mathematical exactitude, with square, line, and compass. It was the difference between a beautiful, flowing hand, expressive of every word that it wrote, and a copy by a lawyer's clerk, or, worse still, a type-writer. He felt that, much as we might regret some of the mutilations which occurred during the Commonwealth, probably a good many of the pictures and ornaments swept away by Dowsing were only tawdry, and objectionable in other ways; and he (the speaker) could not help hoping often that some modern Dowsing might arise who would destroy some of the interpolations introduced by the so-called "Restorer." No doubt, anyone who wished to earn a crown of martyrdom would deserve most highly of posterity if he were to go round the churches of this country with a pocket full of stones, and destroy nine-tenths of the coloured windows, the tasteless designs, the crude greens and blues of modern glass,—the product of the half-century now drawing to a close—much of which was literally only painted. It was not only the bad glass that was objectionable, he urged, but its introduction into buildings where it was altogether out of place. He supposed they were all agreed that what was called "cathedral glass" was an abomination. It might be the saving, he contended, of many interesting and beautiful relics of the past if bishops would instruct their examining chaplains to set papers in Architecture as well as theology. What they wanted was to make generally known the simple rules of art and good taste—the ignorance and vulgarity of the present day were appalling. A very abominable practice of the modern restorer was stencilling. Of the cheap, nasty styles of so-called decoration this was the nastiest. It was not suitable for church decoration. In Hadleigh the whole chancel had lately been stencilled in such a way that it exactly resembled the farthing a yard paper which they saw in cottage bedrooms. There was another point where, in his opinion, the church decoration failed, and that was in the terrible sameness of the church furniture—the same benches were reproduced in almost the same form in every village church. It was really quite a relief now-a-days to find oneself in an old-fashioned "churchwarden" building, with a three-



ELMSWELL CHURCH, SUFFOLK: POPPY HEADS IN SOUTH AISLE. DRAWN BY PHILIP J. TURNER.

decker, high pews, and a gallery. He did not pretend to admire the style, but it was at least a change from the everlasting pitch-pine seats, and he wished that some of these churches could be preserved as specimens of their period. There was, until recently, a fine example at Orford—the regular old Corporation pew, the gallery advancing well into the nave. At Coddensham there were, not long ago, exceedingly beautiful carved oak pews; but they had all been swept away, and replaced by the worst abomination of all—chairs. There was an exception in one corner, where Lord de Saumarez, with a patriotic instinct which did him infinite credit, refused to allow his own seats to be removed, and they remained an isolated evidence of the beautiful work once to be seen there, and which was now in all probability adorning the house of someone who had the discrimination to buy it. The "restoration," as distinct from the preservation of screens, seemed to be another mistake. The attempt

to restore in cases where they were not even certain what had been destroyed was generally, if not always, a failure. Norfolk and Suffolk were peculiarly rich in fine buildings, both ecclesiastical and domestic, and it was their duty to use their best efforts to preserve them, not only by arresting decay, but by stopping the ruthless work of the so-called "Restorer." It was a matter of great regret that so many beautiful old halls were being gradually allowed to fall into decay, or were spoilt by the introduction of bow windows and other horrors. Why people of independent income did not try to purchase these exceedingly comfortable, well-built houses, instead of erecting for themselves ugly, jerry-built, and very uncomfortable cockney villas, he had never been able to understand.

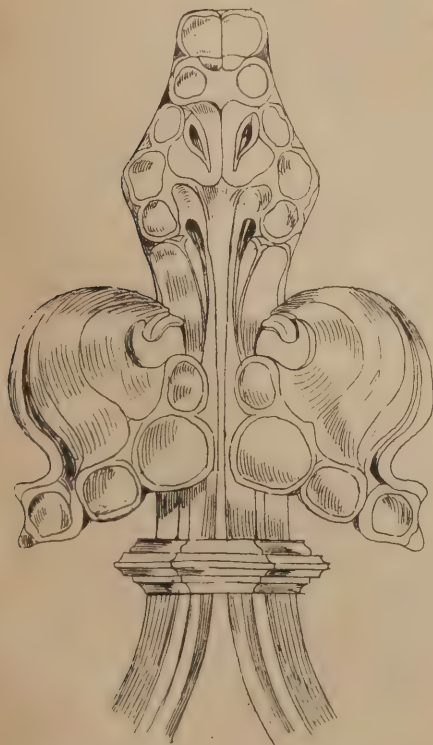
Sir Brampton Gurdon then concluded his remarks by stating that what he specially wished to press on the meeting was:

1. The study of architecture. To try and induce others to take the same interest in architecture that they did themselves; it was so engrossing and attractive a study that it could hardly fail to interest if once taken up. Perhaps it might be taught in secondary schools.

2. To take the greatest care of their monuments and they would not want to restore them. A few timely repairs to the roof, a few sticks and leaves cleared from the water-courses, might save both roof and walls from ruin. Above all, a sharp watch should be kept at Easter, Christmas, and Harvest-time, when the entrance of nails and hammers into the Church should be forbidden. A really fine bit of carving should never be broken off, because it got in the way of a sprig of holly.

3. That when reparations were necessary, new stones might be substituted for decayed ones, when they were absolutely essential to the safety of the fabric; portions likely to give way might be propped with wood or metal; sculptures ready to detach themselves might be bound or cemented into their places. But no modern or imitation sculpture should be mingled with ancient work; and no attempt should ever be made to repair or restore carving, painting, or stained glass.

4. It often happened that those who wished to preserve some ancient part of the church felt, that their want of archaeological knowledge disqualified them from opposing the more fully informed architect. They should not let themselves be overawed by learning which in reality did not affect the question. It needed no special training to understand whether the architect's plans aimed at preservation or alteration. It was a simple question of fact, and what had to be decided was, "Shall the old



WOOLPIT CHURCH, SUFFOLK: POPPY HEADS IN NAVE. DRAWN BY PHILIP J. TURNER.



church be maintained, or shall we have an archaeological exercise by the architect?"

5. To avoid varnished pine, cathedral glass, and encaustic tiles. In his own church at Assington, some barbarian has covered up the gravestones of his ancestors, which he knew, from the inscriptions of the monuments, must be lying below, the most hideously vulgar, garish encaustic tiles above. It was a great grief to him, and he knew not when public opinion would allow him to tear up the floor of the chancel.

The most precious heirlooms were the ecclesiastical buildings scattered about the country. Many well-meaning (he might say, excellent) clergymen have an idea that they were wanting in reverence when they discouraged attempts to restore these old buildings to their supposed original plan, and to embellish them with ornament of the style in vogue at the particular period to which it was aimed to bring them back. The venerableness, charm of originality, distinction as a work of art, must be lost in their reproduction, however ingeniously carried out, while many links with the past, and associations with the simple faith and earnest lives of our forefathers, were also swept away.

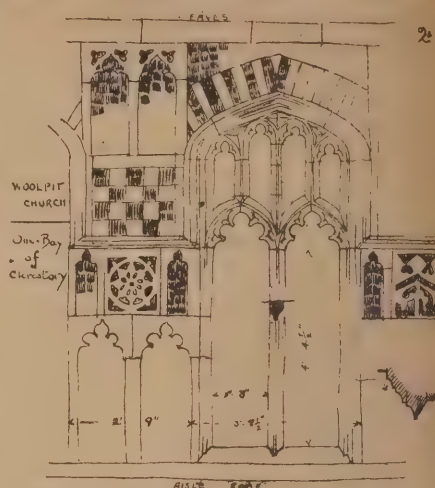
A vote of thanks to the president was then carried by acclamation. Miss Nina Layard then read a paper on "The Religious Houses of Ipswich."

On the Wednesday the members visited Grundisburgh Church, St. Mary's Church at Woodbridge, Seckford Hall, Playford Church, and Tuddenham Church. In the evening Mr.

G. E. Fox, M.A., F.S.A., the director of the Silchester Roman excavations, read a paper on "Roman Suffolk."

On Thursday the members visited Halesworth, Southwold Church, Wenham Church, and Bramfield Church. On the same day a conversazione, organised by the Suffolk Institute of Archaeology and Natural History and the Ipswich Scientific Society, took place in the Ipswich Museum and Art Gallery. Here the fine collection of illustrations of stained glass in Suffolk, and painted screens, made by Mr. Hamlet Watling and Miss Layard's collection of Mr. Hamlet Watling's copies of stained glass, screens, frescoes, &c. were much admired. Mr. Woolnough exhibited lantern slides of old Ipswich, with descriptive comments, and Mr. St. John Hope lectured on "The Maces of Orford, Ipswich, and Beccles."

On Friday the annual business meeting of the Institute was held at the Town Hall, at which it was decided to hold the next annual gathering at Dublin. An excursion was afterwards paid to Framlingham and the neighbourhood. In the evening, at the Town Hall, the architectural section of the Institute was opened by the Very Rev. R. M. Blakiston, F.S.A., who made some remarks of a general character upon the subject of church restoration. In a church of the Early Decorated period, for instance, upon close observation, it might be found that there were traces, more or less marked, of work of later days. The correct restorer would at once say these were modern additions, and, therefore, ought to be done away with, and the church restored to



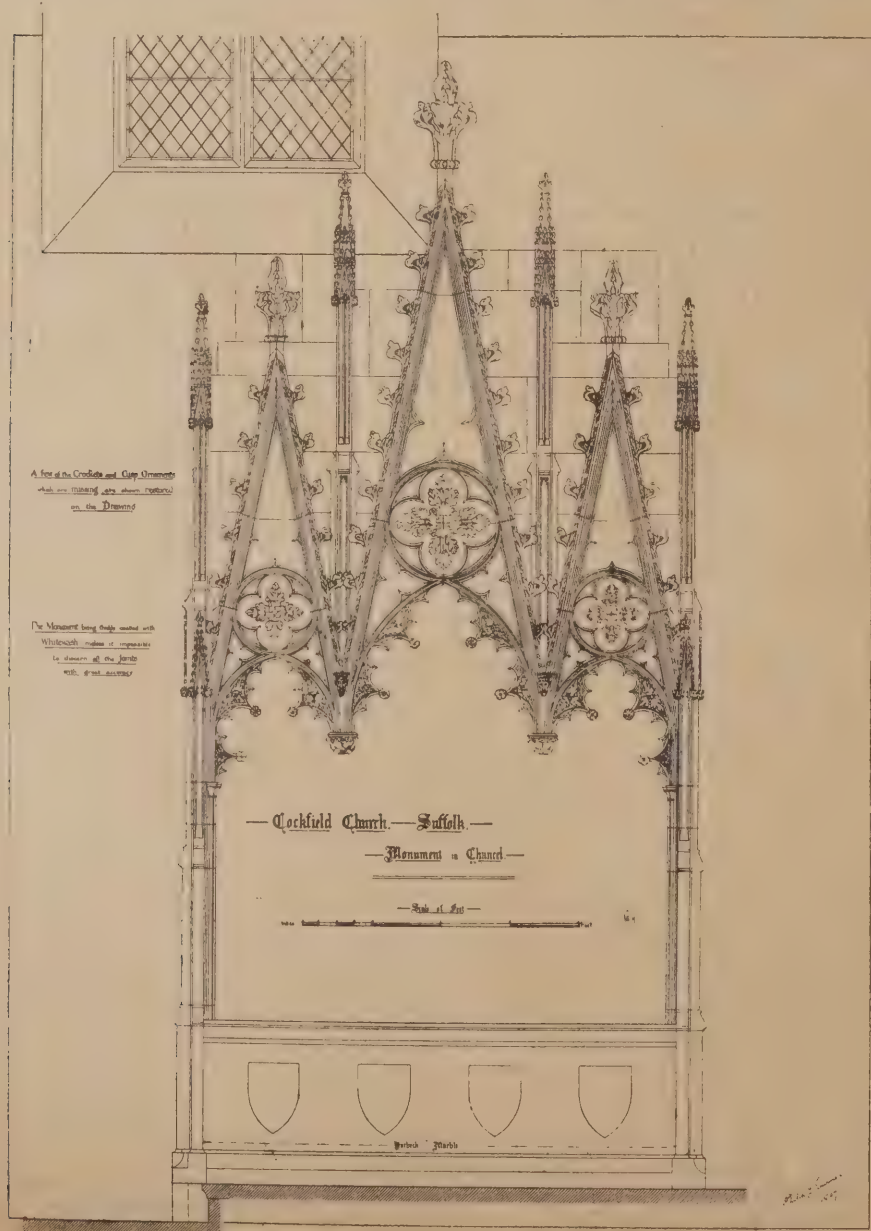
SKETCHED BY PHILIP J. TURNER.

the exact state in which it first took shape in the Decorated period. This kind of treatment struck him as falsification of history. A person would say: "Our old church is not large enough for the needs of the parish, and a separate additional church is not needed. What is to be done? May we not touch the ancient fabric at all?" He, the speaker, would reply without hesitation: "You must first of all meet the needs of the parish; therefore, if necessity demands it, your old church must be enlarged." But, in doing so, the greatest care should be used to interfere as little as possible with existing work. Except in a few very rare cases, where there was a priceless relic of early times which it would be a sin to destroy, it might generally be managed that the additional work could be added without very serious meddling with old work; and, indeed, if the old work must be altered, the needed addition would but be an extra step in the ladder of the church's history. Before concluding he should like to touch delicately on one matter, which, as a Churchman, he could not altogether pass by. In many of the thousands of sets of drawings for the so-called "restoration" of English parish churches that he had seen, there had evidently been a great lack of knowledge of what was the real use of a church. It was on this ground that he always thought that the person who was selected for the work of repairing an old, or building a new church should be himself an earnest Churchman. His conceptions of what a church was for must necessarily differ from those of a person of another persuasion, who could not possibly share the Churchman's views of what was necessary for the purposes of Divine worship.

Mr. Micklethwaite, in the discussion which followed the paper, thought that from the excesses and absurdities of so-called church "restoration," there was the danger now of a reactionary swing of the pendulum. The tendency was to maintain the church as a museum, but the fact ought to be realised that, although the churches of England were historical monuments, they were still living monuments, and should be regarded in that light.—Mr. V. B. Redstone then read a most exhaustive paper on "Orford Castle."

#### Summonses against the Crystal Palace Company.

At Penge Petty Sessions on Tuesday last week arguments were heard on four summonses taken out by the London County Council against the Crystal Palace Company in respect of certain stables for polo ponies which the Company had erected, and which the County Council said were in contravention of the London Building Act, 1894, which constituted the Council the supervising authority over all buildings in the County of London. Mr. Horace Avory appeared for the County Council, and Mr. Cunningham Glen, for the Crystal Palace Company, who maintained that the buildings complained of did not come under the provisions of the Act. The Bench reserved judgment.



DRAWN BY PHILIP J. TURNER.



## SCULPTURE IN RELATION TO ARCHITECTURE.\*

BY T. DUNCAN RHIND.

(Concluded from page 369, No. CCXXXIII.)

NOW let us make a few comparisons between the way memorials are designed and carried out in France and the method adopted in Britain. Some years ago in a recent competition for a public monument in Edinburgh to Scotland's national heroes, Wallace and Bruce, the Town Council in whom lay, and still lies, the power to give the commission had but the one idea, and that was their own—they had no advice from any artist; it was to place statues, 12ft. high, on one pedestal, under the impression, no doubt, that the bigger the statue the more imposing and grand the monument would be. Few sculptors competed, their reluctance to do so being due to the hard and fast rules that were to fetter them in the competition. It can be imagined what an unmeaning, stupid proposal it was to have these

which, symbolical though it be, there is not an intelligent Frenchman but will readily understand.

The committeemen we have amongst us can see nothing beyond what is already in so great profusion in our midst, and the sculptor is bound to go on multiplying and replenishing the city with the false bronze representations of our public men; false I say emphatically, for, excepting the head, few of our public statues are portraits in anything besides.

George Square in Glasgow holds, I think, more public statues than any similar space in the whole country; and it is noticeable how little attention they attract from the passers-by. The monuments, so monotonously conventional in their treatment, and so devoid of any decorative feeling, stand there evoking little more interest than the chimneys that render Glasgow more worthy of the name of Auld Reekie than our purer-aired city of the East. When it was determined to plant this square so lavishly with monuments, the authorities might have made infinitely more of such an opportunity of worthily em-

reverently of the men who had died for their country, and memorials for this same cause have brought out some of the finest sculpture that has ever been executed.

There is one memorial erected recently which somewhat approaches this idea, and that is Gilbert's statue of the Queen. The figure itself is most beautifully modelled, but it is the designing of the throne and the allegorical subjects that are remarkable. The shield work and wrought work feeling throughout is wonderful, and can only stand as another proof of the genius of Gilbert. Not only is his sculpture good, but all his architectural details are the same; there is a peculiarity—original, yet bold and dignified—that seems to imbue all his work, and his light and shade effects are always very strong and well placed.

In walking through the streets of Paris you cannot resist the feeling that the French are possessed of the idea that without sculpture no building of importance is complete. This same idea is powerfully expressed by one of our leading architects, who says that "Sculpture is the very soul and voice of architecture. Without it ancient buildings would not speak in the way they do. The separation of the soul from the body means death, and architecture, divorced from sculpture, is deprived of the light of the sun of intellectuality, and cannot rise to the ideal or suggest a higher life. If we wish the labours of our life to be of any real value, it cannot be arrived at while we create dead works."

In the meantime, however, sculpture, so far as Scotland is concerned, is decidedly in the shade, as it has been for a considerable period, while the support accorded by the public to painting has been largely and steadily increasing. This, as I said before, is, I think, owing in a great measure to the cultivation by the Academy and other exhibitions of a class of sculpture which appeals only to the already refined and the wealthy; and is by them buried in the seclusion of their houses with the result that it does little to bring forward that higher class of architectural figure sculpture which is such a powerful agency in beneficially influencing public taste in regard to our street architecture. According to the ideas prevalent in Edinburgh, it would just be a little beneath our leading sculptors to take up such works as sculptural decoration on the architectural basis, they would designate it "architectural sculpture," as implying something beneath the type of the sculptors' "pot-boiler," the bust. It is not therefore much to be wondered at that there are such a large number of public buildings in Edinburgh in their inanimate, silent condition.

One great thing we should always remember is that if the money that is often spent in covering a building with "shapwork," "swags," "masks," &c., which are very well in their way, were concentrated and spent in one or two groups or panels of really good sculpture, the effect I am bound to say would be infinitely better, as it is far safer to take off ornament than put it on.

And while we boast, and are proud to be able to boast, that there is a distinctly recognised and well-defined Scottish School of Painting, we must admit that in the field of sculpture Scotland has yet to win her spurs. These spurs she will never earn by such miserable doles of help and countenance as have been grudgingly accorded to sculpture in the past by her authoritative guides in the world of art. Individual talent and individual energy are indispensable factors in the success of any cause; but in the present "winter of our discontent" these struggle in vain to produce their legitimate flower and fruit; they want the sunshine of official recognition, and the breath of popular favour, to foster and make good a development which, once attained, will be on all hands acknowledged as a blessing and a boon.

**Consecration of a Chancel.**—The new chancel of St. Bartholomew's Church, Marsden, was recently consecrated by the Bishop of Wakefield. The church has been erected at a cost of £14,000, and the chancel alone will have cost about £4,000.



FROM THE BASE OF A STATUE ERECTED IN MEMORY OF GEN'RAL CHANZY AT LE MANS.  
BY CROISY.

two figures standing together—statues of men of whom we possess no portraits—yet what a splendid opportunity was here presented for an allegorical memorial—a combination of architecture and sculpture, where representations of the brave deeds of the heroes could have varied with symbolical sculptures, illustrative of their characteristics and their lives. Certain sculptors, departing more or less widely from the instructions, sent in their ideas for this monument, but they were ruled out of order and the whole matter was shelved for another indefinite period.

Very different from the ignorant dogmatism of our committees in sculptural matters is the method adopted by similar committees in France. A monument has recently been erected in Paris in honour of Gambetta, and the committee, acting on a wise and liberal principle, and desirous of having something away from the usual statue, &c., simply invited sculptors at large to send in competitive designs. A limited number of what were evidently the most meritorious was selected, and the authors of these were each granted a sum of money to work out or mature their sketch designs, the final result being that the monument now erected is a most magnificent work of art—a beautiful harmony of architecture and sculpture, telling its story in language

bellishing their city. As it is, instead of a beautiful kosmos, they have effected little less than a chaos; or perhaps it would be more correct, and at the same time more charitable, to say that George Square is like a monumental store, where the objects are placed incongruously here and there, in the expectancy of their being gradually removed to occupy more permanent positions. The truth is, the function of supervising such matters is one beyond the untrained ideas of members of shifting committees of successively changing Town Councils. And no reformation in this direction is to be expected till such men honestly confess their ignorance and incapability of properly treating questions that lie far above and apart from their ordinary walks, and hand over the responsibility to men who have made art the pursuit of their lives, just as these same councillors and committeemen have made their various vocations their life-long and engrossing study. I am afraid, however, that for a considerable time to come the committeemen will blindly rush in where even artists modestly tread, leaving behind him such ugly footprints as I have partially described.

I would also call your attention to two of the many memorials raised throughout France to the officers and men who fell in the '71 war. There is something awe-inspiring, something that makes one stop immediately and think

\* A paper read before the Edinburgh Architectural Society.



## Correspondence.

### REGISTRATION OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.  
LONDON, W.C.

DEAR SIR,—I have read the interview with Mr. Arthur Cates on the question of the registration of architects in the copy of your Journal of July 19th. I know Mr. Cates to have been a hard worker in the cause of the education of architects, and I as well as others much appreciate the energy with which he has carried through much valuable work with regard to the profession. Still at the same time I am bound to differ from Mr. Cates in his arguments and reasons against a Registration Bill, as they are not only inconclusive, but (I trust he will forgive me for saying so) illogical.

I pass over the question of what has been done in other countries, but I think it will be found that in many other countries, and in Germany particularly, examination is required, and an assured status is given to the competent architect.—Mr. Cates says:—"The first step towards placing the practice of architecture in a satisfactory position with the public would be to establish it as a profession, to secure the satisfactory education of its members, and in so far secure to the public that the possessor of an authoritative diploma had a certain minimum of knowledge." This is exactly what the Registration Committee propose to do. The whole difference between the method proposed by Mr. Cates and that proposed by the Registration Committee is, that Mr. Cates would do it by means of a *voluntary* examination before the Royal Institute, the Registration Committee by a *compulsory* examination, either before members of the Royal Institute, or a Board of Examiners constituted from them and others under an Act of Parliament. I put it at once that the public under the Registration Committee's scheme would be safe; under that of Mr. Cates they would not. If argument is required to show that I am correct it is to be found at once and conclusively in the fact that those who wish to join the architectural profession, who are absolutely or even partially incompetent, will, as long as they can, enter the profession without examination. They are the last people in the world who will ever offer themselves for examination. What, therefore, does it matter how many men put themselves forward for voluntary examination by the Royal Institute, so long as it does not prevent the incompetent man entering the profession?

A further argument, equally conclusive, is that outside the Royal Institute of British Architects there are twenty times as many architects as there are within it; and while I am pleased to say I believe a considerable number of these are competent men, as, indeed, many of them are leading men in the profession to-day, still, there are very large numbers who must undoubtedly be incompetent, and who naturally and necessarily are not intending to offer themselves for examination by the Royal Institute. Mr. Cates goes on to deal with the matter as a question of entering the Royal Institute. Now, I freely acknowledge, and do so willingly, the very great services which have been done to the profession by the Royal Institute; to the admirable way it is conducted, and the efficacy of its examinations, I am also willing to bear witness. The Institute (though not the only Society) is undoubtedly the leading Society, and I will even put it a long way before any of the other societies. Experience, however, has proved that it is impossible to join (not only in this but in any profession) all its members under any one voluntary association; the question at issue therefore cannot be furthered or helped by a discussion of the advisability of all architects belonging to the Royal Institute.

I quite acknowledge that "strength lies in unity," but I absolutely disagree that "the advocates of the Registration Bill would do well" (or even be right) "to show the real earnestness of their desire by becoming mem-

bers of the Institute, and ultimately by force of numbers influence the action of that body in the direction they desire." The arguments against even the possibility of such a course are many. To wait until such a Utopia as all the members of the profession joining together in one society has been accomplished is practically to put off the date for compulsory registration until the world will need architects no longer. I quite agree it might add to the funds and add to the prestige of the Royal Institute if all who are in favour of registration, and those who are trying to work for that end, were to join its ranks; but if they did, has there been anything which has shown any probability that the Royal Institute would be influenced to take action? I am fain to doubt it. I think the statement made by the president of the Institute at its last public dinner speaks absolutely against any such probability. The feeling expressed in the speech, too, is one hardly calculated to encourage those who earnestly desire to see the profession joined into one great body, feeling satisfied that it was worth while to come forward; unless they wished very much to risk a rebuff. The question of registration has been several times before the Royal Institute, and from time to time resolutions in its favour have been passed, but no action of any description has been taken towards that end. Neither has any action been taken with a view to draw the profession together, nor any action to elicit opinion on this question from the various provincial societies on the part of the Institute. Now the Society of Architects, willing as it is to leave it for the Institute to lead the van, if it will only make up its mind to do so, has taken very great pains, and gone to very considerable expense in trying to ascertain the opinion of architects in the great provincial cities of the kingdom, and I am happy to say that in no case whatever has the society visited any city in which it has met with a rebuff. Indeed, with extraordinary unanimity resolutions have been passed expressing the desire for compulsory registration, and the necessity for Parliamentary action.

Mr. Cates in conclusion says, that he cannot accept the arguments which he has generally heard put forth in support of a Registration Bill as in any way effective, and he says he does not believe that there is any analogy between the professions of law and medicine and that of architecture. Well, I have supplied some arguments in this letter; can Mr. Cates or anyone controvert them, or can they show arguments on the other side which shall appeal more closely and more thoroughly to the common sense of the public? The architect has power over the purse of the public to a very large extent, and he also has the health of the public to a very large extent in his hands. And apart from the question of art, which it is most desirable should be made a chief study, the question of sanitation is of such importance that even, if for that alone, every man who professes to deal with it should be compelled to pass an examination before he is allowed to practise. My desire is not that of protecting the architect. A competent man will make his mark whether he has compulsorily passed examinations or not, and whether he belongs to any society or not; this is a fact which has been proved over and over again. But the public cannot protect themselves. It is useless to say that the public should see that they are employing a competent person, or one, we will say, who even belongs to the Royal Institute. It is perfectly obvious that the public have not had this brought to their minds, and they necessarily obtain assistance from architects in their neighbourhood. They cannot be secure in this way, any more than they could have been in the past with regard to the medical profession, that the person they employ is competent; and such security can only be obtained by it being compulsory that examinations shall be passed before an architect shall practise. I must apologise for occupying your space to such an extent. The subject is an important one, possibly to the architect, but certainly to the public at large.—Yours, &c.,  
WALTER EMDEN.

## Enquiries Answered.

The services of a large staff of experts, including all those engaged on "Specification," are at the disposal of readers who require information on architectural, constructional, or legal matters. Questions should in all cases be addressed to the Editor.

### GREEN STAIN.

To the Editor of THE BUILDERS' JOURNAL.

BEBBINGTON.

SIR,—Will you kindly inform me through your Journal of a good green stain for oak, for picture frames.—Yours &c.,  
W. A.

A good green stain may be made by dissolving 4ozs. verdigris and  $\frac{1}{2}$ oz. of indigo in three pints of good vinegar. The proportion of indigo may be modified to suit the shade required, and, in order to get a good effect, the stain should be applied hot, so that it may sink into the pores of the wood. Aniline dyes also make good stains, and almost any shade can be obtained by admixture of the various colours. Another green stain may be obtained by first treating the wood with a concoction of turmeric, followed by an application of Prussian blue.  
H. E.

### MEMBERSHIP OF SOCIETY OF ARCHITECTS.

To the Editor of THE BUILDERS' JOURNAL.

CROUCH END, N.

SIR,—Will you be good enough to inform me where I can obtain full particulars of how to become an M.S.A.; and also will you inform me how many exams. there are to pass, and if there are any fees of any kind.—Yours &c.,  
S. H. B.

Examinations qualifying for membership of the Society of Architects are held once a year; the fee for such examinations is two guineas, but in the event of failure to qualify in any of the compulsory subjects a candidate will be admitted to a subsequent examination in these for a further fee of one guinea. All who qualify for admittance to membership will be elected on the payment of one guinea, half the usual entrance fee. Members of the society have to pay an annual fee of one guinea. There are three sections of the examinations to pass, namely: 1. Architecture, 2. Building Construction and Materials, 3. Practice. Further particulars may be had on application to the secretary of the society, at St. James's Hall, Piccadilly, W.

### R.A. GOLD MEDAL, &c.

To the Editor of THE BUILDERS' JOURNAL.  
NEWCASTLE-ON-TYNE.

SIR,—(1) Can you tell me where to apply to for particulars respecting the Royal Academy Gold medal for this year? What other prizes of a similar nature are there to compete for besides the R.I.B.A. medals?

(2) Also can you supply me with or is it possible to obtain a list of works carried out by Mr. Norman Shaw in the neighbourhood of Godalming (Surrey) and round about? I suppose to ask for a list of all the more interesting modern works in that region would be too wholesale a request.—Yours, &c.,  
B. B.

(1) Only students attached to the Academy Schools may compete for the R.A. gold medal; and the regulations as to admission to the schools can be obtained from the Secretary of the R.A., Burlington House, W. Smaller prizes of a similar nature to those offered by the R.I.B.A. are given by several of the provincial societies, but in all cases it is necessary to belong to the particular society in question in some way or other.

(2) If application be made to Mr. B. T. Batsford, 94, High Holborn, W.C., he might be able to assist, as he may know of books dealing with the district of Godalming—and there certainly is one describing Mr. Shaw's works.  
G. A. T. M.



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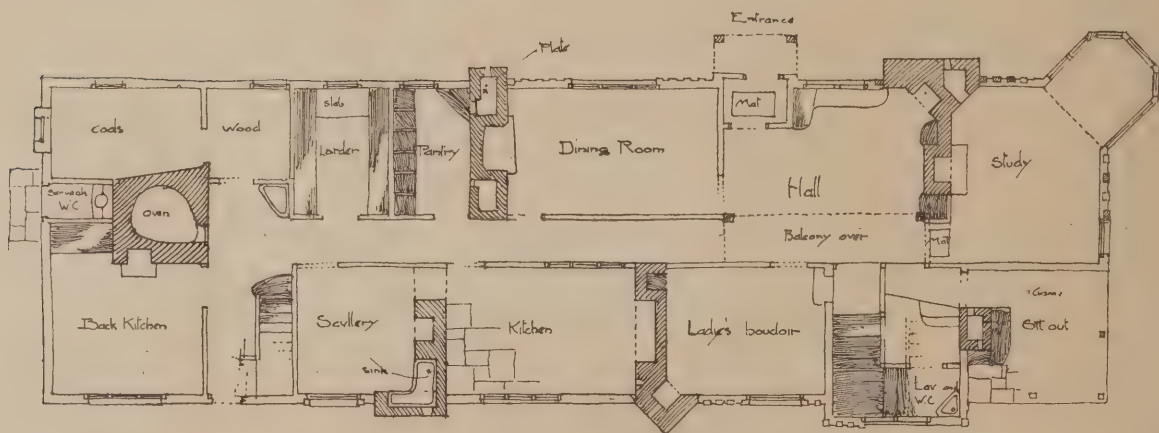
North West Elevation

South West Elevation

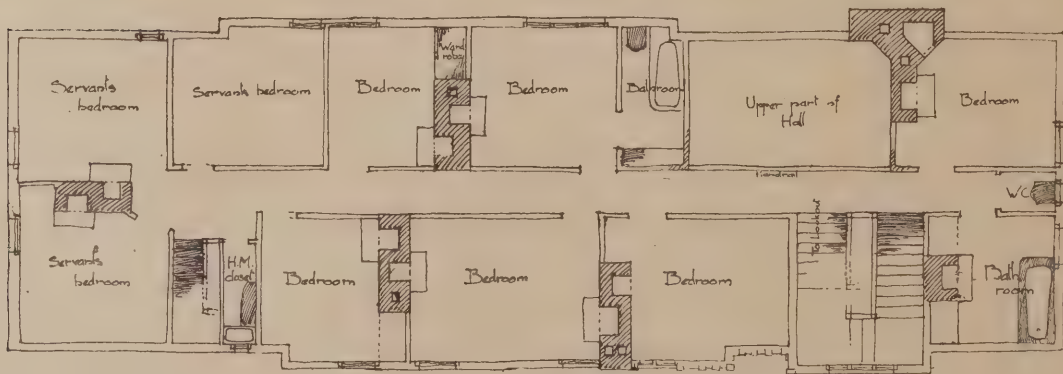


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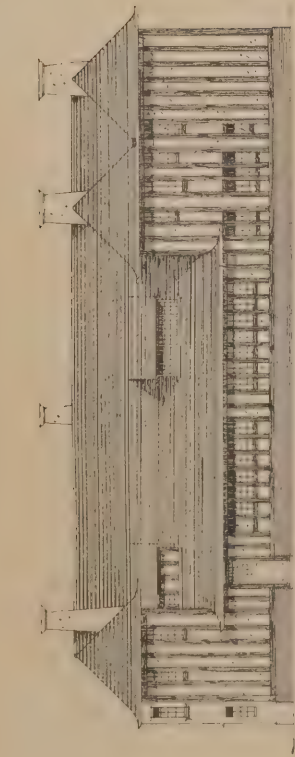


Ground Plan

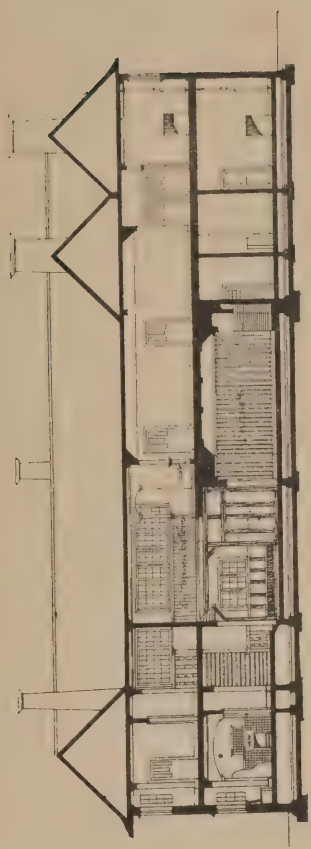


First Floor Plan





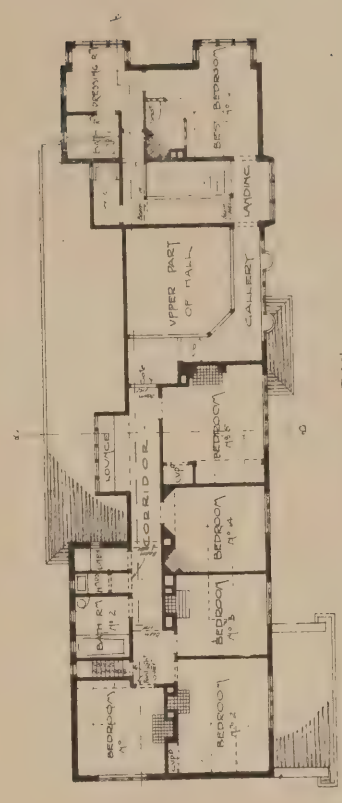
ELEVATION TO GARDEN



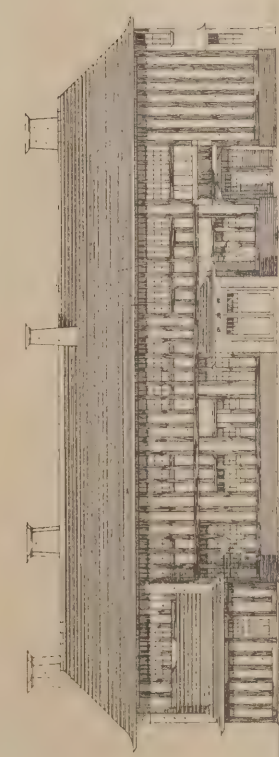
SECTION ON LINE A A



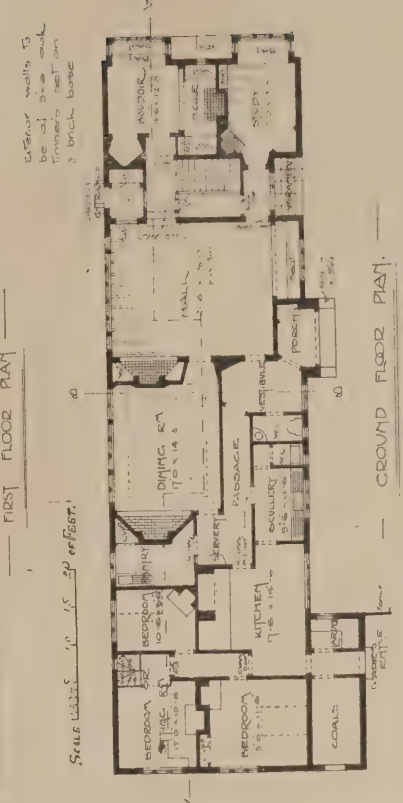
SIDE ELEVATION



FIRST FLOOR PLAN



ENTRANCE ELEVATION



GROUND FLOOR PLAN



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## "BUILDERS' JOURNAL" COMPETITION.

WE reproduce this week in our inset plates two more of the designs for a country house, submitted in our recent competition; both of these were highly commended by our assessor, Mr. Edward S. Prior.

### DESIGN BY "CARACTACUS."

The design by "Caractacus" (Mr Charles M. Childs) was accompanied by the following description:—

**PLAN.**—The accommodation is as set forth in the conditions; with the addition on ground floor of a small verandah, which could easily be utilised as a conservatory, and on first floor of a dressing room.

Whilst the author has endeavoured to plan the rooms in a manner calculated to insure convenience, he has at the same time imparted such a degree of "mystery" as is compatible with that convenience.

The Hall is reached through a pentagonal vestibule, and is placed in the centre of the house; at one end is a long, low, heavy-mullioned window looking on to the garden, and at the other end is a raised recess entered by way of a low-beamed arch. This recess has a seat below the small window the two side lights of which are filled in with dark coloured leaded lights taking the extenuated tulip form. On one of the two remaining sides is a recessed and raised fire-place with seats on either side; on the other is the wide staircase with a hood over it, having a suitable motto thereon. The room will be treated with plastered walls, and 6in. by ½in. dark-stained oak stuff planted on same—the rafters, purlins, and collars, will show. The garden may easily be reached by passing out of hall and into garden lobby.

The dining-room opens out of the hall, and is treated to level of picture-rail with ½in. dark-stained V-jointed matchboarding, above this a deep splay returns round room, giving a very good, but quaint, effect, emphasised by the raised fireplace recess at the end of the room, faced to level of opening with red brickwork with wide joints. A door is provided opening into servery.

The boudoir is entered off the staircase, but door is recessed from same. The room is in easy communication with the bedroom. At one end is an angle nook with seats on either side, and also a seat in bay window. The garden can be viewed from the side light, whilst the morning sun streams through the window proper.

The study does not open directly out of the hall but is cut off by means of a well-lighted lobby, this gives the room the necessary seclusion from noise. Access to first floor can be obtained by way of passage and up three steps without passing through the hall. Panelling to a height of 4ft. and a stencilled frieze goes round the room with the floor joists showing. This room looks on to the north, east, and south, thus giving a varied aspect.

The servants' quarters are entirely isolated from the house proper; this has been obtained by keeping their bedrooms on ground floor. In addition to the requirements there is a pantry, servery, and tradesman's entrance. The author would suggest that one of the servants' bedrooms be used as a sitting-room, and not a bed-room; this would leave two sleeping rooms for their accommodation.

A servants' staircase is provided so as to give the servants access to first floor without entering through the house proper.

**FIRST FLOOR.**—Leading off a spacious landing is the best bedroom; a small angle nook with seat is provided, but should this not be required it could easily be omitted. As required in particulars a bathroom is placed in connection with this room, and a dressing-room has been added in addition, these rooms being en suite.

A gallery 3ft. 6in. wide extends round two sides of the large hall, and has a long window with two small bays. This will give a considerable amount of light to the hall.

The ordinary bedrooms, five in number, are

conveniently situated. Three of these are entered off a well-lighted hall, and the remaining two off an equally well-lighted corridor. This corridor has a lounge and window recess looking towards the garden. The rooms are so planned that the beds shall not be in draughts.

All the bedrooms without exception have fireplaces, and there is a second bath-room in connection with these rooms.

In addition to the stated requirements, there is a housemaid's closet, linen closet, and servant's staircase; whilst, if required, a large box-room could easily be planned in the roof.

The general treatment of bedrooms will be plain and simple, the doors to be 1½in. with ½in. veneer planted on to form raised panels, and moulded skirting to return round doors as architrave.

**CONSTRUCTION.**—The general construction will be 9in. by 6in. oak posts, finished on outside and inside (except where match-boarding is shown) with plaster, and rendered in centre. This forms a weather-proof house, and is less costly than brickwork with 1½in. stuff planted on wall, and, besides, is more truthful.

The ground floor walls generally will be 4½in. brickwork whilst the upper floors of stud partition.

**ELEVATIONS.**—The author has avoided all crude and incongruous forms for the sake of what is at times falsely termed "originality," and has endeavoured to obtain a picturesque, but at the same time architectural effect by means of simple and unbroken lines.



PERSPECTIVE SKETCH BY CHARLES M. CHILDS.

The exterior will be of half timber work on a red brick base, the posts being 9in. by 6in., dark stained oak, finished between with selentic plaster set back ½in. from face of posts, giving the black and white effect which is so pleasing.

The windows will be quarry glazing with wide lead courses.

The roof to be covered with Broseley Tiles, or, if desired, thatch could easily be substituted, but strongly recommend the former, the latter being so very insanitary and inflammable. The eaves are 3ft. wide, finished flat and soffit.

**DRAINS.**—The drains will be the best of their kind.

**CUBICAL CONTENT**—59,560 cubic feet, taken at 8d. = £1,990—say £2,000.

### DESIGN BY "TORSO."

The descriptive note accompanying the design by Messrs. H. T. Rees and H. M. Macpherson ("Torso") is as follows:—

**EXTERIOR.**—The material proposed to be used for this house are, for the walls up to 3ft. above the ground random coursed rubble, colour washed, if thought necessary, and above this 8in. by 8in. oak timbering split out of 10ft. logs with adzed faces and intervals filled with brickwork, with rough-cast facing (cream). Gables to be faced with rough-cast tinted cream-colour. Casements to have oak frames with wrot iron fittings and leaded quarries. Chimney stacks to be of random rubble. Roof to be thatched.

**INTERIOR.**—Hall to be fitted with panelled dado.

Walls of Ingle-nook to be faced with red-rubber bricks putty painted.

Balcony round hall to be supported on wrot oak cantilevers with wrot oak balustrading.

Floors to be of wood block in all living rooms. Dining-room to be panelled in oak with oak ceiling. We anticipate the price of building to come within the sum stipulated.

## ART SCHOOL FOR LEEK.

THE Duchess of Sutherland laid the corner stone of a new School of Art, Science and Technology, and County Silk School, on July 24th. The buildings have been designed by Messrs. Wm. Sugden and Son, F.R.I.B.A. The school is an extension of the adjoining Nicholson Institute, the gift of the late Joshua Nicholson, and which was the work of the same architects, who are responsible for the major part of the principal public and private edifices erected in the town during the last half century. The Nicholson Institute already provides a public reading room, and has associated with it a free library, a reference library, a museum, and a picture gallery. The corner stone has been excellently sculptured by Mr. A. Broadbent, and is emblematic of the genius of such an institution.

The execution of the scheme will involve an outlay of nearly £10,000, reckoning the cost of

equipment, furnishing, &c. It is hoped that in time the scope of the project may be enlarged so as to embrace secondary education, and the plans have been drawn with an eye to such a development. The enterprise has been rendered capable of achievement by the co-operation of the well-to-do residents with the Urban District Council, part of the funds being raised by personal contributions, and part being provided from public resources. The local authorities have obtained leave to borrow £4,000, the Technical Instruction Committee of the county have made a grant of nearly £2,000, and the Science and Art Department assist with nearly £500. Individual subscriptions amount to about £1,500.

On the ground floor of the buildings there will be a chemical laboratory, 31ft. by 22ft., a balance room 13ft. by 7ft., a domestic school, 27ft. by 22ft., a physical laboratory, 27ft. by 20ft., all over 15ft. high; and a manual instruction room, 29ft. by 20ft., and a weaving shed, 29ft. by 30ft., lighted by ample north skylights, both averaging 18ft. high. Also entrance hall, boys' cloakroom, &c., and spacious corridors are here provided. There will be separate entrances for boys and girls, in view of developments in the future for secondary and higher education purposes. On the mezzanine floor will be the mistress' room, &c., and on the first floor the science lecture theatre with gallery, 31ft. by 22ft., and four classrooms, all from 15ft. to 17ft. high. There will also be a master's room, preparation room to lecture theatre, a girls' cloakroom, &c., and communication with the Nicholson



Institute on this floor. In the master's room will be fixed an ancient plaster ceiling, carefully taken down from the sixteenth century Manor House in the Market Place (lately pulled down. Also round the walls will be placed some very old painted chestnut wainscoting from the Chateau de Lormont, near Bordeaux, formerly the residence of the Archbishops of Bordeaux, whose arms are painted on the panels; the Black Prince lived in this chateau, and his son, Richard of Bordeaux, was born there. The wainscoting was rescued from destruction by Mr. Larnier Sugden.

The exterior of the new buildings are plainly but proportionately treated. The chief decorative features, in addition to the corner-stone, will be modelled spandrels, by Mr. Broadbent, above the windows, symbolising the Arts and Sciences. Mr. Grace, of Leek, is the builder, and Mr. M. Carding his sub-contractor for the plumbing, &c. Some old dilapidated cottages have been pulled down at the back giving an open quadrangle for the public use, bordered by neighbouring trees, thus improving the light and air, both for the new buildings and the Nicholson Institute. Another old block of cottages which similarly hamper the buildings ought to be disposed of in the same way.

After the stone-laying the architect, Mr. Sugden, presented Her Grace—on his own behalf—with a silver tablet commemorative of the occasion, and introduced the author of the design, Mr. A. Broadbent, a rising young sculptor. The souvenir was in the form of a miniature reproduction of the stone, artistically cut, and framed in wood.

The architects are visiting the best examples of the most modern technical schools both in this country and abroad, as the committee and their indefatigable chairman, Mr. Hall, are determined to have the appointments and furnishing of the best and latest type. Mr. Kineton Parkes, the principal, is equally taking the closest and most energetic interest in everything connected with the enterprise.

**New Presbyterian Church at Newcastle.**—The Building Committee of Blackett Street Presbyterian Church invited four local architects to send in competition plans for the proposed new church in College Road (opposite the Durham College of Science), the plans to be unsigned or under motto. Four sets of drawings were received, one set unsigned, the other three under the mottoes "Experientia Docet," "99," and "St. Andrew's." The Committee unanimously decided on those sent in under the motto "St. Andrew's," which proved to be the design of Messrs. Badenoch and Bruce, of 55, Pilgrim Street, and they have been appointed architects for the work, and are now busy with plans for the Town Improvement Committee.

**Proposed Fever Hospital at Skipton.**—At the Skipton Town Hall on Tuesday last week Mr. R. Deane Sweeting, one of the inspectors of the Local Government Board, held an inquiry into an application by the Skipton and Silsden Urban and Skipton Rural District Councils, for permission to borrow £16,000 to erect a joint infectious diseases hospital at Skipton. Mr. Edgar Wood, the clerk to the joint authorities for this purpose, gave evidence concerning the present infectious hospital at Skipton, which, he said, was built in 1888, at a cost of £400. The estimated cost of the proposed hospital was £14,958. Mr. G. E. Balshaw, the architect, said that on the ground floor of the hospital there would be a waiting room, rooms for medical officer, matron and nurses, and kitchen, scullery and stores. On the first floor there would be six bedrooms and other accommodation, and on the second floor seven bedrooms and other conveniences. In the isolation block there would be four single wards, for two separate diseases, if necessary. There would be two pavilions for scarlet fever, and two wards, containing eight beds for women and children and six beds for men. Other evidence having been given the inquiry terminated, and the inspector and others visited the proposed hospital site.

## Bricks and Mortar.

*"I know what it is to live in a cottage with a deal floor and roof, and a hearth of mica slate; and I know it to be in many respects healthier and happier than living between a Turkey carpet and a gilded ceiling, beside a steel grate and a polished fender. I do not say that such things have not their place and propriety; but I say this, emphatically, that the tenth part of the expense which is sacrificed in domestic vanities, if not absolutely and meaninglessly lost in domestic discomforts and incumbrances, would, if collectively offered and wisely employed, build a marble church for every town in England; such a church as it should be a joy and a blessing ever to pass near in our daily ways and walks, as it would bring the light into the eyes to see from afar, lifting its fair height above the purple crowd of humble roofs."*—JOHN RUSKIN.

### Art Exhibition at Kendal.

A LARGE and interesting exhibition was opened on July 6th, at Abbot Hall, Kendal, and will remain open until the 26th inst. Kendal is in the heart of a district where a strong revival of the artistic crafts has taken place, and a special effort has been made to bring together an interesting collection of works of art, in view of the fact that eight years have elapsed since the last exhibition. The exhibition comprises oil and water colour paintings; decorative designs, drawings in black and white; prints; wood and stone carving; metal work, including repoussé and other hammered or pierced work; modelling in terra-cotta, wax and plaster; gesso; pottery; bookbinding and leather embossing; textiles and embroidery; and photography. A different line has been taken to that adopted at the last exhibition. The last exhibition was competitive and consequently amateurish, but the present is non-competitive and primarily educational, most of the work shown being professional. The works on exhibition have been divided into three sections:—1, Work exhibited by artists and craftsmen for sale or otherwise; 2, Loans from various sources; 3, Loans from South Kensington. The excellent character of the exhibition is in great part due to the earnest work of the hon. secretaries, Messrs. Cuthbert Rigby and Arthur W. Simpson.

### Government Control of Fire Protection.

THE evidence before the Select Committee on Fire Brigades, was closed last Tuesday week. Mr. Herbert Brown, standing hon. counsel to the National Fire Brigades Union, declared himself in favour of conferring compulsory powers on a Government department over Local Authorities in respect to the establishment and maintenance of Fire Brigades. He recommended that the procedure in regard to protection from fire, as between the Government department and the Local Authority, should be similar to that in regard to sanitary matters under the Public Health Act of 1875. Compulsion should be applied by means of *mandamus*. Mr. Kershaw, one of the Assistant Secretaries of the Local Government Board, also gave evidence, advocating the extension of the powers of Local Authorities in regard to protection from fire. Mr. Edward Sachs, Chairman of the Executive of the British Fire Prevention Committee was next examined. His evidence primarily lay in the direction of the safety of life in public buildings, such as theatres, and in the technical knowledge of fire brigade officers. His opinion was that it appeared that no control was at present exercised on the efficiency of private firemen having posts in places of public entertainment and the like, much less any control as to their knowledge of such fire preventive measures as a *bona-fide* fireman or watchman should be conversant with, and the result was, speaking generally, that the private staff of firemen in public buildings was of doubtful value. Then as re-

gards the manning of fire brigades, Mr. Sachs laid great stress on the necessity of the building and mechanical trades being well represented, and that the officers in particular should be thoroughly conversant with construction and building materials. For officers in big towns, the retired Royal Engineer officer was advocated as a suitable commander, whilst for the officering of smaller brigades Mr. Sachs seems to favour the local borough and town surveyors, the local engineers, architects, or builders. The great importance of applying technical knowledge and the results of modern science to the purposes of the fire service was particularly emphasised, and attention called to the fact that the fire service of the country was becoming more and more a technical problem than has been formerly the case. Commander Wells, Chief Officer of the Metropolitan Fire Brigade, said he had two alternative proposals in regard to a training institution for Fire Brigade officers—one for a school in connection with the Metropolitan Fire Brigade, and the other for an independent establishment under the Government. He foresaw great difficulty in maintaining a school in connection with the Metropolitan Fire Brigade, and he had very little hope of seeing such an institution as that established. Army, navy, and police officers should have some training at the school he proposed. The establishment he had in his mind would cost £4,800 a year if attached to the Metropolitan Fire Brigade, and £6,100 if unattached.

### Newcastle Antiquaries.

THE Newcastle Society of Antiquaries held a meeting last Wednesday, Mr. Richard Welford presiding.—Mr. E. O. Heslop read a memoir, by Mr. F. G. Holmes, of Greenwick, dealing with the geology of the district round about Carlisle. Mr. Holmes presented certain considerations in connection with the Roman works on the Solway, leading to the presumption that there had been no perceptible change in the level of the district since the Roman occupation. There had been no alteration in the relative positions of the land and sea.—Mr. R. C. Clephan exhibited a portion of a brick, which had been found in the demolition of an old house. On one side there were impressed medallions, with the figures of a king and queen, and on the third medallion a castle. There were upon the portion the first three figures of the date, 157. That would make it in the time of Elizabeth, so that it would not be an English brick. It was probably a German or Flemish sixteenth century brick.—Mr. R. O. Heslop, for Mr. George Forster, exhibited a bronze celt which had been found in the River Tyne at Newburn. It was remarked that at their last meeting they had a spearhead, which was found at the same place.—Mr. Welford said there was a project for the making of a dock at Jarrow Slake, and suggested that the excavations should be watched for "remains."—Mr. Sheriton Holmes presented a stone which had been found at North Jesmond.

### St. Dunstan's.

LAST Tuesday week a sitting of the Consistory Court of London was held at St. Paul's Cathedral by Dr. Tristram, Q.C., Chancellor of the Diocese of London, to hear the petition by the rector and churchwardens of St. Dunstan-in-the-West, Fleet Street, E.C., for a faculty authorising certain alterations in the church consequent upon an agreement which had been entered into for the sale by the rector and churchwardens of the western portion of the forecourt of the church to the Law Life Office for the extension of their premises in consideration of the payment of £4,500, which it was proposed to ultimately devote to the erection of a rectory house on the eastern side of the forecourt. The case for the rector and churchwardens was heard on May 31st. The application was then unopposed, and the Chancellor intimated that he would grant the faculty asked for, subject to his visiting the church and ascertaining what provisions and covenants were necessary to insert in the faculty. Mr. F. F. Daldy, who appeared for certain parishioners opposing the scheme, said



the land which it was proposed to sell was consecrated ground, and the Court ought not, therefore, to grant a faculty to allow it being built upon for secular purposes. The open ground was kept as an approach to the church, and the powers of the trustees to sell it were exhausted. From an architectural point of view the scheme was objectionable, as it would ruin the beauty of the Gothic tower. — Mr. L. T. Dibdin, who appeared in support of the application, said the points raised by Mr. Daldy were before the Court at the last hearing, when the Chancellor said he would grant the faculty. He was not asking the Chancellor to express any opinion whether there was power to sell the land or not, or whether it was a good or bad contract. The Court had no jurisdiction to decide a question of title. The existing premises of the Law Life office, west of the church, were erected on part of the site of the old church seventy years ago under private Act, and no question of title had ever been raised. A large amount of evidence was given on the ground that the building-in of the tower would completely spoil its architectural beauty, in reply to which Mr. Dibdin said the evidence of Mr. Caroë, the architect to the Ecclesiastical Commissioners, was to the effect that the loss to the building from an æsthetic point of view would be small compared with the benefit the parish would derive from the funds resulting from the sale of the land being applied to the provision of a house for the rector. The Act of Parliament had authorised the sale of any part of the site of the old church not required for the new.

#### The Faculty Granted.

The Chancellor, in giving judgment, said that all the Court had power to do—and all that it was asked to do by the rector and churchwardens—was to grant a faculty, assuming that the trustees had power to sell the piece of land to the Law Life Association, to allow one window, which was of no practical use, to be blocked up, and another to be improved if anything. He inspected the church on the previous day very carefully, and he came to the conclusion that the evidence which was produced by Mr. Dibdin at the last hearing was in entire accordance with the opinion which he formed as to the result of the scheme. The window facing Fleet Street, which would be blocked up, lighted a staircase which was seldom used, and which was mainly used when any person was required to have access to the clock for the purpose of winding it up, and in order to make use of that staircase it was necessary to have gas lamps. The staircase also led to the organ gallery. There was another staircase, much more convenient, on the other side, which was also used for gaining access to that organ gallery. There was a painted window in the church, on the west side, which, no doubt, would be to a certain extent darkened by the erection which the Law Life Office contemplated making on the land, but they proposed to lighten it artificially, in a way which would really let more light into the church than it had at present. The third alteration he was asked to sanction was the closing of a passage leading to a vault beneath the church. The passage itself was underneath the present building of the Law Life office. To that vault access could be procured at the back of the church just as conveniently as at present. The Law Life office proposed to make a new entrance into the vault and to close the old. With regard to the present opposition, it was said in the first place that the scheme would spoil the appearance of the tower. Mr. Dibdin produced, however, several witnesses, who gave it as their opinion that the building would harmonise with the tower. They had the opinion of the vestry, of both churchwardens, and of three architects called by Mr. Dibdin in favour of the proposal, but there had been no architectural evidence in support of the opponent's view. He had looked at the site several times, and he agreed with the architects called by Mr. Dibdin. He thought that the building would not be detrimental to the appearance of the tower. The Court, therefore, were prepared to grant the faculty,

on the assumption that the trustees had power to sell the land. Mr. Daldy gave notice of appeal from the Chancellor's judgment.

**Fire Tests.** LAST week, Sir John Taylor, K.C.B., of H.M. Office of Works, and Mr. Thomas Blashill, late architect to the L.C.C., presided at a series of fire tests undertaken by the British Fire Prevention Committee at their Regent's Park Station. The strictly limited company of visitors included distinguished representatives from the War Office, Admiralty, and other Government departments, as well as from the London County Council and the great insurance companies. The tests, which were conducted by Mr. Edwin O. Sachs (Chairman), Messrs. Max Clarke, F. Hammond, Ellis Marsland and Robert Mond, included some interesting investigations with "non-flammable" wood, wire glass and a ceiling of slag wool, and a number of very important results were obtained. The object of the test with "non-flammable" wood was to ascertain in a reliable and independent manner whether thin boards (3/4 in. rebated) would sustain or spread flame when in contact with fire of such high temperatures as 1,000deg. Fahr., for terms of five, ten, or fifteen minutes respectively. The wire glass both in skylights and windows was to show its resistance under a fierce fire increasing to a temperature of 1,000deg. Fahr., water being applied during and after the tests, which lasted thirty and forty-five minutes respectively, and the slag wool ceiling was to withstand a fire increasing to a temperature of 2,000deg. Fahr. for an hour, followed by the application of water. The reports embodying the important results of these tests will be issued in due course.

#### Architecture in France.

THE June and July numbers of that excellent art magazine, the "Revue de l'Art Ancien et Moderne," contain articles on the Salons of 1899, dealing with painting, engraving, sculpture, and architecture. The number for June also contains articles on the prophetess Sambeth of Bruges, by M. Henri Bouchot; Goya, by M. Paul Lafond; the designs of scenes in the Trojan War, recently acquired by the Louvre, by M. Jean Guiffrey; and the July number contains articles on the Bardo Museum at Tunis, and the antiquities discovered by M. Gauckler, by M. Georges Perrot; Goya, continued; the two idealists, Gustave Moreau and Burne-Jones, by M. Léonce Bénédite; and the monuments of Damietta and Mansourah contemporary with the time of the Crusades, by M. Al. Gayet. This year's Salon has been remarkable for designs for a number of important buildings and a number of monuments, which are being erected in large numbers. These latter designs being so urgently wanted are generally characterised by the want of thought and their obvious hurried preparation. The chief interest of the architectural portion of the exhibition seems to centre in several designs submitted in the recent international competition for the University of San Francisco, in which all the winning designs were by students of the French school. A design for a sanatorium in the typical French style by M. Hannotin is reproduced, but it is considerably below the usual standard of the magazine, and we do not like its wearying duplication of parts; it looks too much like a row of French flats.

#### An Artistic Street Station Indicator.

THE Liverpool Tramways Committee, with the view of facilitating the journeyings of the city electrical trams and affording ample guidance to travellers as to the stopping places which have been established on the lines, have resolved to place what are called Street Station Indicators on the route to and from the Dingle. These indicators consist of an ornamental and conspicuously coloured pavement, 4ft. square, formed of red granite concrete, and surmounted by a border of white granite ornamented with an incised foliated design. The appearance of the square will be artistic, and it will be easily seen from a distance by the pedestrian. Each indicator will contain the name of the thoroughfare in

characters legible at all times of day and night. An arrow will indicate the direction of the cars, and the destinations will be clearly stated in white characters on a dark-red background. The indicators to equip the Dingle route will be forty in number, and have been made by the City Mosaic Company, of Liverpool, the concrete work involved being done at the headquarters of the Stanley Land and Brick Company, of Stanley. These artistic indicators will certainly be a great improvement on the iron street name tablets, which are sometimes placed beyond the limit of vision, and at night are illegible to all. It is to be hoped that the new idea will be generally adopted.

#### Popularising Art.

A LOAN picture exhibition organised by the Woolwich District Trade and Labour Council and the Co-operative, Temperance and Friendly Societies of the district, which will remain open during this and next week was recently opened at the Woolwich Polytechnic Institute by Mr. Walter Crane. The exhibition consists of nearly five hundred pictures of ancient and modern artists, including works of Raphael, Sir Joshua Reynolds and Rossetti. The Circulation Department at South Kensington Museum has lent a collection, and there are also a number of works of the best-known artists in black and white. The committee has made a charge of 2d. for admittance to the exhibition, so that it may be self-supporting.—Viscount Morpeth, who presided at the opening ceremony, said they were helping to raise the people's ideals by holding loan picture exhibitions, which he hoped to see established as permanent exhibitions in all parts of London.

#### Mr. Walter Crane on Art.

MR. WALTER CRANE, in declaring the exhibition open, said that the name of Woolwich was rather more associated in the public mind with arms than with arts; but some of them would like to depose Mars and set up Minerva. At any rate, for the present the two powers were to walk side by side. Looking at London a the wealthiest city in the world, and a city, as some contended, of some beauty, one found in the mantle patches of purple and gold concentrated in certain places, and vast areas of sackcloth only. The attempt to distribute those patches of purple and gold more liberally and consistently was represented in such exhibitions as that which they saw in that hall, as the result of the energetic work of Mrs. Bridges Adams and her committee. There was no lack of material for embroidering London with the purple and gold of art. They only wanted to find out just where it ought to go, and who were willing to take the trouble of arranging the pictures. He thought that London, and England generally, might very wisely adopt some organisation for circulating exhibitions, so that collections of pictures could be passed on from one district to another, as was often done in Germany, and the whole country could get the benefit of the best art at a small cost, instead of confining the collection to one town or district. Art, of course, was not solely comprised within pictures. It was not possible to separate any intellectual work of humanity from association with art; and it ought to be made a more familiar friend in the daily life instead of being only an occasional visitor. If refinement, beauty, and health were necessary things of life, Art was useful even in a positively utilitarian sense. The workers ought to see that every side of their nature was supplied, lest they became a half-starved and a narrowly-specialised race. Pictures, of course, would not do everything. The people must have bread and butter before cake. In many parts of London other work was more important than picture exhibitions. He would like to see one township or district emulate another so that all might compete for the cleanest and most beautiful streets and open spaces, and the best fed and most intellectual and healthy inhabitants, and to gain those advantages for the people Art must take up her abode with them permanently.



## Keystones.

**The New Catholic Club at Ainsdale,** which is situated in the Liverpool Road, was opened last Thursday. The club is a well equipped corrugated iron structure, 60ft. by 30ft., the cost of which has been about £400.

**A New Wing at Ryde Hospital** was opened by the Queen last Friday. About half an hour previous to the Queen's arrival Princess Henry of Battenberg unveiled a bust of Her Majesty in front of the new building.

**The Lichfield Victoria Nursing Home,** which has been erected as a memorial of the Diamond Jubilee of the Queen, was opened last week. The site and the building have been acquired at a cost of £1,003.

**A New Sunday School at Blackpool.**—Foundation stones were laid last Thursday of the Methodist New Connection Sunday School at Layton. The new building will cost about £850.

**Statue of Flora Macdonald.**—The Flora Macdonald statue was unveiled on Castle Hill, Inverness, last Wednesday afternoon, by Mrs. Fraser, daughter of Captain Henderson Macdonald, the donor of the statue, which has cost £1,000.

**A Technical School for Redditch.**—The Worcestershire County Council have granted the sum of £600 towards the erection of the proposed new technical school for Redditch, for which a suitable site in Casemore Road has been purchased, and plans have been passed.

**The Tender of the Patent Victoria Stone Company,** of Hamilton House, Bishopsgate Street, has been accepted by the Ilford Urban District Council for the supply of 3,100ft. of Norway Granite kerb, 60ft. of circular kerb, and 1,560 square yards of Victoria indurated stone slabs.

**Asylum Extension at Leicester.**—The foundation stone of a new two-storey wing, which is being erected at the borough asylum, Humberstone, was laid recently. The new buildings, which include an administrative block, are to cost about £76,000, and will give accommodation for 330 patients.

**Proposed Isolation Hospital at Menston.**—An inquiry was made at the Wesleyan Schools, Menston, last Tuesday week, into the application by the West Riding County Council for sanction to borrow £2,300 to erect an isolation hospital at Menston to serve the three townships in the Wharfedale Union.

**New Chapel at Horbury.**—The foundation stone was laid recently of a new Free Methodist Chapel and Sunday School. The site is in High Street, and the cost of the building, of which the Sunday School will occupy the lower storey, is estimated at £2,000. The chapel will seat about 300 persons.

**The Monument to M. Faure.**—*Apropos* of the wish to grant to Madame Faure a spot at Père Lachaise between the tombs of Floquet and Anatole de la Forge, for a monument to the late President, it is now stated that she has accepted a new offer of ground near the tomb of Couture, and in front of that of Paul Baudry. The monument will be the work of M. René de Saint-Marceaux.

**Emmanuel Baptist Chapel, Plymouth.**—The trustees of Trinity Chapel, Plymouth, in consequence of inconvenience from street traffic and other causes, sold the building and secured a site for £700 in North Road for a new chapel. Plans were prepared for a building in the early Gothic style by Messrs. Weblin and De Bonville, and the tender of Mr. J. Paynter for £1,749 was accepted. The memorial stone of the building was laid recently.

**New Premises for the Newcastle Weights and Measures Department.**—At a meeting of the Finance Committee of the Newcastle Corporation last Thursday, the tender of Messrs. J. and W. Lowry, amounting to £2,045, was accepted for the erection of the Weights and Measures Department's new premises in the City Road. It was the lowest tender. The new building will adjoin the Carpenters' Tower.

**Master Plumbers' Gathering in Sheffield.**—The Executive Council of the National Association of Master Plumbers of Great Britain and Ireland paid a visit to Sheffield last Wednesday, and after holding a private business meeting in the afternoon at the Masonic Hall, met again in the same hall in the evening, and partook of dinner, given by the local branch. The chair was occupied by Mr. H. Cawthorne (president of the Sheffield Branch).

**Reopening of Semer Church.**—This church has been closed for six weeks for the purpose of restoration, during which time the old pews have been removed and replaced by carved oak benches, and the ground floor has been relaid with Minton tiles. Mr. J. Shewell Corder, of Ipswich, was the architect, and the work was carried out by Mr. J. H. Castle, of Bildeston. A new organ by Messrs. Norman and Beard, of Norwich, has been presented to the church by Mr. Charles Beard.

**Leadless Glaze.**—An important regulation has been issued by the Office of Works. It is to the effect that all articles for domestic use supplied under contract for the Public Department, the Houses of Parliament, and such of the Royal Palaces as are under their charge, shall be made with leadless glaze. Earthenware, stoneware, and glazed bricks used for sanitary or architectural purposes, have to be obtained as required by the surveyors of the department. It has been found impossible at the present time to insure an adequate supply of these articles made with leadless glaze; but the Office of Works are making enquiries with a view to arrangements which will effect this object.

**The N. A. P. Window Company, Limited.**

—A winding-up order having recently been made against this company, the statutory meetings of creditors and shareholders were held last week at the Carey Street offices of the Board of Trade. It was reported that the company was registered in November, 1893, with a nominal capital of £30,000, divided into 10,000 preference and 20,000 ordinary shares, and was formed to acquire certain patent rights for the manufacture of safety windows from Mr. William Youlten. By a contract dated July 10th, 1896, the company purchased the patents, plant, stock, &c., for £20,000, and Mr. Youlten was appointed managing director at a salary of £500 a year. The purchase consideration was satisfied by the issue of 15,000 ordinary and 3,000 preference shares fully-paid up, and £2,000 in cash. A prospectus was issued, but £5,567 only was subscribed. Attempts were subsequently made to raise further capital, but without success. In June, 1897, debentures for £1,000 were issued, but these were paid off in September, 1898. In November, 1898, debentures for £20,000 were created, and of these about £3,085 were issued for cash, 16,000 of them being given as security for a previous advance of £2,000. In June, 1898, an attempt was made to reconstruct the company, and the new N. A. P. Window Company (Limited) was registered with a capital of £200,000. The new company was to purchase the business of the old company for £150,000, but the flotation proved abortive. The amount subscribed by the public was returned and that practically ended the matter, as a winding-up order followed, and a debentureholders' action was commenced. A receiver was eventually appointed, who was now carrying on the business on behalf of the debentureholders. The company traded throughout at a loss, which was stated to be due to the fact that it became necessary to spend large sums on advertising and in management during the development and introduction of the windows constructed under the patents. The assets of the company were valued at £8,838, and were subject to claims on debentures amounting to £4,816, leaving net assets £4,022 against unsecured liabilities amounting to £8,000 or £9,000. Mr. W. Youlten, the managing director, said it was proposed to submit a scheme for the reconstruction of the company, but at present he could not give any definite idea of the details. After some discussion the meeting was adjourned until August 25 next, in order that a scheme might be submitted.

## Under Discussion.

### SANITARY INSPECTORS IN CONFERENCE.

The annual meetings of the North-Western and Midland Sanitary Inspectors' Association were recently held at Rhyl. The councils of the North Wales Centre and the Central Executive first met under the presidency of Mr. Bland, of Urmston. The hon. secretary, Mr. R. J. Hughes, in presenting the annual report, said that the past session might rank as one of importance to North Wales inspectors, as it had witnessed the first year's working of their centre as an integral part of the Association. The fusion of the new North Wales branch with the larger North-Western and Midland Association had been mutually advantageous. The gain of the branch from the exchange of thought and the interchange of ideas, the bolder policy pursued, and the increased status demanded by identifying themselves with the larger body who now shared their allegiance, were not to be lightly passed over. The chief advantage to the Association lay in the augmented numerical strength and area. The strength of the centre now stood at thirty-one members. The following officers were elected for the ensuing year:—President, Dr. Fraser, Carnarvon; vice-president, Dr. Williams, Penmaenmawr; chairman of committee, Mr. E. Worrall, Penmaenmawr; vice-chairman, Mr. W. H. Worrall, Bangor; secretary, Mr. R. J. Hughes, Rhyl; scrutineers, Messrs. W. Winslow, Denbigh, and R. E. Hughes, Abergelle; delegate to the Central Executive, Mr. R. Little, Llandudno. It was decided that the next meeting be held at Bangor.—The twelfth annual meeting of the North Wales District Centre followed, and was presided over by Dr. Frazer, of Carnarvon. The annual report was read and approved, and the following officers were elected for the ensuing year:—President, Sir Francis Sharp Powell, M.P.; chairman, Mr. Bland, Urmston; treasurer, Mr. N. Coates, Liverpool; hon. secretaries, Mr. H. H. Spears and A. Gleaves, Liverpool. A large number of new members were elected, on the recommendation of the centres. The meeting then resolved itself into committee for consideration of private business.—The third annual conference of members of the North-Western and Midland Sanitary Inspectors' Association followed, when Mr. John Sumner, Chief Inspector for Wigan, read a paper on "The New Food and Drugs Bill." Mr. J. T. Quinton, Public Health Department, Liverpool, next read a paper on "The Small Houses (Acquisition of Ownership) Bill." A discussion on the subject of the future of sanitary administration was opened by Mr. H. H. Spears, chief sanitary inspector for West Bromwich, and secretary of the Association. He argued that although sanitation was so much to the fore it was questionable whether any substantial progress was being made, owing to the number of factors which militated against sanitary progress. In his opinion, the present methods of administration by local authorities were open to severe criticism. The fact could not be lost sight of that members of local authorities would themselves be directly interested in the perpetuation of insanitary surroundings, and at the same time placed in a position to vote sanitary reform. Legislation did not appear to do much to alter the existing state of things, and the formation of small sanitary authorities did not help matters, as they could not afford to pay large salaries to competent men. The multiplicity of functions performed by public authorities rendered it impossible for adequate attention to be paid to public health. Progress was stopped in a great measure by appointment of officers for a limited period, the lack of security of tenure and of independent power of action, and the unfortunate tendency to appoint unqualified members of local authorities to important sanitary offices. He advocated the removal of power as regards sanitary matters from the hands of local authorities, to that of a central authority, which would have a Minister of Public Health



at its head. The Rhyl Sewage Works were then visited and drives to places of interest were made.

### MECHANICAL ENGINEERS' SUMMER MEETINGS.

The summer meeting of the Institution of Mechanical Engineers was begun last Tuesday week at Plymouth, and continued for the next three days, under the presidency of Sir William White, F.R.S. On Tuesday the members of the institution were welcomed to Plymouth by the Mayor, Alderman John Pethick, the Mayor of Devonport, Mr. William Hornbrook, and the chairman of the East Stonehouse Urban District Council, Mr. John E. Bone. The first paper on the programme was by Sir Frederick Bramwell, who described the South Devon Atmospheric Railway, which was laid down between Exeter and Newton in 1846, and was shortly after abandoned. He described Brunel's interesting experiments, and the other attempts to work railways on the atmospheric system, and said it seemed incredible to suppose that the valve on which the working of the railway depended could be made quite tight along its whole length. Mr. Pendred supplemented the paper by some recollections of the atmospheric system worked for very many years between Kingstown and Dalkey, suburbs of Dublin. Mr. H. R. Champness, Chief Constructor of the Royal Dockyard, Devonport, read a paper on the launch of a battleship, descriptive of the launching of H.M.S. Ocean. The last paper read at Tuesday's sitting was on "Railway Viaducts in Cornwall, Old and New," by Mr. T. H. Gibbons, engineer of the Great Western Railway. By means of diagrams and a model, he described the design and method of construction of the old Cornish viaducts, which formed so prominent a feature in the railway engineering of the west. One class of viaduct consisted of timber trusses to carry the decking and the railway, with timber piles to form the piers. Some of the creeks crossed have deposits of mud 70ft. deep, so that the piling for foundations is of a somewhat elaborate nature. The heights range from 40ft. to 100ft. The renewal of the timber trusses, an extremely difficult operation, has to be carried out about every twenty years. Another form of viaduct consists of timber struts radiating from the top of masonry piers. In this case renewals are more easily effected, it being possible to renew a strut in less than an hour. These timber constructions are apparently fast disappearing, the author saying that when the work now going on is finished there will only remain one timber viaduct between Truro and Penzance, and thus a picturesque and characteristic feature in connection with railway construction is disappearing on this line. Members of the Institution, after having lunched in the pavilion on the pier, embarked on a steamer for Devonport Dockyard, which was inspected under the guidance of the dockyard officers. On the Wednesday four papers were read and discussed. Mr. Whately Eliot, Admiralty superintending civil engineer at Keyham extension works, first read a paper on "The Mechanical Appliances Employed in the Construction of the Keyham Dockyard Extension Works." He pointed out how largely in important construction works machinery of every description was now superseding hand labour. The new works at Keyham occupied 113 acres, largely land reclaimed from the Tamar. The works comprised a tidal basin of ten acres, a closed basin of 35½ acres, besides large graving docks. The whole of the work was being carried out by contract undertaken by Sir John Jackson, of Westminster. Amongst the appliances described, the most interesting and novel were the scoops used for excavating soft mud, which was a more difficult material to deal with than might be thought. The scoops were dragged along the surface of the mud by chains, and were made to automatically tip the spoil into barges for carrying to sea. The way in which this was done was entirely novel and very ingenious. The next paper was by Mr. Robert Mayston, chief engineer of Her Majesty's dockyard, Devonport. He described the machinery of Her Majesty's ships *Proserpine* and *Psyche* as illustrative of the work

done at Keyham, particularly with reference to the practical training of the engineer students. Mr. Edward Sandeman, borough water engineer, Plymouth, then read a paper briefly describing the means that had been adopted for supplying Plymouth with water, the present works being, in fact, an enlargement and extension of those commenced in the year 1591 by Sir Francis Drake. The last paper read at the meeting was by Mr. Henry A. Garrett, borough engineer and surveyor at Torquay, the subject being "Refuse disposal and the result obtained from a six months' working of the refuse destructor at Torquay." The heat obtained from the burning of the town refuse was used for raising steam, and tests were quoted which showed that the destructor was capable of developing more power than was required for the machinery introduced in its original construction. An electrical installation was therefore adopted, and was now in course of construction, and will be used for lighting part of the street gas lamps. After a short discussion on this paper, the meeting was brought to a conclusion with votes of thanks to those who had taken part in the reception of the institution.

### THE HIGH-PRESSURE HEATING APPARATUS.

The newly-formed Institution of Heating and Ventilating Engineers held their summer outing at Stourbridge recently on the invitation of the president, Mr. Walter Jones, of the firm of Messrs. Jones and Attwood, of Titan Works, Stourbridge. The party visited the Titan Works and the Glass Works of Messrs. Thomas Webb and Sons, Ltd. A meeting was afterwards held at Stewponney Hotel, with Mr. Walter Jones in the chair, when a paper was read by Mr. A. E. Grindrod, of Messrs. Renton, Gibbs and Co., on "The Disfavour shown by Fire Insurance Companies to the High-pressure Heating Apparatus." He said that undoubtedly the greatest difficulty at the present time presenting itself to engineers fixing the high-pressure hot-water heating apparatus was the disfavour with which the fire insurance companies regarded the system. He was quite sure such an apparatus properly fixed was perfectly safe, and could not possibly be the direct cause of fires any more than other systems of heating. He had had a long experience with the system, and had never known such an apparatus to set fire to any building. Yet, unfortunately, for the last few years this disfavour of the fire offices had become more pronounced, and it was quite time that the subject should be thoroughly considered. He put the questions: What were the causes for this disfavour shown by the fire insurance companies? And, secondly, how was this disfavour to be removed? To the first question he answered that most certainly the principal cause was bad and incompetent workmanship. He came across much defective work, and had repeatedly to put right work done by firms who could not have given any study whatever to the system. He went into details on the question, and gave instances where the system had been condemned, when it was the workmanship which was at fault. As to his last question, he felt sure that their wisest and best course was to approach the Fire Insurance Tariff Committee in London, and lay their case before them, and get their view of the matter. He thought that it would be of great advantage in preventing incompetent workmanship if this Institution insisted upon members passing an examination, which would prove them competent to do their special work. This would be a stimulus to men to study their work, and membership would be considered an honour, work would be more intelligently done, and they would hear very much less of the disfavour shown by the fire insurance companies to the high-pressure hot-water heating apparatus. In the discussion which followed, Mr. W. R. Maguire (Dublin) said that he was engaged in the erection of a small bore apparatus as well as the erection of a low pressure apparatus, and hot-air apparatus, and he could instance a case in Dublin where a fire occurred, attributed

to but not caused by this apparatus. A building was erected in timber—a temporary building—and a contract was entered into amounting to about £500 for heating it with high pressure apparatus. The work had gone about half way through when the insurance companies combined, put their foot down and refused to insure the building. The result was the contractors and the company had to meet, and arrange for them to remove it. In its place hot-air apparatus was placed, which in his opinion was not so safe as the high pressure. They all knew that the hot-air apparatus became red hot, the flues became intensely hot, and there was a good deal of danger attached to that form of apparatus also. They knew very well what the insurance companies wanted; they wanted an apparatus, if they could get it, that would be perfectly safe. This they could not get, and then they would want an apparatus that would be the nearest to perfectly safe. Whether in town, where experts could be called in to meet difficulties, or in the country house, far away from experts, they wanted an apparatus to meet this; they wanted an apparatus that, in case of frost would be tolerably safe, and there would be no danger of pipes freezing up, and bursts occurring which would scatter the burnt fuel. Probably the burst would occur within the brick or metal boiler, and a fire occur in that case. Then the Companies wanted an apparatus which did not require an expert down to pump the apparatus full. They knew a low-pressure apparatus was safe, and there was not so much fear of frost, and further, there was no pumping required, and no great risk of explosion occurring. Several other members spoke in the discussion and in reply Mr. Grindrod said he did not wish to condemn the insurance companies for the manner in which they looked upon this work. They had found out that they had had to pay through high-pressure apparatus going wrong, before they condemned the system, but the faults lay more in neglect than in the system, and if the apparatus was properly fixed, from his experience—and he had had twenty years—he could tell them they were perfectly safe, and he had never known such an apparatus to set fire to any building. He thought if this class of apparatus was more carefully fixed, they would have no difficulty in getting the insurance companies to remove their restrictions, because it was only a matter of profit with them. A dinner was held in the evening, after which Mr. L. F. Pearson, managing director of the Beeston Foundry Company, Limited, Nottingham, read a paper on "Low-pressure water as a heating medium," but the discussion thereon was deferred until the next meeting, which is to be held at the Holborn Restaurant on October 5th.

**A Munificent Offer.**—At a meeting of the Bristol Town Council on Tuesday last week, it was stated that Sir William Henry Wills had offered to give £10,000 towards the erection of a Municipal Art Gallery building, on a site to be secured by the Corporation, near the Bristol Museum, Queen's Road, Clifton. The Council voted its grateful thanks to Sir William for his generous gift.

**Leeds Dead Meat Market**, which has just been erected in New York Street by the Leeds Corporation was formally opened last week. The market has been erected from designs by Messrs. Hanstock and Sons, of Leeds and Batley. The site contains 3,260 square yards, and it contains a market hall for sale of meat, a department for the Corporation officials, slaughter-houses and lairages for beasts and pigs, tripery, &c., and cold stores and chill rooms (in the basement). The wholesale meat market, which is the largest and most important of the departments, is 195ft. 4in. long, 45ft. wide, and its height is—to the eaves of the walls 25ft. 8in., and from floor to ridge 41ft. 6in. It is divided into twenty-two stalls, with centre avenue from end to end. The building has cost about £25,319 to erect, though in all a total of £40,860 has been expended.



## Professional Practice.

**Bilston.**—At the Staffordshire County Court an action was heard recently in which Mr. Richard James Rowe, Architect, of Bilston, sought to recover from Mr. Edwin Jones, of Mount Pleasant, Bilston, £62 14s. for architect's fees. Plaintiff said in January he received instructions from defendant to survey a piece of land in Wellington Road, Bilston, prepare plans for the erection of four houses, get out the quantities, and obtain tenders. The lowest tender was £2,090. Subsequently defendant decided not to build. For the defence, it was contended that the cost of the houses was not to exceed £1,600, and that defendant was only to charge four per cent. Judgment was given for the amount claimed, with costs.

**Clacton-on-Sea.**—It is proposed to extend Christ Church, Clacton-on-Sea, by the addition of a large school and lecture hall, seating about 400, with four large class rooms, which can be thrown into it. The scheme also pro-

submitted that no negligence on the part of his client had been shown. All he did was to give a rough idea of what the work would cost, without entering into anything like an elaborate estimate, and to some extent he was misled in his calculations by the plaintiff. The jury found for the plaintiff for £100 on his claim, and for the defendant on the counter claim.

**Exeter.**—The competition for a new Boys' School at St. Thomas, near Exeter, has resulted in the first premium being awarded to Messrs. McKewan and Dunn, of Birmingham, and the second premium to Messrs. Ayling and Hulbert, of Westminster. The plans were exhibited last week at the offices of the St. Thomas Urban District Council. The conditions of competition presented some curious and not very satisfactory features, on which we commented in our issue for April 26th. There were eighteen competitors.

**Folkestone.**—The new building specially designed and constructed on the East Cliff, Folkestone, for the carrying on of the work of

The site has a frontage of 73ft. 4in. to Marsh Street and 63ft. 9in. to Mill Street, and on this the company have already commenced operations. The premises will consist of a four-storied building, and will be erected in the Renaissance style. In the semi-basement will be located the stores. The underground cables will be led in from the streets on this level and carried past the various floors to the test and switch rooms above by means of a cable shaft specially constructed for their reception. The main entrance will be from the Trinity Street front and will be a recessed porch doorway leading to the vestibule; the latter will open into a road corridor. The corridor then widens into a large hall, on the right of which will be the main staircase leading to the floors above. On the left will be the call offices for use by the public. The first floor will cover accommodation for the inspector's staff in three large rooms. The caretaker's living rooms will also be situated on the Mill Street wing of this floor. On the second or top floor will be the switch-room. This will be the most important room in the building, and has been specially designed for its purpose. It will occupy the entire length of the Marsh Street



PROPOSED EXTENSION TO CHRIST CHURCH, CLACTON-ON-SEA. T. H. BAKER, ARCHITECT.

vides for the extension of the church, and the provision of a much-needed organ. The existing church was built in 1887, from the plans of Mr. T. H. Baker, architect, of Clacton and Colchester, whose design was selected in competition, and he will be employed for carrying out the proposed extension, of which we give an illustration on this page. The church, which at present seats just over 400, is built of Luton bricks and Bath stone dressings, and is in the Early English Gothic style. The estimated cost of the additions is £2,500.

**Driffeld.**—At the Yorkshire Assizes, at York Castle, recently, Mr. Justice Grantham and a special jury heard an action in which Mr. Daniel Byass, maltster and corn merchant, Driffeld, sued Mr. Richard Hardy, architect, of Nottingham, for damages arising from negligence on the part of the defendant in the reconstruction of malt kilns at Driffeld. The claim was for £226, the difference between £150, the amount for which the defendant undertook to reconstruct a malt kiln, and £376, the amount actually paid by the plaintiff for the work done. The defendant put in a counter claim for £44 9s. 4d. for services rendered to the plaintiff. For the defence it was

Mrs. Mearn's Convalescent Home, was duly dedicated and opened last Tuesday week. The ceremony of opening was presided over by the Mayor of Folkestone, Alderman Salter, J.P., who was assisted by Sir Edward Sassoon, M.P. The building consists of three floors, enclosed with hollow walls faced with red brick, all dressings, strings, and baluster columns being of buff terra-cotta by Messrs. Stiff, of Lambeth. The floors are fireproof. The walls of the lavatories, bathroom, w.c.'s, kitchen, and other offices are lined with Newellite tiles. The building is heated throughout by a low-pressure hot-water system, carried out by Messrs. Rosser and Russell; and the lighting throughout is by electricity installed by Messrs. Bergtherl and Young. The bedroom accommodation is designed so that each patient has a separate or private cubicle. The architect is Mr. W. A. Hughes, of 3, Dean Yard, Westminster, and the builders are Messrs. T. W. Gregory and Company, of Station Works, Clapham Junction, S.W.

**Hanley.**—The National Telephone Company are having a new exchange erected in Trinity Street, and a site has been purchased at the corner of Marsh Street and Mill Street.

side, a distance of 68ft., and will be 31ft. wide with an open roof having a top lantern light for a greater portion of its length, in addition to the usual windows. The architects are Messrs. B. Scrivener and Sons, of Hanley, and the builders are Messrs. Tompkinson and Bettelley, of Longton.

**Shrewsbury.**—At the Staffordshire County Court an action was recently heard in which Messrs. Manton and Sons, architects, Wolverhampton, sought to recover £21 17s. from Trouncer and Co., brewers, of Shrewsbury, and Mr. Burdass, a member of the firm, for fees for the preparation of plans and other work. The plaintiffs' case was that they received instructions from Mr. Burdass to prepare the plans and specifications for alterations in connection with the Onward Club at Compton, at 5 per cent. After the work had been completed the alterations were not proceeded with, and a dispute arose as to the amount to be paid. Defendants had paid £10 18s. 6d. into court, as a fair sum. The defence was that the plaintiffs had exceeded instructions. His Honour considered the amount paid into court sufficient, and gave judgment for the defendants.



## Trade and Craft.

### CAILLET'S MONORAIL.

We have received from the Monorail Portable Railway Co. Ltd., of 22, Laurence Pountney Lane, London, E.C., a book of over fifty pages, which describes the Caillet monorail system of transportation. It contains illustrations of its practical use in various countries. The system consists of a single rail of light section supported by steel sole plates at intervals of a few feet which are laid down direct on the surface of the ground without sleepers, ballasting, or other special preparation. The rails are joined together by scabbard fish-plates, which fit the lower part of the rail and are slid along so as to form the joints, thus obviating any necessity for boring holes in the rails. The line is constructed with ease and rapidity, and can be used immediately after being laid down. The rolling stock comprises cars for hand traction and trucks for animal traction. The cars can be obtained in various sizes and shapes, according to the use for which they are intended. The car runs on two wheels of the same size, one being placed before and the other behind the car. The hand car is put in motion and balanced on the rail by means of a lever in the form of a rod, which projects from the back line of the car at right angles to the line of the rail. This rod is adjustable, and can be lengthened to suit convenience. Assuming that the car is so loaded that its balance is nearly exact, it is plain that very little exertion is required for propulsion. In fact the act of propulsion maintains the equilibrium of the car without any special effort. One of the advantages of the system is the fact that it provides a uniform and continuous surface, preventing the jolting and jarring which result from traction over uneven roads or tracks, and it is, therefore, suitable for transporting fragile and heavy loads. The cars and trucks cannot be upset. Caillet's monorail is very portable, and can be constructed and repaired very easily. The firm state that they will be pleased to send estimates for fully-equipped lines, suitable for any specified class of transport or traffic, on application.

### HENDRY & PATTISSON, LIMITED.

We have just received copies of the catalogues of casements and art metal work, and of heating and ventilating appliances, made by Messrs. Hendry and Pattisson, Ltd., of 4, Marlborough Mews, Hill's Place, Oxford Street, London, W. The company incorporated the late firms of Mr. D. O. Boyd, and Messrs. E. Farrar and Co., the original makers of "Farrar's" well-known casements. All "Farrar's" casements are hung on steel pivots, with strong gun metal bearings, to prevent any dropping of the opening frame, and, when required, are fitted with a condensation cill. This cill, which is fitted with an arrangement whereby all moisture settling on the inside is carried outside, provides a great advantage in a humid climate like that of England. Many objections have been raised to the usual form of sash hung upon pulleys, lines and weights, and for many reasons casements are desirable. The advantages of windows which can be easily opened in weather such as we have lately been experiencing cannot be gainsaid. The strongest objection against the ordinary casement is that in wet weather it is not watertight, and especially does this objection apply in buildings exposed to the force of the wind. This disadvantage is overcome in casements made by Messrs. Hendry and Pattisson, and these at the same time can be had to open both inwards and outwards. Another advantage they possess is that the glass can be cleaned from the room. The parts are so simple that they cannot get out of order. The casements are made in either bronze, steel, or wrought iron. Although Messrs. Hendry and Pattisson have such excellent goods in the shape of casements, they study the wishes of customers who like the ordinary form of double hung sash in providing a reversible window sash,

which meets the one great objection to this form of window, in the ease with which the windows can be cleaned. The top one can easily be arranged to admit an ascending current of air in rainy weather, yet keeping out the rain. Both sashes can be fixed at any angle, and can be so arranged as to leave nearly the whole space of the frame open for getting in furniture, &c. The sashes can be adapted to suit any old frames. In the same catalogue we note several designs for artistic wrought iron work, which is at the present moment in such great demand. The firm carries out this art metal work from architects' own designs. Another speciality of this firm is D. O. Boyd's patent ventilating grates and stoves, which are made in a number of patterns and shapes to suit any room in an ordinary house. They are specially suitable for heating large rooms effectively, such as hospital wards, workhouses, schools, libraries, public halls, and churches. The upper part of these stoves has an arrangement which enables fresh, cool air to enter from the outside of the building in summer when fires are not alight; in winter the air can be warmed to any desired temperature, and is not burnt in so doing. The air supply can be regulated as required. The stoves can be fixed in the centre of a ward, the products of combustion being carried off by a descending flue underneath the floor. Percival's Patent Automatic Acetylene Gas Generator is solely manufactured by this firm. This new illuminant is increasing in use, as it has been proved to be less poisonous than coal gas, and the light given by it is about sixteen times more than that of coal gas. Percival's Generator gives a steady, cool, and brilliant light, and is so simple, that it can be managed by any domestic servant. The generator is perfectly safe, the gas being only under a pressure of about one-eighth of the maximum allowed by the authorities. It can be recharged while in action, and without variation of the pressure, thus enabling a constant supply of gas to be kept up.

## New Companies.

### Jarrah Timber and Wood Paving Corporation Limited.

An issue is announced this week of £100,000 First Mortgage Debentures of this company. The stock is issued at par and will bear interest at five per cent. The object of the issue is to acquire and develop 25,000 acres of the Downer Estate, which formerly intersected the eastern and western sections of the original property of the company. This issue of debenture stock will be secured by a specific first mortgage to the trustees for the debenture stockholders of the whole of the Corporation's freehold lands, buildings, sawmills, railways and tramways in Western Australia, and by a floating charge on the stocks of timber at the mills and in transit, locomotives, rolling stock and other assets, so that the issue seems fully secured both as regards capital and interest. Further particulars of the issue will be found in our advertisement pages.

### Weybridge Furnishing Company Ltd.

This company was registered on July 20th, by Scatliff and Gray, 6, Lancaster Place, W.C., with a capital of £6,000 in £1 shares, to acquire and carry on the business of builders, electric and sanitary engineers, &c., carried on at Queen's Road, Weybridge, as the Weybridge Furnishing Company. The first directors (to number not less than three nor more than five) are E. L. Shaw, C. H. Eray, H. Wilson, F. H. Weller, C. O. Wallasey, C. Snook, and J. Cave. Qualification, one share. Remuneration, £5 each per annum.

### Saxon Portland Cement Company, Ltd.

This company was registered on July 19, by Waterlow Brothers and Layton, Limited, Birch Lane, E.C., with a capital of £40,000 in £1 shares (20,000 preference), to carry on at Cherryinton, near Cambridge, and elsewhere, the business of Portland cement manufac-

turers, stone and tile merchants, &c., and to adopt two agreements with G. Keeble, A. J. Keeble, and G. H. Innes. The first directors (to number not less than three nor more than seven) are G. Keeble, A. J. Keeble, G. H. Innes, A. C. Davis, and A. Durose. Qualification, £250. Remuneration as fixed by the company.

### Bargoed Artizans' Cottage Company, Ltd.

This company was registered on July 21, by Jordan and Sons, Limited, 120, Chancery Lane, W.C., with a capital of £7,000 in £10 shares, to acquire or construct houses, buildings, roads, &c., in England or Wales. Registered without articles of association. Registered office: Firwd Villa, Mountain Ash, Glamorgan.

### Smokeless Chimney Company, Limited.

This company was registered on July 21st, by Jordan and Sons, Limited, 120, Chancery Lane, W.C., with a capital of £30,000 in £1 shares, to acquire from Thomas Lowe, of Nottingham, and all others having any claim therein, Patent No. 22,614 of 1897, to adopt an agreement between Thomas Lowe, of Nottingham, of the first part, W. C. Courts, of Nottingham, of the second part, John O. Earp, of Matlock, Derby, of the third part, Joseph C. Brister, of Manchester, of the fourth part, and the company of the fifth part, and to carry on the business of agents, engineers, &c. Registered without articles of association.

### North Riding Assets Co. Limited.

This company was registered on July 18th, by Adam, Burn, and Son, 6, Bell Yard, Doctors' Commons, E.C., with a capital of £20,000 in £1 shares, to acquire, develop, and turn to account and deal with real and personal property of all kinds, and in particular lands and buildings, hereditaments, goods, merchandise, plant, machinery, stock-in-trade, produce, works, concerns and undertakings. The number of directors (to number not less than three nor more than seven) are George Bradford, William H. Hardy, Gervase E. Markham, Hermann Ronnebeck, and Francis T. Tristram. Qualification, £300. Remuneration as fixed by the company. Registered office, Post Office Chambers, Marton Road, Middlesborough.

### Brushes, Limited.

This company was registered July 20th, by Waterlow Brothers and Layton, Limited, Birch Lane, E.C., with a capital of £100,000 in £1 shares, to adopt and carry into effect two several agreements, each bearing date July 8th, 1899, and expressed to be made between Thomas Shaw and Sons, Limited, of the one part H. Wilde of the second part, and H. W. Rose and G. Rose of the third part, for the acquisition, by purchase or otherwise, as a going concern, of the business now and hitherto carried on under the style or firm of Thomas Shaw and Sons, Limited, at Warre Street, Ashton-under-Lyne, and Miller Street, Manchester; a similar business carried on by H. Wilde as J. Wilde and Son at Oldham, and the brush manufacturing business carried on by H. W. and G. Rose at St. Albans, Herts, under the style of H. Rose and Sons, to develop and extend the said business, and, generally, to carry on in all or any of their respective branches the business of brush manufacturers, and as importers and exporters of and dealers in all materials used in connection with the above, together with any plant, apparatus, or machinery necessary or convenient therefor; to acquire, for the purposes of the company or otherwise, any lands, buildings, factories, warehouses, turning engines, &c.; to acquire and turn to account any patents, patent rights, and inventions; as stock and share dealers, bill brokers, &c. The first signatures (each one share) are: J. B. Grundy, T. Shaw, H. Wilde, W. Rose, J. G. Wilde, G. Rose, and H. Rose. The first directors (of whom there shall be not less than five nor more than seven) are the first signatories to the memorandum of association. Qualification, £500. Remuneration to be fixed by the company.



**Times Nut and Bolt Works, Limited.**

This company was registered on July 21, by Waterlow Brother and Layton, Limited, Birchin-lane, E.C., with a capital of £20,000 in £1 shares. Object to adopt an agreement with T. M. Anderson and F. A. Murphy, and to carry on the business of nut, bolt, and machine tool makers, engineers, &c. The first directors (to number not less than three nor more than seven) are to be appointed by the subscribers. Qualification, £200. Remuneration as fixed by the company.

**Robert Stephenson and Co., Limited.**

This company was registered July 19th, by W. A. Crump and Son, 10, Philpot Lane, E.C., with a capital of £500,000 in £10 shares, to adopt and carry into effect an agreement expressed to be made between Sir J. Whitwell Pease, Bart, M.P., Sir C. Furness, and Sir R. Dixon of the one part and this company of the other part, for the acquisition of certain businesses mentioned in the said agreement, and to develop and turn to account the same in such manner as the company shall see fit; and, generally, to carry on in all or any of their respective branches the businesses of mechanical, marine, and electrical engineers, engine repairers, ship builders and repairers, shipowners, carriers by land and sea of passengers, goods, mails, troops, &c.; as colliery proprietors, coal merchants, ironfounders, steel converters, producers and suppliers of gas, coke manufacturers, cement makers, brick and tile manufacturers, makers of ropes, masts, spars, &c.; as sawmill proprietors and timber merchants, builders and contractors, farmers and graziers, stock raisers, ice merchants, refrigerating storekeepers, warehousemen, wharfingers, to construct and maintain rail and tram roads, as dealers in live and dead stock, grain, &c.; to acquire and turn to account any patents, patent rights, real and personal property, &c., in any part of the world. The first signatories (each one share) are Messrs. W. C. Warwick, P. A. Heitland, G. P. Carpenter, W. J. Fox, W. G. J. Copeman, W. R. Barr, and W. Leaver. The first directors (of whom there are to be not less than five nor more than seven) are Sir R. W. Pease, Sir R. Dixon, Sir C. Furness, J. A. Pease, Lieut.-Colonel P. Watts, and H. Withy. Qualification, £2,000. Remuneration, £2,000, divisible, per annum. Registered office: South Street, Newcastle-on-Tyne.

**Joseph Nathan and Co., Limited.**

This company was registered July 19th, by

Hollams and Co., 30, Mincing Lane, E.C., with a capital of £127,000 in £100 shares, to adopt and carry into effect a certain agreement for the acquisition, by purchase or otherwise, as a going concern, of the business of dealers in wool and other produce, as now and hitherto carried on under the style or firm of Joseph Nathan and Co., at 17, Fenchurch Street, E.C., and Wellington, New Zealand, the said agreement expressed to be made between J. E. Nathan, D. J. Nathan, and L. J. Nathan of the one part and this company of the other part; to develop and extend the same, and, generally, to carry on in all or any of their respective branches the business of wool brokers, commission agents, importers and exporters, refrigerating store keepers, shippers, shipowners, carriers by land and sea, forwarding agents, farmers and graziers, stock-raisers, cattle dealers, extract of meat manufacturers, preservers and packers of provisions of every description; colliery owners and coal merchants, brewers and maltsters, wine and spirit merchants, miners, smelters, and metallurgists; as manufacturers of artificial manures, tallow manufacturers; as mechanical electrical, and general engineers, ironfounders, ironmasters, steel converters, carpenters, wood workers, &c.; to acquire and turn to account any real or personal property, patents, patent rights, mines, grants, leases, claims, concessions, &c., in any part of the world. The signatories (each one share) are Messrs. J. E., D. J., L. J., M. J., P. J., and C. J. Nathan and H. Isaacs. The first directors (of whom there shall be not less than two nor more than seven) are J. E., D. J., L. J., and M. J. Nathan. Qualification of the first directors, £3,000; of ordinary directors, £1,000. Remuneration of the above-named as managing director, £1,900 per annum and a percentage of the profits; remuneration of ordinary directors to be fixed by the company.

**The Death of Sir Henry Dryden, Bart.,** occurred at his residence, Canons-Ashby Hall, Northamptonshire, last Monday week. Sir Henry was a well-known antiquary, and wrote a large number of papers and articles for the Scottish Society of Antiquaries, the Scottish Architectural Society, and the Northampton and local archaeological societies and their publications. Last year he presented to the Corporation of Northampton his large collection of drawings, plans, and rubbings that he had collected in Northamptonshire during the last sixty years; these were contained in more than 500 portfolios.

**CURRENT PRICES.****OILS AND PAINTS.**

		£ s. d.	£ s. d.
Castor Oil, French	per cwt.	1 2 2	1 4 0
Colza Oil, English	per cwt.	1 3 3	—
Copperas	per ton	2 0 0	—
Lard Oil	per cwt.	1 8 9	1 9 0
Linseed Oil	per cwt.	1 0 3	—
Neatsfoot Oil	per gal.	0 2 6	0 4
Petroleum, American	per gal.	0 0 6 1/2	—
Do., Russian	per gal.	0 0 5 1/2	—
Pitch	per barrel	4 8 0	0 8 6
Tallow, Town	per cwt.	1 5 0	1 7 3
Tar, Stockholm	per barrel	1 6 6	—
Turpentine	per cwt.	1 10 6	—
Glue	per cwt.	1 14 0	2 18 6
Lead, white, ground, carbonate	per cwt.	0 19 0	—
Do. red	per cwt.	0 17 3	—
Soda crystals	per ton	2 15 0	—
Shellac, orange	per cwt.	3 4 6	—
Do. sticklac	do.	2 2 6	2 15 0
Pumice stone	do.	0 8 9	—

**METALS.**

Copper, sheet, strong	per ton	88 0 0	—
Iron, bar, Staffs, in London	do.	8 0 0	9 0 0
Do. Galvanised Corrugated sheet	do.	13 0 0	13 10 0
Lead, pig, Spanish	do.	14 8 9	—
Do. English common brands	do.	14 13 9	—
Do. sheet, English, 16 lb.	do.	16 10 0	—
Do. pipe	do.	17 5 0	—
Nails, cut, 4 in. to 6 in.	do.	9 0 0	10 0 0
Do. floor brads	do.	8 15 0	9 15 0
Tin, Foreign	do.	143 12 6	144 2 0
Do. English ingots	do.	146 10 0	—
Zinc, sheets, English	do.	140 0 0	28 10 0
Do. Vieille Montaigne	do.	31 0 0	—
Do. Spelter	do.	25 15 0	26 0 0

**TIMBER.****SOFT WOODS.**

Fir, Dantzic and Memel	per load.	3 0 0	4 0 0
Pine, Quebec Yellow	do.	4 7 6	6 5 0
Laths, log, Dantzic	per fath.	4 10 0	5 10 0
Deals, Petersburg	do.	4 0 0	6 10 0
Do. Archangel 2nd & 1st	per P. Std.	10 10 0	—
Do. do. 4th & 3rd	do.	12 0 0	12 5 0
Do. do. 2nd	do.	7 5 0	8 5 0
Do. Riga	do.	8 10 0	8 10 0
Do. Petersburg 1st Yellow	do.	10 10 0	16 0 0
Do. do. 2nd	do.	10 10 0	12 0 0
Do. do. Unsorted	do.	10 0 0	10 15 0
Do. do. White	do.	7 15 0	11 5 0
Do. Swedish	per P. Std.	9 5 0	16 10 0
Do. White Sea	do.	12 5 0	—
Do. Quebec Pine, 1st	do.	18 0 0	19 0 0
Do. do. 2nd	do.	12 0 0	—
Do. do. 3rd &c.	do.	7 15 0	9 15 0
Do. Canadian Spruce, 1st	do.	9 0 0	10 5 0
Do. do. 3rd & 2nd	do.	6 5 0	7 15 0
Do. New Brunswick	do.	7 5 0	8 0 0
Battens, all kinds	do.	6 10 0	8 10 0
Flooring Boards, 1 in.	per square	0 9 6	0 12 0
Do. prepared, 1st	do.	0 8 9	0 10 9
Do. 2nd	do.	0 8 9	0 10 9
Do. 3rd &c.	do.	0 6 9	0 9 6

**HARD WOODS.**

Ash, Quebec	per load	3 17 6	4 10 0
Birch, Quebec	do.	3 12 6	3 17 6
Box, Turkey	per ton	7 0 0	15 0 0
Cedar, Lin., Cuba	per ft. sup.	7 0 4	0 0 4 1/2
Do. Honduras	do.	0 0 3 1/2	—
Do. Tobacco	do.	0 0 4 1/2	0 0 5 1/2
Elm, Quebec	per load	4 12 6	5 10 0
Mahogany, Average Price for Cargo, Honduras	per ft. sup.	0 0 4 7/8	—
Do. African	do.	0 0 3 1/2—4 5/8	—
Do. St. Domingo	do.	0 0 5 9/32	—
Do. Tobacco	do.	0 0 4 15/16—6 1/32	—
Oak, Dantzic and Memel	per load	3 5 0	3 5 0
Do. Quebec	do.	4 12 6	5 0 0
Teak, Rangoon, planks	do.	8 15 0	13 15 0
Wainscot, Riga (Baulk)	do.	3 15 0	5 15 0
Do. Odessa Crown	do.	3 15 0	5 15 0
Walnut, American	per cu. ft.	0 2 6	0 4 2

**LONDON PLATE-GLASS INSURANCE CO. Ltd.**

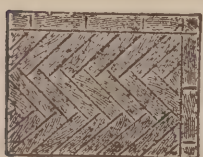
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For Churches, Schools, Offices, &c.

Estimates and full particulars on application to

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## BOWER & FLORENCE,

### Polished Granite Manufacturers,

### ABERDEEN, N.B.

London Office: 64, FINSBURY PAVEMENT, E.C.

Quarries: PETERHEAD, N.B.

## PERFECTION

### IN

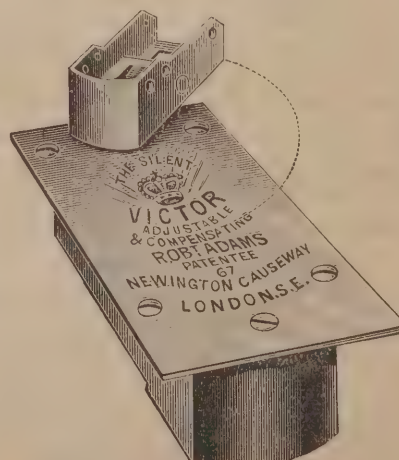
# Spring Hinges

The "VICTOR" Double Action Spring Hinges open wider than any other—viz., 135° each way, i.e., 45° beyond right angles—and close with a perfect check action.

**ROBERT ADAMS,**  
PATENTEE,

65 & 67, Newington Causeway, LONDON, S.E.

Telegrams: "ROBERT ADAMS, LONDON."



The Crown Victor" showing opening capacity

## PERFECTION

### IN

# Spring Hinges

The "VICTOR" Single Action Spring Hinges open wider than any other—opening to and closing from the angle of 180°, i.e., the half circle, with a perfect check action.

**ROBERT ADAMS,**  
PATENTEE,

65 & 67, Newington Causeway, LONDON, S.E.

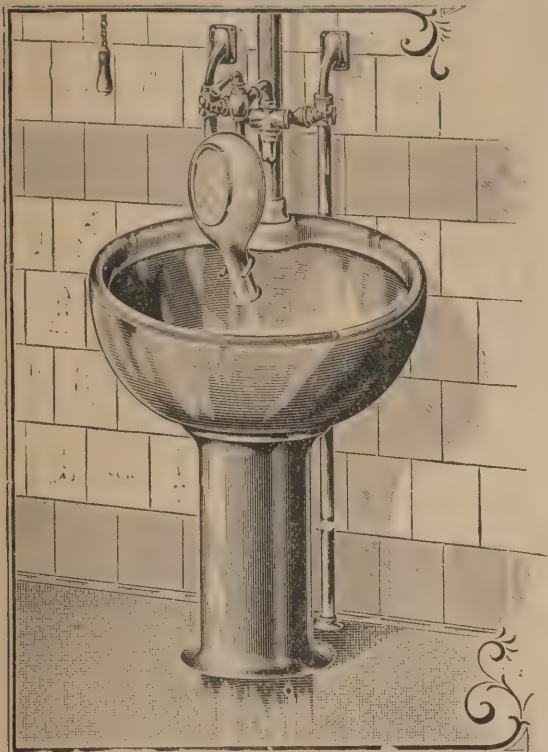
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## COMING EVENTS.

Wednesday, August 2.

BUILDERS' FOREMEN AND CLERKS OF WORKS' INSTITUTION.—Ordinary meeting of the members. 8 p.m.

THE INSTITUTE OF SANITARY ENGINEERS (Incorporated).—Election Committee will meet at 2.30 p.m.; the Council at 3.30 p.m.; and the General Purposes Committee at 5 p.m.

Saturday, August 5.

NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—Annual general meeting at the Wood Memorial Hall, Newcastle-on-Tyne, at 2 p.m.

## TENDERS.

Information from accredited sources should be sent to "The Editor." No results of tenders can be accepted unless they contain the name of the Architect or Surveyor for the Work.

BRIGHTON.—For the construction of concrete groynes and sea-wall, Madeira-road, for the Town Council. Mr. F. J. C. May, C.E., Town Hall, Brighton.—Pedrette and Co. ... £24,400 | Cooke and Co., West-Mowlem and Co. ... 32,435 | minister\* ... £17,367 \*Accepted.

[Borough Engineer and Surveyor's estimate, £18,563.] CHIPPENHAM (Wilts).—For technical and secondary schools, for the Education Committee. Mr. Robert E. Brinkworth, architect, Chippenham, Wilts.—W. Beazley ... £5,774 18 | Smith and Light, Downing and Rud. ... 4,677 0 | Chippenham\* ... £4,310 0 \*Accepted. [Architect's estimate, £4,500.]

EASTBOURNE.—For alterations and additions to "The Windsor Tavern," Langney-road, for Messrs. Page and Overton, Limited. Mr. A. Broad, architect, 22, George-street, Croydon. Quantities by the architect:—M. Hookham ... £1,732 17 5 | J. Martin ... £1,312 11 6 W. Martin ... 1,403 10 0 | J. Peerless ... 1,199 0 0 W. Newman ... 1,384 14 5 | Peerless-Dennis ... Wood and Sons ... 1,355 0 0 | and Co.\* ... 1,105 0 0 \*Accepted.

EDMONTON.—For additions to the "Three Crowns," Upper Fore-street, Edmonton, for Messrs. E. J. Rose and Co. Mr. W. M. Brutton, architect, 5, Green-street, Leicester-square, W.C.:—

Structural and Fittings.  
W. Rowe ... £3,050 0 | Edwards and Med-Little and Senecal ... 2,998 0 | way ... £2,887 0 Whitehead and Co ... 2,970 0 | Courtney and Fair-Pritchard and Renwick ... 2,964 0 | bairn ... 2,863 0 H. and F. Warne ... £243 8 | Warne and Co.\* ... £247 0 W. Winn ... £133 6 | Buckley and Beach\* £103 10 \*Accepted.

HANLEY.—For rebuilding the "Star Inn," Marsh-street, Hanley, for Messrs. Parker and Co., Burslem. Quantities supplied. Mr. W. A. Baynes, C.E., architect and surveyor, Shakespeare-building, Hanley:—Ball and Robinson ... £1,808 | Colley and Lindop ... £1,558 T. Godwin ... 1,608 | T. Chatfield (accepted) 1,495 C. Cornes ... 1,579 | L. Taylor † ... 131 G. Ellis ... 1,574 † Accepted for barfittings.

HESWALL-ON-THE-DEE.—For new house, Heswall Park, Heswall-on-the-Dee, Cheshire, for T. Squire Barnett, Esq. Contract No. 1. Samuel Davies, M.S.A., architect and surveyor, Runcorn and Frodsham:—A. P. Campbell, Heswall (accepted) ... £1,112 HESWALL-ON-THE-DEE.—For new house, Heswall Park, Heswall-on-the-Dee, Cheshire, for T. Squire Barnett, Esq. Contract No. 2. Samuel Davies, M.S.A., architect and surveyor, Runcorn and Frodsham:—A. P. Campbell, Heswall (accepted) ... £750

HURSLEY (Hants).—For new workhouse. Messrs. Cancellor and Hill, architect, Winchester:—C. Jobbins ... £11,177 0 | F. Beale ... £29,074 Wort and Way ... 10,250 0 | Rashley ... 9,835 J. Treherne ... 9,535 13 | Mussellwhite and Son, F. Walter ... 9,687 0 | Basingstoke\* ... 9,495 Jenkins and Son ... 9,683 0 \*Accepted.

KILBURN, N.W.—For the erection of the Kilburn Palace of Varieties. Messrs. Palgrave and Co., architects, Westminster. Quantities by Mr. George Stephenson:—Turtle and Appleton £22,896 | W. Johnson &amp; Co., Ltd. £21,988 W. Wallis ... 22,066 | Jas. Smith &amp; Sons, Ltd. 20,750 C. F. Kearley ... 22,005 | J. Lovatt ... 20,550 [All exclusive of furnishing.]

LEYTONSTONE.—For reconstructing and decorating the "Crown Hotel," High-road, for Messrs. Hoare and Co. Mr. W. M. Brutton, architect, 5, Green-street, Leicester-square, W.C.:—

Structural.  
Pritchard & Renwick £2,017 | Courtney & Fairbairn £1,966 H. L. Holloway ... 2,005 | Sheffield Bros. ... 1,731 Whitehead and Co. ... 1,996 | Edwards & Medway\* 1,690Fittings.  
Brown and Co. ... £865 | Edwards and Medway\* 2728 \*Accepted.

LONDON, S.E.—Enlargement and improvements at Albion-street School, Rotherhithe, for the London School Board. Mr. T. J. Bailey, architect:—Munday and Sons ... £8,379 | C. Cox ... £7,663 Wallis and Sons ... 8,328 | Longley and Co. ... 7,653 T. L. Green ... 8,014 | Edwards and Medway 7,457 Martin, Wells, and Co. 7,931 | E. Triggs ... 7,400 Johnson and Co., Ltd. 7,778 | Stimpson and Co.\* 7,130 W. Downs ... 7,889 \*Accepted.

LONDON.—For cookery and laundry centres and a special school at Leo-street New School, Old Kent-road, for the London School Board. Mr. T. J. Bailey, architect:—Garret and Son ... £5,544 | White and Co. ... £5,270 J. Marsland ... 5,542 | Smith and Sons ... 5,231 Bullard and Co. ... 5,392 | Stimpson and Co. ... 5,216 W. Downs ... 5,392 | Edwards and Medway 5,215 F. and H. F. Higgs ... 5,315 | J. and C. Bowyer ... 5,133 Wall and Co. ... 5,231 | B. E. Nightingale\* ... 4,985 \*Accepted.

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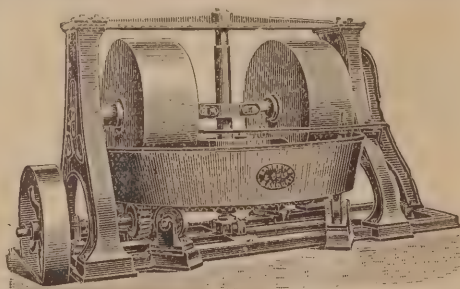
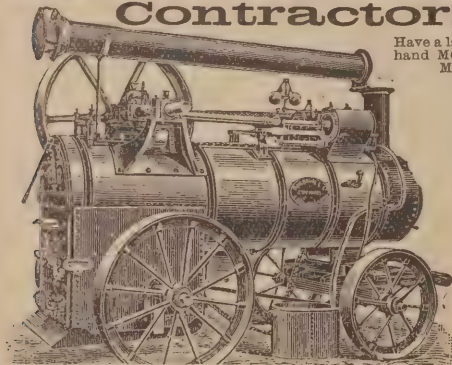
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# Jarrah Timber and Wood Paving Corporation, Ltd.

(Incorporated under the Companies Acts, 1862 to 1893.)

## SHARE CAPITAL - £250,000

(In 100,000 Seven per Cent. Cumulative Preference Shares and 150,000 Ordinary Shares of £1 each), of which £235,500 has been issued.

### Issue, at par, of £100,000 First Mortgage Debenture Stock, Bearing £5 per cent. Interest.

Redeemable at the option of the Corporation on or after the 1st of January, 1920, at a premium of £5 per cent., or before that date at a premium of £10 per cent., six months' notice being given in either case.

PAYABLE—£5 per cent. on Application;	
£20	" "
£25	" "
£25	" "
£25	" "
	Allotment;
	1st September, 1899;
	1st October, 1899, and
	1st November, 1899.

THE STOCK WILL BE ISSUED AND TRANSFERABLE IN MULTIPLES OF £10.

The Debenture Stock and the Interest thereon will be secured by a specific First Mortgage to the Trustees for the Debenture Stockholders of the whole of the Corporation's freehold lands, buildings, sawmills, railways and tramways in Western Australia, and by a floating charge on the stocks of timber at the mills and in transit, locomotives, rolling stock, and all other the assets and general undertaking of the Corporation.

Interest will accrue on the amounts of the Stock as paid up, and will be payable half-yearly on the 1st January and the 1st July; the first proportionate payment to be made on 1st January, 1900.

#### Trustees for Debenture Stockholders.

SIR WILLIAM INGRAM, BART., 198, Strand, W.C.  
HERBERT ALLEN, 36, Buckingham Palace Mansions, S.W.

#### Directors.

SIR EDWARD SULLIVAN, BART., 2, Harewood Place, W., Chairman.  
R. WHIELDON BARNETT, 10, Bedford Court Mansions, W.C.  
H. BATEMAN, 83, Belsize Park Gardens, N.W.  
M. H. TEMPLE, 12, Grove Mansions, Clapham Common, S.W.  
F. H. PALFREMAN (Messrs. Palfreman, Foster, and Co.), New Broad Street House, E.C., Managing Director.

#### General Manager in Western Australia.

J. C. PORT.

#### Bankers.

LLOYDS BANK LIMITED, 222, Strand, London, W.C.; and other Branches,  
THE WESTERN AUSTRALIAN BANK, Perth and Bunbury, W.A.

#### Solicitor.

H. PERCY BECHER, 26, Bedford Row, W.C.

#### Auditors.

JAMES, E. WARD & CO., Chartered Accountants, Broad Street House, E.C., and Birmingham.

#### Secretary and Offices.

WARWICK W. CLARK, Broad Street House, E.C.

## DEBENTURE PROSPECTUS.

This Corporation was formed in March, 1898, for the purpose of engaging in the West Australian timber trade, and since that date the Directors have been actively engaged in developing the property and business of the Corporation, devoting their attention specially to the property originally acquired by the Corporation in the Collie district, where two additional mills, furnished with the most modern machinery, have recently been erected. This policy has been pursued by the Directors in view of the superiority of the Jarrah timber in that district, of its proximity to the port of shipment, and of the facilities afforded by the Government railway. Hitherto, however, economical working has been to some extent interfered with owing to the fact that the Eastern and Western sections of the property are divided by a tract of freehold Jarrah forest, 29,986 acres in extent, known as the Downer Estate.

It is claimed that the Downer Estate is absolutely unique among Jarrah forests by reason of the magnificence of its timber, its density, its accessibility, and the fact that it is freehold. It is, and has been for many years past, the settled policy of the West Australian Government not to part with the freehold of its forest lands, and the freehold estates created under an earlier régime have become increasingly valuable. Sir WILLIAM INGRAM, Bart., one of the largest Shareholders, appreciating the enormous value of this property to the Corporation, recently acquired it, and, under Contract dated July 10th, 1899, has agreed to sell 25,000 acres thereof to the Corporation, and to accept payment of the purchase price of £60,000 wholly in Debenture Stock of this issue at par in certain eventualities detailed below. He has further agreed to accept a seat on the Board of Directors on completion of the said Contract. It will be seen on reference to the sketch map which accompanies this Prospectus that the Collie Coalfields (Government) Railway runs through the centre of the Estate, and that the acquisition of 25,000 acres of the property will consolidate the Eastern and Western sections of the Collie Estate into a homogeneous whole, the Corporation thus owning practically in one block no less than 30,100 acres (over 47 square miles) of freehold timber lands, apart from all its other valuable assets.

Mr. NEWTON J. MOORE, of Bunbury, W.A., an eminent authority on forest lands and their values, describes the Jarrah Timber in the Collie District as "the best Jarrah in the Colony," and reports as follows in reference to the Downer Estate:—

BUNBURY, WESTERN AUSTRALIA, 5th May, 1899.

The Directors,

JARRAH TIMBER AND WOOD PAVING CORPORATION, LIMITED,  
BROAD STREET HOUSE,  
LONDON, E.C.

GENTLEMEN,

I have the honour, acting on instructions from Mr. J. C. PORT, your General Manager in Western Australia, to report on the property known locally as "Downers," consisting of three distinct blocks situate in the Collie District, and which I shall call herein:—(1) "A," being portion of Wellington Location No. 1, consisting of 3,842 acres; (2) "B," being portion of Wellington Location No. 51, 12,489 acres; (3) "C," Wellington Location No. 56, containing 13,655 acres. (The property in the aggregate totalling 29,986 acres, but from this must be deducted about 400 acres resumed by the Government for Railway and Road purposes).

2. For the purposes of this report, I forward herewith a map of the District on which I have coloured:—(1) Red, the properties above referred to; (2) Blue, the Freehold and Conditional Purchase Blocks held by your Company, and (3) Yellow, the Timber Leases in your name.

3. I must first direct your attention to the immense advantage the acquisition of this property will be to your Company by placing your interests in concrete form in one block, and thus doing away with the very vexed question of "overlapping boundaries." You would possess a monopoly of the timber lands between the Collie and Brunswick Rivers connecting with Millars Karri and Jarrah Forests, Limited, property on the North, and the Collie Coalfields Mineral area on the east, whilst you would obtain ten miles double railway frontage through a virgin forest.

4. I consider "Block A" as a timber property the finest selection in the Colony. It carries 50 loads per acre of sound, well-grown, matured Jarrah Timber, aggregating 190,000 loads in the round. It offers you the great advantage of being easy to work from No. 1 Mill. "Block B" carries an average of 25 loads per acre, aggregating 300,000 loads of equally as good timber as "A." Its loss in carrying capabilities as against "A," being in a measure marred by river and creeks. However, it has an advantage over "A" in railway frontage (5 miles), along which the timber growth is heavy. Its northern boundary, as previously stated, adjoins Millars Karri and Jarrah Forests, Limited. Your Worsley [or No. 2] Mill controls this block. "Block C" will yield an average of 20 loads, or 270,000 loads of good Jarrah timber, as well as a large quantity of Black-Butt, and it includes some really

fine Agricultural Land in close proximity to a railway connecting with the Markets. The Jarrah in this block has the best growth along the railway line, and thus is very easy of access. The Three Blocks will yield approximately three-quarters of a million loads of good sound Jarrah in the round.

5. The land comprised in the three blocks was acquired in the early days of the Colony, when the whole of the country was open for selection. It has since been regarded as the pick of the timber country in the South-west, and in consequence of having been strictly preserved, it is now in its virgin state. In fact, it includes not only the largest area of freehold timber country in the district, but has the finest growth of Jarrah we can show. Apart from the timber there is a considerable area of really first-class Agricultural Land on the property, especially in the neighbourhood of the Hamilton River, and this being as shown, near to a railway, and also adjacent to the Collie Coalfields, would if now thrown open bring a good price.

6. Concisely, by acquiring "Downer's" property, your Company

- (1) Would secure a monopoly of the timber on the Collie Ranges;
- (2) Would secure ten miles frontage to the Collie Railway;
- (3) Would add years to the life of your present Mills;
- (4) Would be in a position to conserve the young growth so as to secure a continuous and inexhaustible supply of timber and
- (5) Would place you in the unique position of being permanently fixed within a reasonable distance of the shipping port of Bunbury on the one hand, and the Collie Coalfields on the other.

I have the honour to be, gentlemen, your obedient Servant,  
NEWTON J. MOORE, L.S., &c., &c.

The proceeds of the present issue of Debenture Stock will be applied as follows:—The first £20,000 towards further working Capital, the next £20,000 towards the purchase price of the property, and the balance, as to one-third in providing further working Capital, and as to two-thirds in further part payment of the purchase price of the property, and in so far as the proceeds of this issue may be insufficient to provide the purchase price in cash, Sir William Ingram has agreed to accept payment in the said Debenture Stock at par.

The present issue of Debenture Stock will be secured by a specific First Mortgage to the Trustees for the Debenture Stockholders of the freehold property now being acquired, and of the whole of the Corporation's other freehold lands and timber yards, buildings, saw-mills, railways and tramways, and also by a floating charge on all the other assets of the Corporation, including forest lands held under special licence from the Government of Western Australia, leasehold timber yards in the City of Perth, W.A., stocks of timber at the mills and in transit, locomotives, rolling stock, loose plant, book debts, and goodwill.

By the present issue the working capital of the Corporation is increased to £73,000, and its profit earning capacity largely augmented. Apart, however, from this consideration, it will readily be seen that the security for the Debenture Stock now offered for subscription is of the most ample character. As the freeholder of a vast tract of densely timbered country, the Corporation will be in a position to adopt the most approved methods of forest conservation, and to secure a continuous and inexhaustible supply of Jarrah of the finest quality. The necessity of establishing a sinking fund being thus obviated, the service of the Debenture debt will only involve an addition of £5,000 to the annual charges of the Corporation.

The Corporation continues to secure a full and satisfactory proportion of the business now offering. All timber, arrived and to arrive, has been sold: orders are now on hand for upwards of two millions of paving-blocks; and negotiations with numerous Municipal authorities and public bodies are in progress for further large contracts.

Application will be made in due course for a Stock Exchange settlement and quotation.

Copies of the Memorandum and Articles of Association of the Corporation, and of the Debenture Stock Certificate, and draft of the Trust Deed securing the Debenture Stock, can be seen at the office of the Solicitor to the Corporation.

In the event of no allotment being made, the deposit will be returned in full, and where the amount of Stock allotted is less than that applied for the available balance will be appropriated towards the payment due on allotment or subsequent instalments, and any excess will be returned to the applicant. Any amount repayable will be sent to the applicant by cheque through the post at the applicant's risk. Failure to pay any instalment when due will render the allotment liable to cancellation and previous payments liable to forfeiture.

Prospectuses with forms of application can be obtained at the offices of the Corporation, or at those of its Bankers, Brokers, or Solicitor.

July 29th 1899.



**NEWCASTLE-ON-TYNE.**—For the erection of new warehouses in Stowell-street, for Messrs. Davison and Pickering. Messrs. Badenoch and Bruce, architects, 55, Pilgrim-street, Newcastle:—

H. Atkinson	£5,224	1	3	G. H. Mauchlen	£4,834	10	0
Thos. Hunter	5,076	10	0	John Jackson	4,786	16	9
W. Baston	4,982	19	0	Robt. Veitch	4,748	13	11
F. T. George	4,885	17	0	Alex. Bruce*	4,743	19	0
N. W. Maughan	4,882	12	0				

\*Accepted.

**NORWICH.**—For the erection of new warehouse and show-rooms in St. Andrew's-street, for Messrs. Charles Payne and Co. Mr. Arthur J. Lacey, architect and Diocesan surveyor, Norwich:—

G. S. Tinkler	£1,442	0	G. E. Hawes	£1,938	0
W. Wilkin	1,420	0	Tyrrell Bros.*	1,278	10

[All of Norwich.] \*Accepted.

**WINCHESTER.**—High School for Girls, north walls additions, for the Council of the School. Thomas Stopher, F.S.I., architect:—

Kimberley	£3,130	Carter and Son, Win-	
Rashley	2,983	chester (accepted)	£2,962

**WOLVERHAMPTON.**—For the erection of pupil teachers' centre, for the School Board. Mr. T. H. Fleeming, architect, Wolverhampton:—

Gough	£8,355	J. Herbert	£6,783
Tildesley	7,600	H. Cave	6,709
L. Jones	7,338	Willcock and Co., Wol-	
J. and S. Ham	7,185	verhampton*	6,608
T. Skett	6,950		

\*Accepted.

## COMPETITION.

### NORTHFLEET SCHOOL BOARD. TO ARCHITECTS.

The Board invite PLANS for the ERECTION of SCHOOLS to accommodate 750 children; 500 mixed, 250 infants.

The architect whose plans are selected will be required to prepare detailed specification, and the plans and specification are to be subject to the approval of the Education Department.

A fee of £15 15s. will be paid to the candidate whose plans are selected which shall be the absolute property of the Board.

Plans to be sent in not later than MONDAY, SEPTEMBER 4th.

The name of the architect is not to be placed on the design, but simply a non-de-plume, a copy of which should be placed in an envelope securely sealed and sent direct to me.

Further particulars of site and class of building required may be obtained on personal application to me.

FREDERICK MITCHELL,  
No. 49, Windmill-street, Clerk to the Board.  
Gravesend,  
July 26th, 1899.

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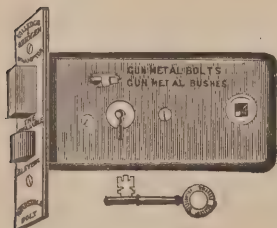
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AUGUST 2ND, 1899.

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## THE PROBLEM SOLVED!

**ORDINARY WOOD RENDERED FIRE-RESISTING THROUGHOUT  
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who have recently introduced into Europe the process now being so largely used in America, have erected large works in this country, and are now taking Orders for the supply of their

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FIG. 1.—SECTION OF A WALL SLAB.

## A NEW FIRE-RESISTING MATERIAL.

MR. WILLIAM MILLAR (author of "Plastering Plain and Decorative") has recently invented a new kind of plaster slab called "Petrura," which is claimed to be practically fire-proof, sound-proof, and damp-proof, besides being cheap and durable, simple of manufacture and easily fixed. A short description of these slabs may be of interest. The Petrura plaster slab is prepared from a basis of gypsum with which hydraulic lime and certain chemicals are scientifically incorporated. The plaster is gauged with a chemical liquid which hardens it, and renders it more incombustible. In the process of manufacture the slabs are cast with grooved edges, rebated joints, and counter-sunk perforations in one operation. Petrura slabs being made with a finished face, no setting coat is required, and except for stopping the joints, no plastering is needed. The slabs contain no canvas or wood (both inflammable materials used in fibrous plaster slabs), and being of a thicker substance, they are obviously superior in many points to fibrous plaster work in general. The slabs are easily fixed with screws, and counter-sunk perforations are made to receive the screws. Ceiling slabs have counter-sunk perforations on the rebated-sunk joints, so that when the perforations and joints are stopped the screw heads are doubly protected from fire and damp. The slabs are constructed in various forms. There are wall slabs with keyed backs, a section of which is shown in Fig. 1, ceiling slabs, casing and lining slabs, and slabs for decorative purposes.

If the slabs are fixed on brick, stone, or concrete walls the bottom row is first fixed with screws, and then liquid Petrura grout is run into the keyed back, thus forming the whole into a solid and compact body. Fig. 2 shows a portion of a wall slab so fixed, the dotted line indicating the keyed back. The figure also shows a section of skirting slab. These skirting slabs may be used in place of wood skirtings. They are made in various lengths

and are plain, or may be moulded to any design. In the ceiling slabs there is a rebated or sunk joint on all face edges, and on this sunk surface counter-sunk perforations for fixing screws are formed, the screw heads being protected from the effects of fire by stopping the sunk joints.

Withstanding both the action of fire and water, these slabs, as was shown at a recent fire test, are well adapted for casing iron or wood beams, girders, and columns as a protection; and a combination of the Petrura slabs and other materials form what is known as the A Z fireproof floors, sections of which are shown in Figures 3 and 4. This floor with iron joists is formed by first fixing the Petrura ceiling slabs on the flanges of the joist, and fixing next the Petrura centreing slabs; the rough concrete is laid, the sliding pieces are inserted, and the joists stopped, thus finishing the work. If wood joists are used, the narrow Petrura lining slabs are fixed on the lower sides of the joists, and then the centreing slabs are laid in position, after which the lining slabs are fixed on the upper sides of the joists. The rough concrete is next laid, and Petrura ceiling slabs are then fixed.

From their composition these floors are hollow and light, and it is claimed that they are fireproof, sound-proof, and vermin-proof. By them a perfect system of ventilation is provided, and channels for electric bells, tubes or wires can be readily formed. Both the Petrura slabs and the materials for the A Z fireproof floors are manufactured by the London Portland Cement Company, Ltd., of 123, Bishopsgate Street, Within, E.C., and at the present time, when there is a keen demand for materials with the qualities claimed for these products, they are likely to be widely used.

**East Dereham Carpenters and Joiners** have received an advance of a penny per hour. A meeting of the men was held recently, at which a resolution was unanimously passed to ask for the advance. A round robin which was sent to the building trades was favourably considered by them, and in each case the advance has been granted. The increase brings the wages up to 6d. per hour.

## SEWER VENTILATION.\*

By J. MORGAN.

ANY new theory advanced or practical suggestion made, with the object of improving the system or systems in vogue for the ventilation of sewers, will, the author feels sure, receive from every municipal engineer and surveyor that consideration which the importance of the question demands.

It will not be necessary to enumerate here the various gases generated in sewers by the

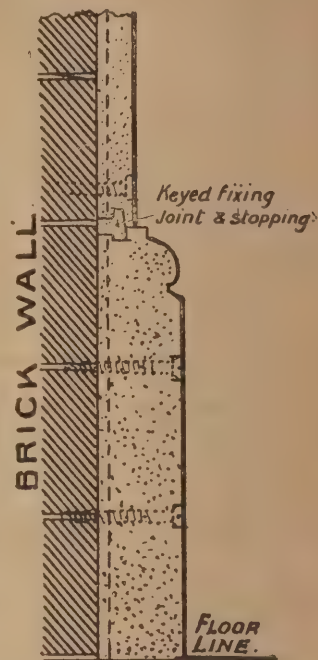


FIG. 2.—SECTION OF A SKIRTING SLAB.

putrefaction of sewage matter. For the purpose of this paper it will be sufficient to classify them under two heads—viz. (1) heavy gas, and (2) light gas.

The heavy gas, being weightier than the atmosphere, rests on the surfaces of the

\* A paper read at the annual meeting of the Incorporated Association of Municipal and County Engineers, held at Cardiff, June 29th and 30th, and July 1st, 1899.

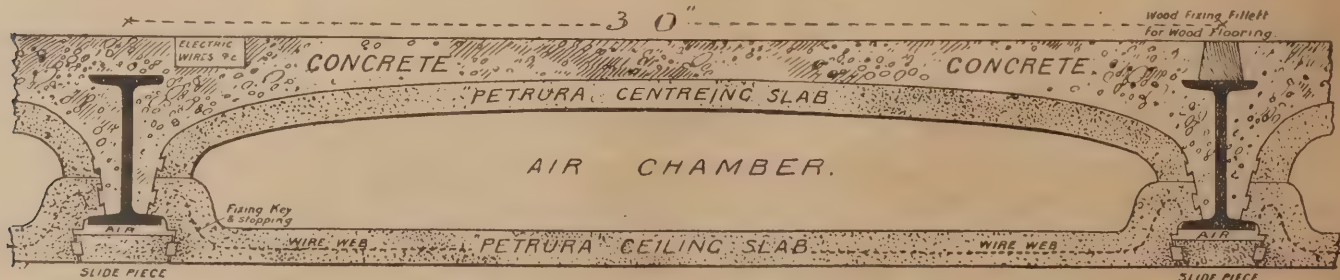


FIG. 3.—SECTION OF IRON JOIST.

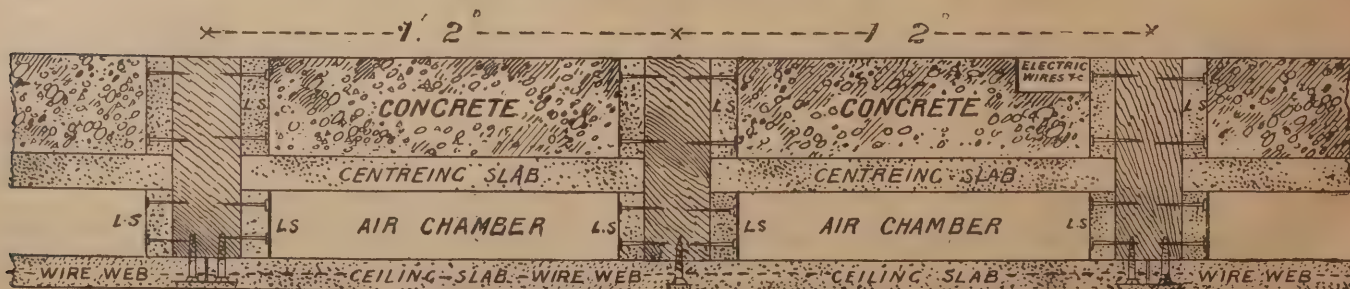


FIG. 4.—SECTION OF WOOD JOIST.



sewage, and, owing to the friction caused thereby, a large percentage is rolled along with the flow towards the outfall, while the remainder is either diffused by the air or dissolved by the liquid.

The other gas, which is lighter than air, presses against the soffit of the sewer, and, when the sewage increases in volume, this gas is also rolled with the flow in the manner already described. As, however, the flushing is intermittent, the light gas will often ascend along the crown of the sewer to the nearest ventilator, where it will create a nuisance—especially in the case of a service ventilator—if not previously diluted with sufficient air. Where an ordinary iron pipe forms the outlet, the current is greatly retarded, if not quite overcome, during hot weather by the friction resulting from the expansion of the sewer air within the heated vent-pipe. Consequently, surveyors often find that the longer the vent-tube is the less effective it proves under the condition named.

Under the old system air rarely enters a sewer to create a draught, except immediately after it has been flushed, when it will rush in to fill the partial vacuum caused by the displacement of the gas, and when strong currents of wind blow over the ventilator.

The shaft outlet system, with the surface ventilators closed—excepting a few which are used as air inlets—is no doubt an improvement upon the old method in its present form, but it is defective in many respects, of which the following may be mentioned: (1) The uncertainty, and therefore the irregularity, in the action of the air inlets, inasmuch as they also act as outlets under certain conditions, especially during flushing operations. (2) When a group of two or more outlet pipes are fixed on either side of an inlet, each with a sectional area in excess of the said inlet, as advocated by those who adopt this system, it is evident that all the air that enters the sewer will pass up the nearest vent-pipe, leaving the portion of the sewer extending to the furthest outlet in the group unventilated. (3) The vent-pipe, as already explained, becomes inoperative during hot weather, which is the most critical period the surveyor has to contend with in the discharge of this branch of his duties.

It is therefore necessary, in order to properly ventilate sewers—especially those which have to be frequently entered for cleansing purposes, &c.—that they should be regularly supplied with sufficient air to diffuse and dilute the gases ere they reach the surface or shaft ventilators; and the efficiency of a system of ventilation depends to a great extent upon the relative positions and sectional areas of the several groups of air inlets and outlets.

Having thus briefly reviewed the existing systems, I will now proceed to explain what I make bold to describe as my improved method of ventilating sewers.

The chief feature is the arrangement of a passage through which air may enter the sewer, while it will be impossible for gas to escape into the atmosphere through the same channel.

This automatic air inlet may be briefly described as follows: A grooved flange is arranged at the bottom of the frame which supports the manhole grating. In this flange a hole is formed to receive a pipe which is firmly and tightly fixed therein. This pipe, which may be 3in. or 4in. in diameter, extends into the manhole to a point which will be level with one-third of the diameter or depth of the sewer. The groove in the flange is filled with fine sand, on which the corresponding rim of the upper end of the dirt box rests, thus rendering it air-tight. The air inlet arrangement is fitted at every alternate manhole, leaving the intermediates to act as surface outlets, if not substituted by shaft outlets. It may be well to mention here, that I consider it an indispensable condition, that one outlet only shall be placed on either side of an inlet, and that the distance between them shall not exceed 100 yards, and at as equal distances as circumstances will permit.

I have already mentioned the defects, in my opinion, of a shaft outlet with a uniform

sectional area throughout. This plan of outlet should be modified in the following respects, viz.: The pipe should taper from 6in. at the closed manhole, or at a more convenient junction with the sewer, as the case may be, to 4in. at a combined junction and rust pocket fixed at the base of the upright shaft attached, for instance, to the gable of a house. The vertical portion of the shaft should taper in the inverse ratio, that is to say, from 6in. near the top to 4in. at the surface line. In order, however, to lessen the atmospheric pressure on the column of air in the pipe, the top end should be bevelled so as to reduce it to the same sectional area as that at the base. The temperature of the sewer air is considerably lower than the outer air during the summer months. The quantity passing through the shaft will be regulated by the reduced area at the base of the upright, so that during hot weather it will have room to expand in its upward and quickened progress through the enlarged and heated vertical shaft, thus reducing the friction to a minimum.

On the other hand, during the winter months, this form of outlet shaft will be advantageous, inasmuch as the sewer air, with a higher temperature than the atmosphere, will obtain a passage through it almost free of friction.

The conjoint action of the inlet and the outlet on either side will ensure a regular current of fresh air passing into the sewer, to diffuse and dilute the gas before it passes out at the nearest shaft or grating. For instance, when the sewer runs from one third to two-thirds full, with the sewer air travelling in the same direction as the flow, an induced current of fresh air will pass over the air-tight dirt box and through the inlet pipe into the sewer. When the sewer is more than two-thirds full, the inlet pipe becomes submerged and therefore inoperative; but when this point is reached, the gas will have been completely diffused by the air or absorbed by the liquid, and under this condition of the flow no putrefaction can take place to form additional gas.

During the time that the sewage runs low, natural ventilation will set in between the inlet at the lower and the outlet at the higher level.

As the atmospheric pressure on an inlet and surface outlet connected with a sewer having a flat gradient is practically equal, the ventilation is neutralised. In such cases, I would recommend that the surface ventilator be closed, and a shaft substituted. Surface outlets will, however, in my opinion, suffice for gradients which may be steeper than say 1 in 150.

The advantages claimed for this system of ventilation are: (1) The inlet is automatic in its action. (2) Each section of the sewer is aerated independently. (3) No gas can escape through the inlet, as it will pass up or down the sewer, above the level of the lower end of the inlet pipe. (4) Outlet shafts may be dispensed with, except for flat gradients. (5) The form of outlet shaft is more effective.

#### Leicester Bricklayers' Labourers' Strike.

—The conference convened by the Leicester Society of Architects between representatives of the Master Builders' Federation and the local branch of the Bricklayers' Labourers' Union, in the hope of bringing about an amicable settlement of a long-standing dispute, was continued last Thursday afternoon in the Old Town Hall. Alderman Sawday presided, and was supported by Alderman Wakerly, Mr. Paget, and Mr. H. H. Thompson, of the Architects' Society. At the previous conference the Society of Architects suggested, as a compromise, an advance of a farthing on the sixpence per hour which the men had been receiving up to the time of their ceasing work. The suggestion was accepted by the master builders, but was rejected by the men, whose representatives stood out for their original demand, viz., an advance of one half-penny. The conference, after having sat three hours, broke up without any good object having been achieved beyond the bringing of the parties together.

## THE PLASTERERS' DISPUTE.

A CONFERENCE of the National Association of Master Builders of Great Britain and Ireland and the National Association of Operative Plasterers met at the Salisbury Hotel, Fleet Street, E.C., last Wednesday, for the purpose of considering points arising out of the recent settlement. The masters were represented by Mr. B. J. Greenwood (London), Mr. T. Gregory (London), Mr. G. Nichols (Leicester), Mr. J. Higson (Manchester), Mr. W. Cunliffe (Bolton), and Mr. J. W. Sugden (Bradford). The men's delegates were Mr. M. Deller, general secretary National Association Operative Plasterers; Mr. M. Jones, president; Mr. G. Jackson (Manchester), Mr. Dan Hennessey (London), Mr. A. McLeod (Newcastle), and Mr. G. Duckett (Birmingham). Mr. Hassall, secretary of the National Master Builders' Association, was also present. Mr. E. T. Cook, editor of the "Daily News," was voted to the chair. The grievances of both sides were brought forward, each side alleging in turn that the other was not duly carrying out the terms of the settlement of May 30. Each side in turn tendered explanations, and it is to be hoped that the exchange of views will tend to relieve local friction. From Manchester it was reported that the men declined to return to work until an advance in wages was granted. It was pointed out on the one side that the general settlement was irrespective of the question of wages, and that the men ought to have returned to work forthwith; and, on the other, that the general settlement could not debar local associations of the men from seeking such rise of wages as they considered themselves entitled to. After a long discussion, Mr. Deller, the Secretary of the National Association of Operative Plasterers, undertook to visit Manchester at an early date with a view of using his good offices to obtain a compromise on the point in dispute. This offer was accepted by the representatives of the masters. From Rochdale, Ashton-under-Lyne and Stalybridge it was reported that local rules embodying the general settlement had not yet been put in force, owing to the local associations of masters requiring a differential scale of wages according as the work was done for master builders or master plasterers respectively. After some discussion, the chairman said he gathered that the National Association of Master Builders, as such, had no cognizance of any such differential rates, and were not prepared to approve of them. This statement of the case was accepted, and it was agreed to call a meeting of the Lancashire and Cheshire Federation at once to settle the points at issue, Mr. Deller meanwhile agreeing to suspend any strike in the localities affected.

From London and several other places it was complained by the masters that the men had refused to return to work on certain jobs or with certain employers on account of the employment of non-union men. It was contended that this was a breach of the settlement. The men, on their side, relied on the words of the settlement, which declared the objection of the Operative Plasterers to work with "defaulters and other men who have been shown to the employers to have made themselves specially objectionable to the union men." They maintained that all "black legs" were objectionable, and explained in some specific cases that defaulters were being employed. Several detailed cases where difficulties had arisen were gone into, but these, it was urged, were exceptional cases, and in a great many others no hitch had occurred.

A vote of thanks to the chairman was proposed by Mr. T. Gregory and seconded by Mr. M. Deller. Mr. Cook thanked them for their appreciation of his services. He said that as far as he could see, only three important questions of difference were involved. One was the question of the differential rates of wages that they had been discussing. He hoped that would be settled by the proposed local conference. The second important question of wages would, it was hoped, be settled by Mr. Deller's good offices at Manchester. With regard to the third point,



perhaps on that no very precise agreement had been reached—viz., the question of black-legs. It struck him very much in the course of the afternoon, that when either side proceeded to draw up a hard and fast definition, they were sure to get rather wide apart. But, at the same time, he could not help observing that when they got into details the difference tended to diminish. The subject was one which required treating with tact on both sides.

## Masters and Men.

**Working of the Conciliation Act.**—The second report by the Board of Trade of proceedings under the Conciliation Act of 1896 was published the other day, and covers the two years from July, 1897, to the end of June last. The number of disputes in which action was taken or invited shows some falling off compared with the first report, the total amounting only to thirty-two, of which twenty-two were settled under the Act. Nine of the settled cases arose in the building trade, two in the metal, engineering and shipbuilding trades, six in mining, and five in miscellaneous trades. One case, which was settled, came from St. Helens, and 300 joiners and carpenters were affected, but there was no stoppage of work. Another case, affecting 300 hands in the same trade, came from Wigan, and here again the Board of Trade appointed an arbitrator, with the result that the matter was settled without a cessation of work.

### Glasgow Corporation Employees' Wages.

—A mass meeting of the Glasgow Central Branch of the General Labourers' Union was held recently in the Albion Halls, College Street, "to consider the grievances and complaints of the cleansing and sewage works employees." A resolution was adopted requesting the following concessions for men in the Cleansing Department:—An advance of 6d. per day in wages of all grades; a fifty-one hours' week, stopping time on Saturday being 1 p.m.; double time for Sunday work; and ten days' annual holiday with pay. The Sewage Department employees made the following demands:—That all workers with a wage less than 24s. per week should receive 6d. per day advance; double time for Sunday labour, and time and half for all overtime; ten days' annual holiday and pay. It was agreed to send the resolutions to the committees having charge of the departments.

### The Loss of an Eye—Interesting Point.

—Sheriff Spens, on Monday last week, issued his decision in an interesting action under the Workmen's Compensation Act. The plaintiff was a labourer named John Geary, of 7, Calder Close, Coatbridge, and in February he sued Dixon (Limited), coal and iron masters, of Glasgow, for compensation for the loss of his right eye while in their employment as an assistant furnaceman. The claim raised by him was for the difference between the amount of his average weekly earnings before the accident (30s. 8d.) and the average amount he was able to earn after it (21s. 6d.). His Lordship awarded the amount of his claim in a judgment on 14th February last. The defendants contended that the statute provided that only half of the difference in the earnings should have been awarded, and they took a stated case to the Court of Appeal, which, however, upheld the Sheriff's decision. Last week the defendants were allowed a proof as to the alleged discontinuance of the plaintiff's partial incapacity, in respect of which he had been granted the allowance of 9s. 2d. per week; and, following that proof, his lordship issued a judgment in which he found that the plaintiff was no longer incapacitated from pursuing the occupation which he was following at the time of the accident, and therefore ends and determines the weekly allowance of 9s. 2d. No expenses were awarded. In a note his Lordship quoted the evidence of four witnesses who had lost the sight of an eye while working as assistant furnace keepers, and all of whom

said this in no way affected their efficiency to perform the duties of their calling. In face of such evidence, now that the inflammation in plaintiff's eye had disappeared, and that it was simply a dead eye, it could no longer be held that he was incapacitated from pursuing his former avocation, which, according to the evidence, was offered him. All that the Act provided for was a weekly allowance during partial or total incapacity.

**Danish Labour War.**—Mr. J. Macdonald, the secretary of the London Trades Council, received notice at the beginning of last week that another 20,000 men have been locked out in Denmark in connection with the big dispute now going on in that country. The object of the employers is to destroy the Federation of Trade Unions which has secured so strong a hold on the workmen of the country. Practically all the workpeople in the country are members of the Federation, which has a membership of 80,000. Forty thousand were locked out eight weeks ago, and thus to-day three-fourths of the members of the Federation are idle. The London Trades Council has collected and despatched £400 for the aid of the locked out, and the Amalgamated Society of Engineers has sent £800 to the engineers in Denmark, who have not until now been compelled to ask for assistance from the general funds.

**The Building Trade Dispute.**—A conference between representatives of the various trade unions in the building trades and the National Association of Master Builders was held yesterday at the Salisbury Hotel, Fleet Street, E.C., to discuss points at issue between the parties, and to consider a scheme to establish a board of conciliation for the prevention and settlement of disputes, which had been submitted by the representatives of the men. One of the conditions on which the conference was held was that on the joint committee of the trade unions formally agreeing to take part therein the Yorkshire lockout should be declared at an end pending final settlement. Mr. Gregory, of Battersea, presided. The proceedings were private, and at their conclusion it was stated by Mr. Hassall, the secretary to the National Association, that the conference had considered the points raised by the Yorkshire Federation. Attention had also been given to the draft proposals for the establishment of a conciliation board, and the meeting had adjourned that these might be laid before the masters and the unions for acceptance, the delegates to meet at such time as the joint secretaries might advise. The proposals as to the board were accepted with little alteration. The principal features of the Board were thus set out:—"The objects of the Board shall be to adjust by conciliatory means all questions relating to hours, wages and working rules generally that may arise, and may be referred to by either employers or employees, and by mediation prevent strikes and lock-outs, and assist in the settlement of disputes that may take place. There shall be district committees equally representative of the employers and employees, and a central board similarly representative of the National Association of Master Builders and the other societies, parties to this agreement. In the event of any dispute arising between the members of a society or societies and the employers, and failing a settlement between the disputants locally, the question at issue shall be referred to the district committee, and should this body fail to agree, the matter shall be referred to the Central Board, and, failing a decision on this part, the matter shall be laid before a board of disinterested referees, whose decision shall be binding on both sides. In all cases work shall go on without stoppage pending a settlement." A joint meeting has been arranged between the Yorkshire employers and the Bricklayers' and Carpenters' Trade Unions to deal with the disputed matters in Hull. At the beginning of last week the Amalgamated Society of Carpenters and Joiners withdrew its members from all the Federation shops in Leeds, but subsequently the men returned to their work.

## Builders' Notes.

**The New Drill Hall, Weymouth,** is being warmed and ventilated by means of Shorland's patent Manchester grates, supplied by Messrs. E. H. Shorland and Brother, of Manchester.

**Damages for Slander.**—In the Edinburgh Court of Session, last Wednesday, the trial took place of an action by John Wilson Bruce, accountant, of Glasgow, against J. M. Smith, Limited, proprietors and publishers of the "Glasgow Evening News," in which the plaintiff sued for £2,000 as damages for alleged slander. He complained of a paragraph which the defendants published on October 18th, 1897, regarding a building which he had erected in New City Road, Glasgow. Part of the building collapsed on account, the plaintiff said, of bad foundations, but the damage was put right. The paragraph complained of stated that signs of fresh weakness were already evident in the reconstructed building, and concluded with the expression: "The Master of Works may hear that his services are required when the tenement comes down with a run for the second time." The statement, it was maintained, had the effect of depreciating the plaintiff's property, and was slanderous. The defendants maintained that the paragraph, so far as it consisted of statements of fact, was substantially true, and that it was a legitimate comment upon a matter of public interest. The jury returned a unanimous verdict for the plaintiff, and assessed the damages at £450.

**Electric Light Advertisements.**—The Universal Electric Advertising Syndicate, of 2, St. Peter's Church Walk, Nottingham, was summoned at Marlborough Street Police Court last week by the London County Council for erecting at 3, Oxford Street, W.C., a structure which projected beyond the general building line, contrary to the provisions of the Building Act. Mr. Chilvers, for the L.C.C., said that the structure complained of was an electric light advertisement erected in front of the fourth storey of the building, which was situated at the junction of Oxford Street and Charing Cross Road. The advertisement was 23ft. long and 10ft. 4in. wide, covering the whole front of the fourth storey, and projected over 2ft. beyond the general line of building. It contained about 1,000 electric lights, worked from the inside, which formed into groups and made the letters of the advertisement. The whole structure was of iron. Thomas Barrett, architect and surveyor from the offices of the County Council, gave a detailed description of the structure, and stated that it projected 2ft. 3in. from the general building line. On cross-examination, he admitted there was no danger; it was securely fixed up. Other signs in the neighbourhood projected further than the one complained of. It might have cost £1,000 to erect. Counsel for the defendants said that the general building line was not defined by the County Council until after the sign was put up at a great expense. Mr. Denman adjourned the further hearing of the case for a month.

**Wooden Structures and the London Building Act.**—Last Wednesday at West London Police Court, the Albert Hall Estate Company (Limited), who are engaged in erecting a large pile of flats at the rear of Albert Hall on land belonging to the Commissioners of 1851, were summoned by the London County Council for setting up a wooden structure, which has been used as a means of approach by the tenants, without a licence, and an order to demolish it under the powers of the Amended Building Act was asked for. Mr. Chilvers, for the L.C.C., gave a reference to the different sections, contending that the corridor was a wooden structure which was not exempted. He submitted that the Legislature drew a distinction between buildings and wooden structures. Mr. Avory, who represented the company, said when the corridor



was up an application was made to the County Council for a licence. The attention of the company was called to it by the district surveyor, and an application was then made for a licence, not because one was thought necessary. If it were granted, well and good; if not, they did not want it. Mr. R. Worley, the company's architect, in giving evidence, said he had the sanction of the Royal Commissioners for the building to be erected on their land. The completed part of the building could not be used without the use of the temporary corridor. Mr. Fenwick suggested that the company should approach the County Council for the purpose of trying to meet their objections. The summons was then adjourned for four weeks, Mr. Fenwick expressing an opinion that the roofing of the corridor was undesirable.

**A Brickmaking Case.**—In the First Division of the Court of Session for Scotland, a case in an arbitration under the Employers' Liability Act, in which William Dollan, labourer, 106, Clippens Row, Johnstone, claimed compensation from his employers, the Linwood Brickmaking Company (Limited), 5, Oswald Street, Glasgow, for injury to his left hand, caused by the stamper of a stamping machine, in the respondents' brickworks, coming down upon it, was brought before the Lord President, and Lords Kinnear and McLaren. The case was stated by Sheriff-Substitute Spens, who found in fact that the appellant was engaged to work on the night shift, and obtained employment on the false representation that he was over eighteen years of age, whereas he was only sixteen. His particular work was to run a bogey loaded with bricks from the stamping machine to the kiln, and heard other two lads by arrangement known to the respondents' foreman interchanged duties. On 23rd February, the appellant took the place of another lad, M'Mahon (who was then cleaning the machine), and engaged taking bricks from the plate, and thinking that the stamper was dirty, put his left hand into the machine to clean the stamper, with the result that it came down upon his hand. It was absolutely against the rules of the work to clean the stamper until the machine was stopped, and then only by a special tool provided for the purpose called a scraper. On these facts the Sheriff-Substitute held that the accident did not arise out of and in the course of the employment of the appellant, and that the accident was attributable to the serious and wilful misconduct of the appellant, in respect he would not have been employed on the night-shift had it not been for his fraudulent misrepresentation as to his age; compensation was, accordingly, refused. The questions in law for the opinion of the court were: (1) Whether the accident to the appellant arose out of his employment with the respondents; and (2) whether the accident was attributable to the serious and wilful misconduct of the appellant. The Court now answered the first question in the negative; and found the respondents entitled to expenses. The Sheriff-Substitute's decision on the second question was not supported by the respondent's. The Lord President said the Sheriff-Substitute was right. He did not think that in every case it was a question of law whether the accident arose out of and in the course of the employment of the appellant, but they must, at all events, determine the case on the facts which the Sheriff had found. The first question was whether, assuming there was a recognised interchange between the appellant and M'Mahon of their respective duties, this occurred in the course of what was originally M'Mahon's employment. That was a question of fact which the Sheriff had decided, and when they examined the facts it did not appear as an express finding or as matter of legal or even of natural inference that it was part of M'Mahon's duties to clean that machine at all; and as the original employment of the appellant was something totally different, it fell to him to make out that his change of work had the sanction of his employers. He was for answering the first question in the negative. The finding of the Sheriff on the second question was not maintainable, and was not supported.—Their Lordships concurred.

**Improvements at Newcastle.**—At a meeting of the Town Improvement Committee of the Newcastle Corporation last Wednesday plans were passed for the erection of an ice factory and cold stores in St. Mary's Street, Quayside. The proposition to widen High Bridge was agreed upon. The Committee had under consideration plans for the erection of a portico to the entrance of the County Hotel, which is at present undergoing extensive alterations. The portico is described as being a valuable acquisition to the appearance of the building. The application was ordered to stand over until next meeting, the plans, in the meantime, to be subjected to certain alterations. Plans were presented for no fewer than 130 houses to be erected, principally on the outskirts of the City; in addition, plans were presented for works, shop fronts, and alterations and improvements of premises in almost all parts of the city.

**A Foreman's Wages Case.**—At the Walsall Assizes held last week, Joseph Holden, Queen's Place, Wednesbury, was summoned by Mr. F. W. Cross, engineer and architect, of Walsall, for £2 for neglect of work between the 3rd and the 13th inst., and also for £2 money overpaid in respect of wages and expenses. Plaintiff was carrying out work under the Corporation at Leeds, and sent defendant as foreman to superintend the job. He gave defendant £3 to cover his expenses and on account of wages, but three days later defendant wrote for £4 more. Plaintiff thought that excessive and only sent £3, whereupon defendant wrote that he should not stay on the job and went away, and plaintiff claimed £2 out of the £6 he had sent, and £2 for leaving without notice.—Defendant put in a statement that he had spent £6 10s. on plaintiff's behalf, but on the items being examined that was reduced to £5 10s., and an order was made for defendant to pay £2 10s. and costs.

## Surveying and Sanitary Notes.

**Proposed Improvements at Wallasey.**—Mr. G. W. Wilcocks, a Local Government Board inspector, held an inquiry last Thursday, on behalf of that body, into an application by the Wallasey Urban District Council for sanction to borrow £7,580 for the construction of a new road from Wallasey village to the shore; £4,318 for the improvement of Poulton Road, Seacombe; and £300 for the provision of an underground convenience in Liscard Road.

**Douglas Improvements.**—A scheme for improving the Douglas Promenade is shortly to be submitted to the Douglas Town Council. It is proposed to build a new sea wall, and thus widen the Loch and Harris Promenades over their whole length by 40ft. The estimated cost is £50,000, and it is contended that the increase in tramway royalties will more than cover the interest and sinking fund. The improvement will allow of electric traction on the tramways, and will permit of a more effective drainage system.

**Stockport Corporation Sewage Works.**—The formal opening took place last Wednesday of the sewage outfall works just constructed by the Corporation of Stockport on the Cheadle side of the river at Heaton Mersey. Mr. Alderman Lees opened the building. He said that a little over £152,000 had been expended upon the main intercepting sewer, buildings, machinery, and land at the outfall, the land, amounting to 96 to 98 acres, having cost about £17,000. The main intercepting sewer, buildings, reservoirs and other works have been constructed by Messrs. T. and W. Meadows, contractors, of Heaton Norris; the engines and pumps were supplied by Messrs. J. and H. Gwynne, of Hammersmith; and Mr. Daniel Eadie was the contractor for levelling and draining the outfall land.

## Engineering Notes.

**Electric Lighting at Stockton-on-Tees.**—Stockton-on-Tees has formally inaugurated a scheme for the erection of municipal electric light works at a cost of £28,000.

**Fleet Church, Hants,** has been fitted with the latest improved "Small Tube" hot water heating apparatus, with special economical coil heater with water-way fire-bars, by Messrs. John King, Limited, engineers, of Liverpool.

**Harbour Extension at Stonehaven.**—It is stated that a favourable communication has been received from the Public Works Loan Commissioners in reply to the request from Stonehaven Harbour Trustees for a loan of £11,000 for harbour extension purposes.

**Eighteen Steel Bridges Ordered in America** by Russia for the railways in Eastern Asia were completed and accepted recently by the Russian agent. The bridges were completely built in ten weeks, and fifteen of them have already been shipped to Siberia.

**Electric Lighting at Derby.**—A Local Government Board inquiry was held at the Derby Town Hall recently into the application by the Derby Town Council for sanction to borrow £25,000 for the purpose of electric lighting. After the usual formal evidence the inquiry closed.

**The New Workhouse Infirmary, Liskeard, Cornwall,** is being warmed and ventilated by means of Shorland's patent Manchester stoves, with descending smoke flues, patent exhaust roof ventilators, and inlet tubes, supplied by Messrs. E. H. Shorland and Brother, of Manchester.

**A Bridge Over the River Calder at Ossett.**—The Lancashire and Yorkshire Railway Company are preparing to widen their main line at Ossett and Thornhill. The line crosses the River Calder at Healey by a viaduct, and negotiations have been proceeding for some time between the Thornhill Urban District Council and the Company, the former desiring to secure the erection of a bridge for public traffic between the two townships. Terms have now been arranged for the erection by the company of a road bridge, 12ft. wide, across the river at Healey.

**The Institution of Junior Engineers,** of which the president is Sir W. H. White, Director of Naval Construction and Assistant Controller of the Navy, holds its summer meeting this year at Portsmouth and Southampton, commencing August 12. The Government establishments and engineering works in the neighbourhood are to be visited, whilst at Southampton, in addition to the London and South-Western Railway Company's docks, an inspection will be made of the North German Lloyd steamship, Kaiser Wilhelm der Grosse, and the American liner, St. Louis. The Mayors of both towns are offering entertainment to the institution.

**Dock Extension at Hull.**—The opening of the Alexandra Dock Extension took place last week. The new extension is  $7\frac{1}{2}$  acres in extent, and has been designed specially for the shipment of coal and mining timbers. It will be fitted with four coal hoists of modern pattern. The length of additional quay provided is nearly half a mile, and the depth of water will be the same as in the existing Alexandra Dock. From foundation to coping the dock walls, which are of solid concrete, average 50ft. in height, and are 22ft. wide to base. In carrying out the works nearly 400,000 yards have been excavated, and nearly 66,000 yards of concrete work have been executed. The whole of the work has been done under the superintendence of Mr. R. Pawley, M.I.C.E., the company's engineer, by Messrs. Whitaker and Sons, of Horsforth, Leeds, the contractors for the extension.



## COMPLETE LIST OF CONTRACTS OPEN.

DATE OF DELIVERY.	WORK TO BE EXECUTED.	FOR WHOM.	FROM WHOM FORMS OF TENDER MAY BE OBTAINED.
<b>BUILDINGS—</b>			
Aug. 4	Drumhillary, Ireland—Renovating Church	Public Health Committee	H. C. Parkinson, Architect, College-street, Armagh.
" 4	Egremont, Cumberland—Shop and Warehouse, &c.	Burgh School Board	J. S. Stout, Architect, Gilfoyle, Egremont.
" 4	Treorchy—Workmen's Cottages	Rural District Council	J. Rees, Architect, Hillside, Pentre.
" 5	Ipswich—Additions to Borough Fever Hospital	Gas Commissioners	E. Buckham, Borough Surveyor, Town Hall, Ipswich.
" 5	Burntisland—Secondary School	Aberystroth School Board	R. Little, 4, St. Brycedale-avenue, Kirkcaldy.
" 5	Lisnaskea—Five Labourers' Cottages		J. O'R. Hoey, Clerk, Council Offices, Lisnaskea.
" 7	Perth—Gasworks		W. Campbell, 32, North Methven-street, Perth.
" 7	Abertillery, Mon.—Alterations, &c., to School		R. L. Roberts, Architect, Victoria-chambers, Abercarn.
" 7	Keighley—Residence, &c.	Great Western Railway Co.	W. H. and A. Suggden, Architects, Keighley.
" 8	Bynea, Wales—New Passenger Station	Corporation	Engineer, Great Western Railway Station, Neath.
" 8	Hastings—Boundary Walls	Great Western Railway Co.	P. H. Palmer, Borough Engineer, Town Hall, Hastings.
" 8	Hendford, near Yeovil—Goods Shed, &c.	Great Western Railway Co.	District Engineer, Great Western Railway Station, Taunton.
" 8	Pengyraig and Tonyrefail, Wales—Stations	Great Western Railway Co.	Resident Engineer, Theatre Royal-chambers, Cardiff.
" 8	Witchington, near Hereford—Station Buildings	J. H. Waddington	Engineer, Great Western Railway Station, Gloucester.
" 8	Halifax—Building Extension	Tramways Committee	Jackson and Fox, 7, Rawson-street, Halifax.
" 8	Sheffield—Car Sheds	Union Guardians	C. F. Wike, City Surveyor, Town Hall, Sheffield.
" 9	Hendon—Repairs, &c., to Workhouse Buildings, &c.	School Board	F. J. Seabrook, Clerk, Union Offices, Edgware.
" 9	Hexthorpe—Infant School	Board of Overseers	Architect, 11, Priory-place, Doncaster.
" 9	Leeds—Alterations to Offices	Wesleyan Chapel Trustees	Redford and Kitson, Architects, Greek-st.-chambers, Leeds.
" 9	Pilsley—Sunday Schools	Amalgamated Society of Engineers	W. J. Cutt, Padley Wood Farm, Morton.
" 9	London—General Offices	Union Guardians	C. Thompson, 203, Graham-road, Edgware.
" 9	Hendon—Repairs to Workhouse Buildings	Barra School Board	F. J. Seabrook, Clerk, Union Offices, Edgware.
" 10	Lochboisdale, Scotland—Additions, &c., to School	Committee	— Hill, Clerk to Board, Lochboisdale.
" 10	Wrexham—Ward at Infirmary	Harbour Trustees	Lockwood and Sons, Architects, Chester.
" 10	Swansea—Engine and Boiler Houses	Bermondsey Vestry	A. O. Schenk, Engineer, Harbour Offices, Swansea.
" 10	London, S.E.—Alterations to Town Hall	London County Council	Surveyor, Town Hall, Bermondsey, S.E.
" 10	Mayford—Alterations to Swimming Bath		Architect's Department, 13, Spring Gardens, S.W.
" 11	Rhyl—Intermediate School	County Council	F. H. Shaylor, Architect, Welshpool.
" 12	London, S.W.—Supply of Portland Cement	Strand Union	Manager, Works Department, Belvedere-rd., Lambeth, S.E.
" 15	London, W.C.—Repairs, &c., to Workhouse	Birkenhead Corporation	W. S. Cross and Kekwich, 18, Outer Temple, W.C.
" 15	Tramere—Additions to Science and Art School	J. Morgan	C. Brownrigg, Borough Engineer, Town Hall, Birkenhead.
" 16	Dinas Powis, Wales—Pair of Villas		W. H. D. Caple, 1, St. John's-square, Cardiff.
" 18	Filey—Coastguard Buildings		Coastguard Station, Filey.
" 18	Kirkwall, Orkney, N.B.—Coastguard Buildings	Town Council	Watch Room, Coastguard Station, Kirkwall, N.B.
" 20	Portsmouth—Decorating Room, &c., at Town Hall	Corporation	Town Clerk, Town Hall, Portsmouth.
" 21	Southsea—Technical Schools and Fire Station	Corporation	W. H. Snow, Town Clerk, Southsea-on-Sea.
" 31	Sunderland—Workmen's Dwellings	Corporation	Borough Surveyor, Town Hall, Sunderland.
Sept. 1	Malmö, Sweden—Electric Works	Town Council	Clerk, Gasworks, Malmö.
" 12	Croydon—Superstructure of Asylum	R. Hayward	Borough Engineer, Town Hall, Croydon.
No date.	Tonbridge—Five Villas	Wesleyan Chapel Trustees	Neve and Sons, 1, Rank-street, Tonbridge.
"	Thornton Heath—Chapel		F. W. Ledger, 8, Philpot-lane, E.C.
<b>ENGINEERING—</b>			
Aug. 4	London S.W.—Conduit and Wiring Work	Bridgewater Trustees	O'Gorman and Cozens-Hardy, 66, Victoria Street, S.W.
" 4	Basingstoke—Laying Water Main	Union Guardians	R. S. Wallis & C. Smith and Son, Architects, Basingstoke.
" 5	Southampton—Dredging Work	Harbour Board	A. H. Skelton, Clerk, Town Quay, Southampton.
" 7	Bakewell—Gas Mains	Urban District Council	T. W. Tiplady, Manager, Gasworks, Bakewell.
" 7	Blackburn—Abutments to Bridge	Highways Committee	W. Stubbs, Borough Engineer, Town Hall, Blackburn.
" 7	Blackburn—Steel Bridge	Highways Committee	R. E. Fox, Town Clerk, Town Hall, Blackburn.
" 8	Salford—Eight Dynamos	Rural District Council	L. C. Evans, Town Clerk, Town Hall, Salford.
" 8	Bristol—Railway Lines	Great Western Railway Company	Engineer, Paddington Station, W.
" 9	Christania, Norway—Copper Wire Insulators, &c.	State Railways Administration	Commercial Department, Foreign Office, S.W.
" 9	Halifax—Electric Lighting School	Technical Instruction Committee	Borough Electrical Engineer, Foundry-street, Halifax.
" 9	Kingswood Hill, near Bristol—Pumping Plant	West Gloucestershire Water Co.	E. D. Marten, The Birches, Codsall, Wolverhampton.
" 9	St. Albans—Laundry Machinery	Workhouse Guardians	H. E. Hansell, Architect, Granville-road, St. Albans.
" 10	Stokesley—Stone Bridge	Rural District Council	W. H. Dixon, Surveyor, Kirby-in-Cleveland.
" 11	Hensbridge, Somerset—Reservoir	Wincanton Rural District Council	C. Coombes, Engineer, Tisbury.
" 11	Tarvin, Cheshire—Waterworks	District Council	H. B. Killon, 22, Cooper-street, Manchester.
" 12	Biddulph—Water Supply	Urban District Council	C. R. Hall, 1, West-street, Congleton.
" 12	Goole—Heating, &c., Public Baths	Urban District Council	F. Chambers, Surveyor, Goole.
" 12	Ibiza, Spain—Harbour Works		Government of the Balearic Islands.
" 14	London, S.W.—Gasholder	Wandsworth and Putney Gaslight and Coke Company	H. H. Jones, Engineer, Gasworks, North-street, Wandsworth, S.W.
" 16	Great Crosby, Lancs.—Tramway, &c.	Urban District Council	S. B. Cottrell, Overhead Railway, James-street, Liverpool.
" 24	Plymouth—Outfall Sewer, &c.	Corporation	J. Mansergh, 5, Victoria-street, Westminster, S.W.
" 28	Willesborough, Kent—Water Supply Works	East Ashford Rural District Council	Bailey-Denton, Son and Lawford, 9, Bridge-st., Westminster.
" 31	London, S.W.—Crane, &c.	St. Mary's Vestry, Battersea	Vestry Clerk, Municipal-buildings, Lavender-hill, S.W.
<b>IRON AND STEEL—</b>			
Aug. 4	Hastings—Wrought-iron Fencing	Corporation	P. H. Palmer, Borough Engineer, Town Hall, Hastings.
" 7	Dublin—Railway Stores	Cavan and Leitrim Railway Co., Limited	P. MacNulty, 37, College-green, Dublin.
" 12	Rio de Janeiro—Steel Rails, Bolts, &c.		Manager, Central Railway, Rio de Janeiro.
<b>ROADS—</b>			
Aug. 4	Wanstead—Granite, &c.	Urban District Council	W. Blewitt, Clerk, Council Offices, Wanstead, N.E.
" 5	Sunderland—Materials	Rural District Council	T. Young, Surveyor, Council's Offices, Sunderland.
" 7	Droxford—Hire of Steam-Roller	Rural District Council	F. Clark, Clerk to Council, Bishop's Waltham.
" 7	Ogmore—Limestone, &c.	Urban District Council	Council's Surveyor, Office, Blackmill.
" 7	Jarrow—Paving, Channelling, &c.	Urban Sanitary Authority	— Petree, Borough Surveyor, Jarrow.
" 8	Christchurch, Hants—Quartzite	Corporation	E. I. Legg, Borough Surveyor, Town Hall, Christchurch.
" 15	Felixstowe—Road Works and Granite	Urban District Council	G. S. Horton, Surveyor, Town Hall, Felixstowe.
" 15	Neath, Wales—Tar Paving	Town Council	Borough Engineer, Gwyn Hall, Neath.
" 15	Romford—Granite	Urban District Council	Surveyor to Council, Romford.
" 16	Burham, Kent—Approach	Parish Council	A. Neale, Burham.
<b>SANITARY—</b>			
Aug. 4	Wanstead—Stoneware Pipe Sewers, &c.	Urban District Council	Surveyor, Council Offices, Wanstead, E.
" 15	Ensom—Sewerage Works	Rural District Council	Beesley, Son, and Nichols, 11, Victoria-street, Westminster.
" 15	Witney—Drainage Works	Urban District Council	N. Laidy, 16, Great George-street, Westminster.
" 21	Leigh-on-Sea—Town Sewerage Works	Urban District Council	Bailey-Denton, Son & Lawford, Palace-chbrs., Westminster.
" 24	Plymouth—Sewerage Works	Corporation	J. Mansergh, 5, Victoria-street, Westminster.

## COMPETITIONS OPEN.

DATE DESIGNS TO BE SENT IN.	DESIGNS REQUIRED.	AMOUNT OF PREMIUM.	BY WHOM ADVERTISED.
Aug. 8	Sydenham, S.E.—Band Stand	£31 10s., £15 15s., £7 7s.	W. Gardiner, Secretary, Crystal Palace Co., Sydenham, S.
" 17	Batford—Sewerage and Sewerage Disposal Schemes		C. J. Spencer, Clerk to R.D.C., Public Offices, Batford, N.
" 17	Kirkcaldy—Joint Infectious Diseases Hospital		A. Beveridge, District Clerk, Kirkcaldy.
Sept. 1	Otley—Isolation Hospital	£30, £15	C. V. Newstead, Clerk, Wharfedale Union Joint Hospital Committee, Union Offices, Boroughgate, Otley.
" 4	Northfleet—Schools	£15 15s.	Clerk to School Board, 49, Windmill-street, Gravesend.
" 15	Workington—Town Hall	£40, £20, £1	W. L. Eaglesfield, Surveyor, Town Hall, Workington.
" 16	Norwich—Bank	£52 10s., £21, £10 10s.	Secretary, Norfolk and Norwich Savings Bank, C.E.Y.M. Rooms, Norwich.
" 30	Tunbridge Wells—Designs in Tunbridge Ware	£3 3s., £2 2s., £1 1s.	Technical Education Committee.
No date.	Parsonstown—Water Supply		H. Barlow, Clerk, U.D.C., Town Hall, Parsonstown.



Property and Land Sales.

**FREEHOLD BUILDING ESTATE**, fronting on main road and close to golf links and Highgate Woods, seven minutes' walk from Muswell Hill and East Finchley stations. To be LET on lease or SOLD in plots. Liberal advances to responsible builders if required. For plans and particulars, apply to Mr. GEORGE H. PAINE, Architect and Surveyor, 6, Stoke Newington-road, N. 12

SALE DAYS for the Year 1899.  
Messrs.

**FAREBROTHER, ELLIS, EGERTON, BREACH, GALSWORTHY, and CO.** beg to announce that the undermentioned dates have been fixed for their AUCTIONS of FREEHOLD, Copyhold, and Leasehold ESTATES, Reversions, Shares, Life Interests, &c., at the AUCTION MART, Tokenhouse-yard, E.C.

Other appointments for intermediate Sales will also be arranged.

Thursday, Aug. 3	Thursday, Nov. 16
Thursday, Aug. 10	Thursday, Nov. 23
Thursday, Sept. 21	Thursday, Dec. 7
Thursday, Oct. 12	Thursday, Dec. 14
Thursday, Oct. 26	

Messrs. FAREBROTHER, ELLIS, and CO. publish in the advertisement columns of "The Times," "Standard," and "Morning Post," every Saturday a list of their forthcoming Sales by Auction. They also issue on the first of every month a schedule of properties to be let or sold, comprising landed and residential estates, farms, freehold and leasehold houses, City offices and warehouses, ground-rents, and investments generally, which will be forwarded free of charge on application.—No. 29, Fleet-street, Temple Bar, and 18, Old Broad-street, E.C.

**CROWN and PARK ESTATES, RAYLEIGH**.—Two Cottages and choice Sites facing the Railway Station. The finest land yet offered in this locality. 240 plots and Hotel Site for SALE by AUCTION, THURSDAY next, AUGUST 3rd, in marquee opposite station, by

**THE LAND COMPANY**, at 1.30 p.m. Houses needed immediately. Bricks on estate. Every opportunity for investors. Easy payments taken. Immediate possession. No law costs. Special train from Liverpool-street 10.50. Apply for particulars, plans, and tickets, The Land Company, 63, Cheap-side, E.C.

TO BUILDERS, CONTRACTORS, and OTHERS.—Messrs.

**FULLER, HORSEY, SONS, and CASSELL** will include in their SALE at the VICTORIA and ALBERT MUSEUM, South Kensington, on THURSDAY, AUGUST 3rd, at TWELVE o'clock precisely, THREE 40-horse power 100lb. working pressure loco.-type BOILERS, by Davey Paxman and Co.; One 30-horse power ditto; a pair of 18½in. by 32in. Anto-Expansion Horizontal Steam Engines; and sundry Pumps, Tanks, and other useful gear.

A catalogue may be obtained when ready of the AUCTIONEERS, 11, Billeter-square, E.C.

By order of Mr. Wm. Black.—Thursday next.—Queen's-road, Beulah Hill, and 187, Gipsy-road, West Norwood.

**MR. WILLOUGHBY** will SELL, by AUCTION, on THURSDAY, AUGUST 3rd, at ELEVEN and ONE o'clock respectively, the STOCK-IN-TRADE, UTENSILS, and PLANT of a BUILDER and DECORATOR, 30,000 bricks, scaffolding, floorings, doors, window frames and sashes, size, paint, varnish, glass, office fittings, piping and guttering, boilers, cisterns, wheelbarrows, timber, ladders, &c.; also the well-made HOUSEHOLD FURNITURE and EFFECTS, brass and iron bedsteads, carpets, sewing machine, handsome 5ft. walnut sideboard, and a 4ft. walnut bookcase, 4ft. 6in. mahogany sideboard, set of walnut dining tables, mahogany dining-room suite, coal purdonium, pictures, curtains, about 650 yards of sateen, decorative material, and numerous effects.

Catalogues may be had on application to the AUCTIONEER, 399 and 363, West Norwood-road.

MOTE PARK, MAIDSTONE.

**MESSRS. SEYMOUR and WARING** (in conjunction with Messrs. R. WATERMAN and SONS) are favoured with instructions from the Council of the Royal Agricultural Society of England to SELL by AUCTION, on AUGUST 10th, 11th, 21st, and 22nd, 1899, the whole of the SHOW YARD ERECTIONS used at the Royal Agricultural Show, exceeding 1,000,000ft. of Timber, 10,000 Railway Sleepers, 400 Buck Gates, Quantity Iron Tanks, and other effects. Sale to commence at 11 a.m. precisely each day.

Catalogues may be obtained of Messrs. SEYMOUR and WARING, Auctioneers, 46, Earl-street, Maidstone; Messrs. R. WATERMAN and SONS, Auctioneers, No. 20, Week-street, Maidstone; and of Mr. R. S. BURGESS, Show Yard, Mote Park, Maidstone.

**EALING**.—Splendid site for bank, public institution, or business premises.

**MESSRS. ALEXANDER GREEN and CO.** are favoured with instructions to SELL by AUCTION, at the Mart, Tokenhouse-yard, E.C., on Wednesday, August 2nd, at One o'clock, the valuable Freehold Properties, Apsley and Emscote House, The Mall, Uxbridge Rad, Ealing, with a frontage of 89ft., and an average depth of 140ft. Early possession. Part is converted into shops, for which there is a great demand.

Particulars of G. GARDNER LEADER, Esq., Solicitor, 75, Mark-lane, E.C.; at the Mart, and of the AUCTIONEERS, Colonial House, 155, Fenchurch street, E.C.

**ANSELL and MALLOWS**, Architectural Draughtsmen and Quantity Surveyors, 21, Buckingham-street, Strand, W.C.

**R. I. B. A. EXAMS. PREPARATION**, personally or by correspondence, in three, six, nine, or twelve months' courses. Architectural Lending Library. Special three months' finishing courses.—For full particulars apply to Messrs. HOWGATE and BOND, Associates R.I.B.A., Perchard House, 70, Gower-street, W.C. (close to the British Museum.

**ARCHITECTURAL Institute, Society of** Architects, and Civil Service Technical Examinations. Preparation by correspondence, personally, or in residence. Seventeen first places.—MIDDLETON and CARDEN, 19, Craven-st., W.C. 1

**TO BRICKMAKERS**.—To be LET, near a Railway Station, Main Line G.E.R., having a long frontage to the road, about 71 acres of superior brick earth. Good supply of water. For further particulars, apply to Messrs. HASTIE, 65, Lincoln's-inn Fields, W.C. 2

APPOINTMENTS VACANT.

The charge for Advertisements under this heading is 1s. 6d. per insertion not exceeding four lines, and 6d. per line afterwards, prepaid. Three insertions may be had for the price of two.

**ARCHITECT'S ASSISTANT** (competent) WANTED.—Write, stating age, experience, and salary expected, to CARTER and ASHWORTH, Architects, 86, Eden Street, Kingston-on-Thames. 3

**ASSISTANT WANTED** for a few weeks, to complete and trace plans of existing Town Hall buildings, and to prepare other information for proposed competition.—Apply, stating salary required, which should not exceed £3 per week, to the CITY ENGINEER, Hull.

**ARCHITECTURAL DRAUGHTSMAN** WANTED, used to preparing scale and full-size drawings from small scale details.—State age, experience, and salary required to Box 166, Post Office, Leeds.

**BUILDER'S CLERK WANTED** for country builder's office at seaside. Must be trustworthy and competent to take charge of books and correspondence, and write shorthand. Permanency for a suitable man.—Address, stating age, salary required, with reference, JOBBINS, Builder and Contractor, Lee-on-the-Solent, Hants.

APPOINTMENTS WANTED.

The charge for Advertisements under this heading is 1s. 6d. per insertion not exceeding four lines, and 6d. per line afterwards, prepaid. Three insertions may be had for the price of two.

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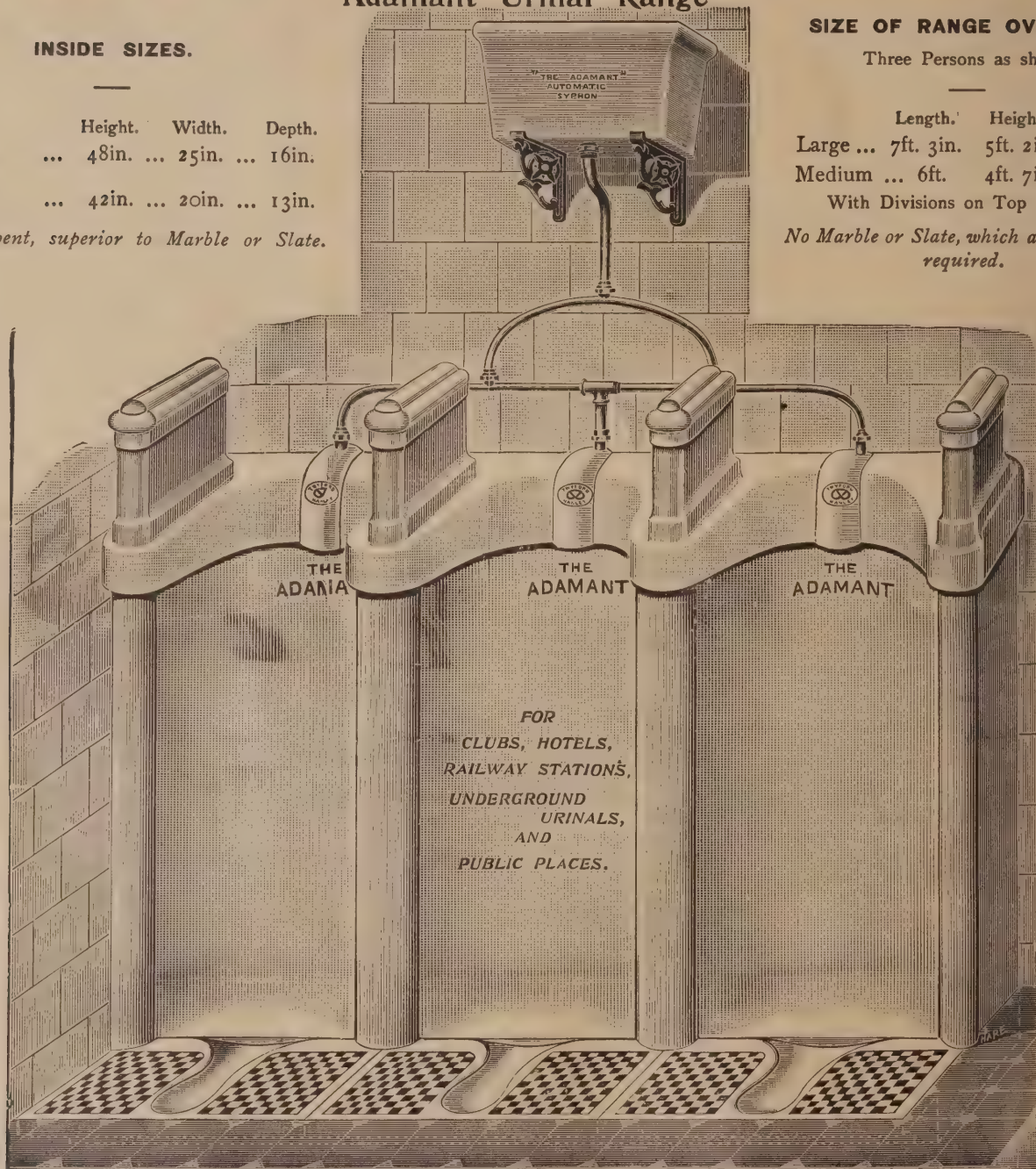
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